McClellanville Area
115 kV Transmission Line Project
Environmental Impact Statement
Addendum to Scoping Report

prepared for the
U. S. Department of Agriculture
Rural Utilities Service
by

The Mangi Environmental Group, Inc.

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List of Acronyms and Abbreviations

AES	Alternative Evaluation Study
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
ft	foot
GIS	geographic information system
EMF	electromagnetic field
FMNF	Francis Marion National Forest
kV	kilovolt
MA	Management Area
MCS	Macro-Corridor Study
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NOI	Notice of Intent
RCW	Red-cockaded Woodpecker
ROD	Record of Decision
ROW	right-of-way
RUS	Rural Utilities Service
SCE&G	South Carolina Electric & Gas
T&E	threatened and endangered
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area

1.0 Introduction

The U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) is considering a request from Central Electric Power Cooperative, Inc. (Central Electric) to fund construction of an electric power transmission line (referred to in this report as the "proposed Project" or the "Project"). Prior to making a decision to finance the proposed Project, RUS is required to complete an environmental review process in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (40 CFR Parts 1500–1508), and RUS's NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1794). RUS is the lead Federal agency in the preparation of an Environmental Impact Statement (EIS) for the proposed Project. The U.S. Forest Service (USFS) and the U.S. Army Corps of Engineers (USACE) are cooperating agencies.

The purpose of the "scoping" process is to identify the potential environmental issues associated with the Project. This involves actively soliciting input on the Project from the public, as well as from federal, tribal, state, and local authorities. The information obtained through this process identifies environmental issues and impacts that need to be further analyzed in the EIS, as well as mitigation measures that may lessen the severity of those issues/impacts.

This addendum to the Scoping Summary Report identifies the issues and alternatives that the Federal agencies have determined are appropriate for further detailed assessment in the EIS. It also summarizes the scope of issues that will be addressed in the EIS.

2.0 Overview of Scoping

2.1 Project Description and Preliminary Alternatives Studies

Central Electric proposes to construct, own, operate, and maintain a new 115 kilovolt (kV) transmission line that would originate at one of seven tap points and terminate at the proposed new McClellanville substation to be owned by Berkeley Electric Cooperative (Berkeley Electric). The primary purpose of this Project is to improve long-term reliable electric service to Berkeley Electric customers in the McClellanville area of South Carolina. The seven tap options include five points near existing substations or 115 kV transmission lines (Charity, Jamestown, Commonwealth Tap, Belle Isle, and Modified Britton Neck Tap) – and two proposed source points involving construction of a new 230/115 kV switching station (Honey Hill and Britton Neck).

To provide agencies and the public with a general understanding of the proposed Project, Central Electric prepared an Alternative Evaluation Study (AES), and the Mangi Environmental Group prepared a Macro-Corridor Study (MCS). The AES explained the need for the proposed Project,

discussed the alternatives that have been considered to meet that need, and recommended an engineering alternative considered best for fulfilling the need. The MCS defined the Project area, illustrated the Project start and end points, and identified potential transmission line alignments and associated corridors for the proposed Project. A total of 10 corridors were identified. Both the 2010 AES and MCS are available for review on the RUS website or upon request to RUS. (RUS website: http://www.rurdev.usda.gov/UWP-Central-Electric-Power-Cooperative.html)

Towards the end of scoping, an additional tap point and corridor, the Commonwealth Tap, were added to consideration. The public and agencies were notified of the new alternative by means of a newsletter (December 2010), and the scoping comment period was extended.

2.2 Public Involvement

The *McClellanville 115 kV Transmission Line Project Scoping Summary Report* (February 2011) provides a summary of the scoping process completed for this Project and catalogs all public and agency comments received. RUS received approximately 750 public and agency comments during the scoping period, originating from 94 letters and comment forms.

RUS held a public scoping meeting on September 29, 2010, at the St. James-Santee Elementary School and an agency meeting on the same date at the Sewee Educational Center. Approximately 102 individuals attended the public meeting, and 15 agency representatives participated in the agency meeting.

Due a mailing list error in the Charleston County area, RUS decided to extend the scoping comment period on December 8, 2011. The public and agencies were notified that the comment period had been extended to January 14, 2011, through the *Federal Register*, local newspapers, and direct mailers. During notification, the Commonwealth Tap alternative was also introduced.

2.3 RUS NEPA/Environmental Review Process

Figure 1.1, Steps of the RUS EIS Process, provides an overview of RUS's NEPA process for this Project. The USFS and USACE may have additional steps not demonstrated in this figure; these include potential tiering from RUS's EIS for their respective Federal actions and issuing separate agency decision documents (i.e., Record of Decision, ROD).

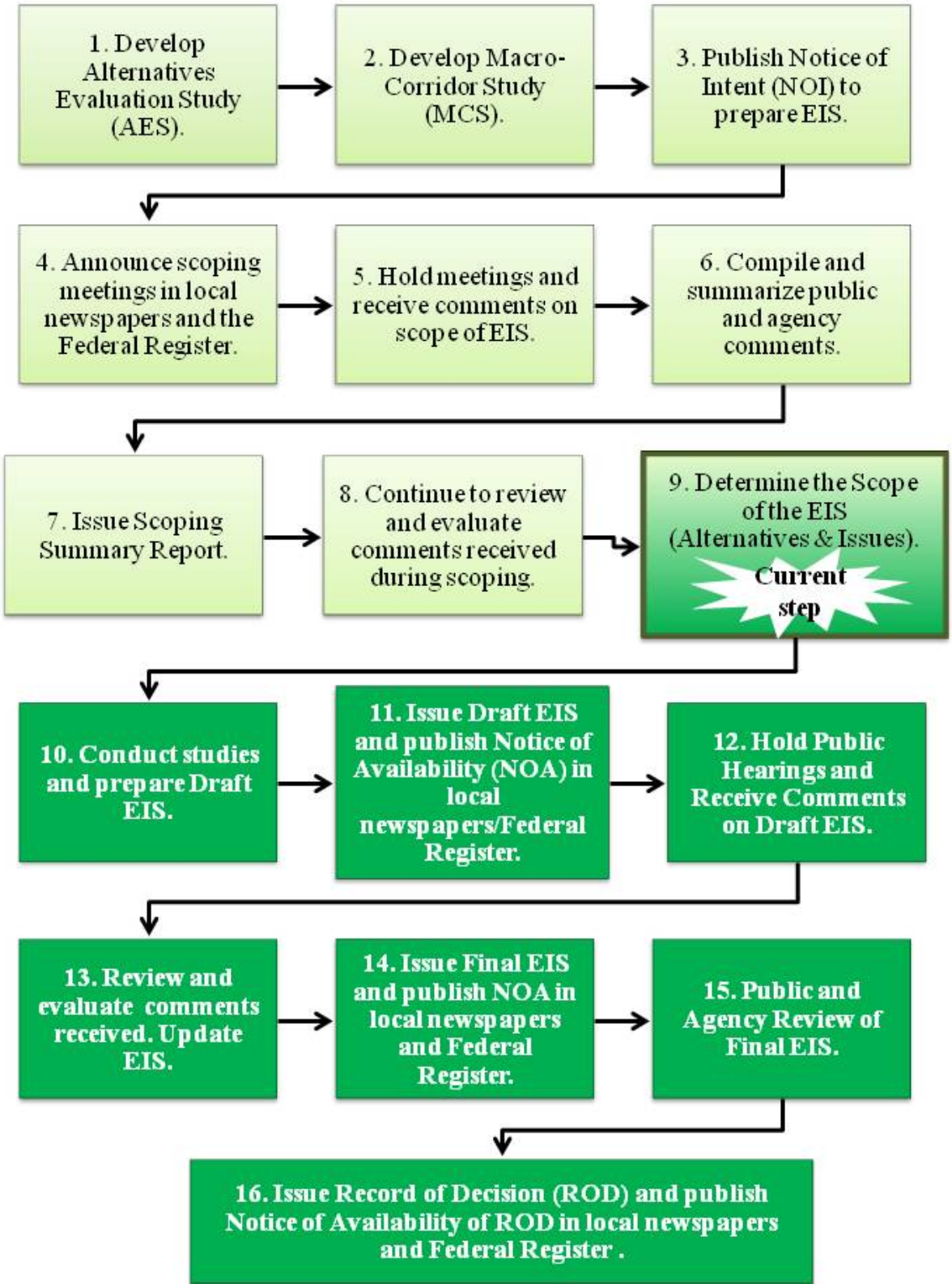

Figure 1.1 Steps of the RUS EIS Process

2.4 Lead and Cooperating Agency Actions

2.4.1 Rural Utilities Service

RUS is the lead Federal agency in the preparation of the EIS. Central Electric has requested that RUS provide financial assistance (i.e., a loan or loan guarantee) for construction of the proposed Project. RUS is authorized to provide financial assistance to utilities that provide service to rural communities under the Rural Electrification Act of 1936. Before RUS can take a Federal action (e.g., consider approval of a loan or loan guarantee application), it must conclude NEPA in addition to other regulatory processes (e.g., consultation under Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act). Once RUS concludes its NEPA process, the Project may be considered for financial assistance. RUS's review of a loan or loan guarantee application includes a detailed review of engineering specifications, load forecasts, and financial studies.

2.4.2 U.S. Forest Service

Because the Project includes corridors that may traverse the Francis Marion National Forest (FMNF), the USFS is a cooperating agency. If a preferred action alternative crosses the FMNF, the USFS may issue a separate ROD for its Federal action (e.g. potential issuance of a special use permit). The Forest Supervisor is responsible for management and evaluation of National Forest land under his or her jurisdiction and may grant a special use permit in accordance with the Federal Land Policy and Management Act, as amended. In addition, the decision must be consistent with the objectives of the FMNF Land and Resource Management Plan (Forest Plan), as revised in 1996. The Forest Supervisor is required to base his or her decision on issuance of a special use permit on the EIS. The Forest Supervisor's decision is limited to those parcels of land that are managed by the FMNF. The USFS ROD would be subject to an appeals process as prescribed in the USFS' departmental regulations.

2.4.3 U.S. Army Corps of Engineers

The proposed Project may require Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) permits. Accordingly, the USACE has agreed to participate as a cooperating agency. If the Project requires a permit, the USACE is required to evaluate the Project's impacts in accordance with 33 CFR Part 325, Processing of the Department of Army Permits, to determine whether the Project complies with Section 404 (b)(1) Guidelines for specification of disposal sites for dredged or fill material (40 CFR Part 230). The USACE will initiate its separate NEPA process after RUS has issued a ROD and Central Electric has submitted a permit application.

3.0 Evaluation of Alternatives

3.1 Development of Alternatives

3.1.1 Preliminary Studies

An Alternative Evaluation Study (AES) and Macro-Corridor Study (MCS) were prepared for the proposed Project. After RUS approved the documents, they were made available to the public and agencies for comment during scoping. The AES described the purpose and need for the proposed Project and assessed technological alternatives. The AES concluded that the best method of providing long-term reliable electric service to the McClellanville area was to construct a 115 kV transmission line from one of several tap points to the new McClellanville substation being proposed by Berkeley Electric.

The MCS focused on alternative corridors within which a transmission line could be constructed. It used GIS modeling to identify paths with the lowest impact to sensitive resources. Potential starting points were identified in the AES. All corridors terminated at the proposed McClellanville substation.

After initially receiving information from a broad range of stakeholders during December 2005, a GIS model was ran that identified ten least-risk paths within corresponding low-risk corridors (see Figure 3.1). They are referred to as Charity, Jamestown, Honey Hill, Belle Isle, and Britton Neck; with three alternative corridors originating from the Belle Isle substation and four corridors from Charity.

3.1.2 New Transmission Alternatives

Following publication of the AES and MCS, three additional paths and corridor alternatives were identified – Commonwealth, Modified Britton Neck, and Belle Isle No. 4. These alternative paths and corridors are mostly centered on previously disturbed road right-of-way along U.S. Highway 17 (Commonwealth and Belle Isle No. 4) and along an existing 230 kV transmission line owned by Santee Cooper (Modified Britton Neck).

3.1.3 Corridor Refinement

To simplify analyses, alternative corridors were modified to create a 2,400 foot buffer around the least-risk paths identified in the MCS and around the three new paths identified in Section 3.1.2. This buffer (1,200 feet on either side of a path) was established to provide flexibility for Central Electric when selecting a route within an alternative corridor. Areas whereby corridors overlapped were merged to create a larger alternative corridor (for an example, see Figure 3.2) to eliminate repetitive analyses.

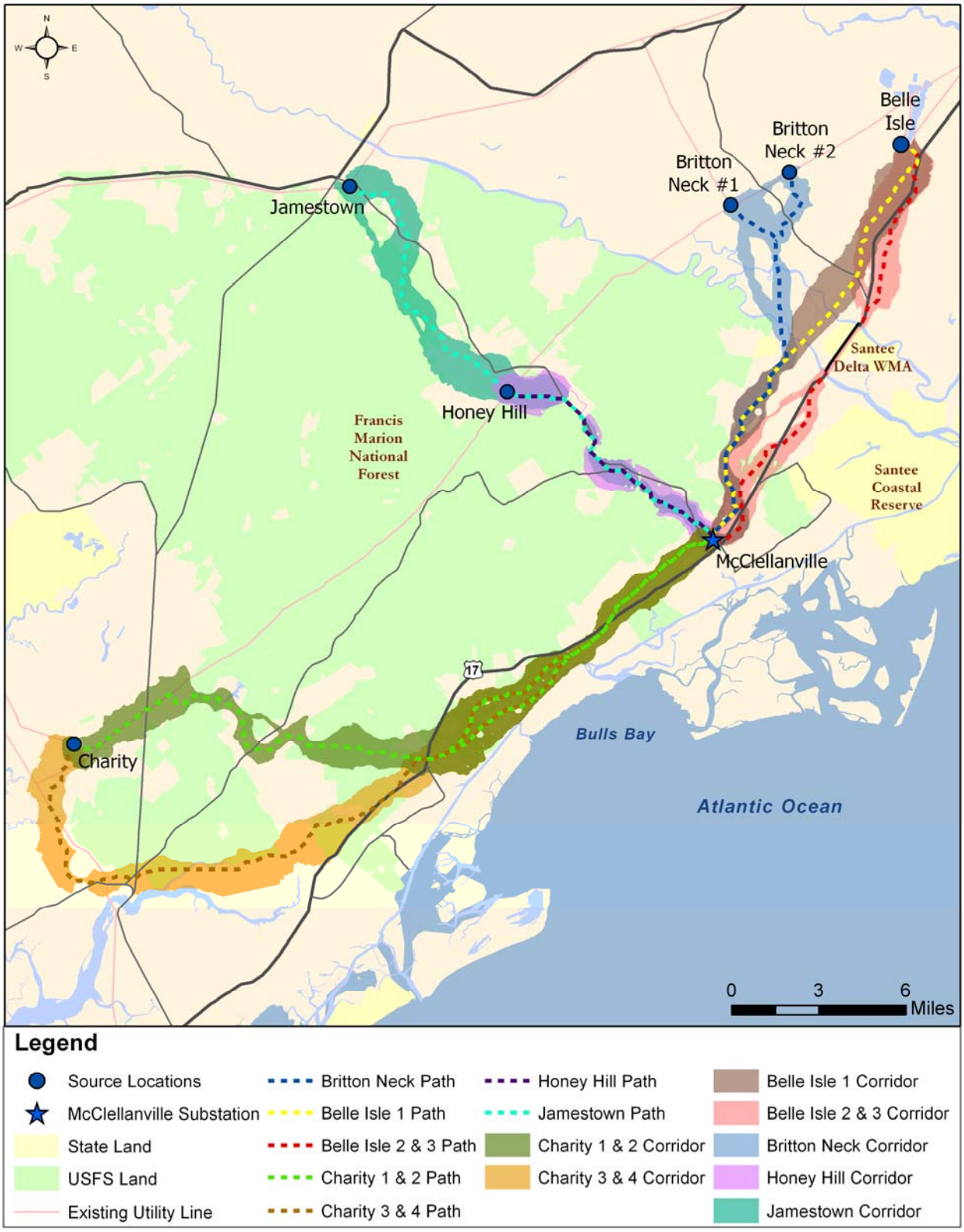

Figure 3.1 Least-risk paths with corresponding low risk corridors from Project MCS

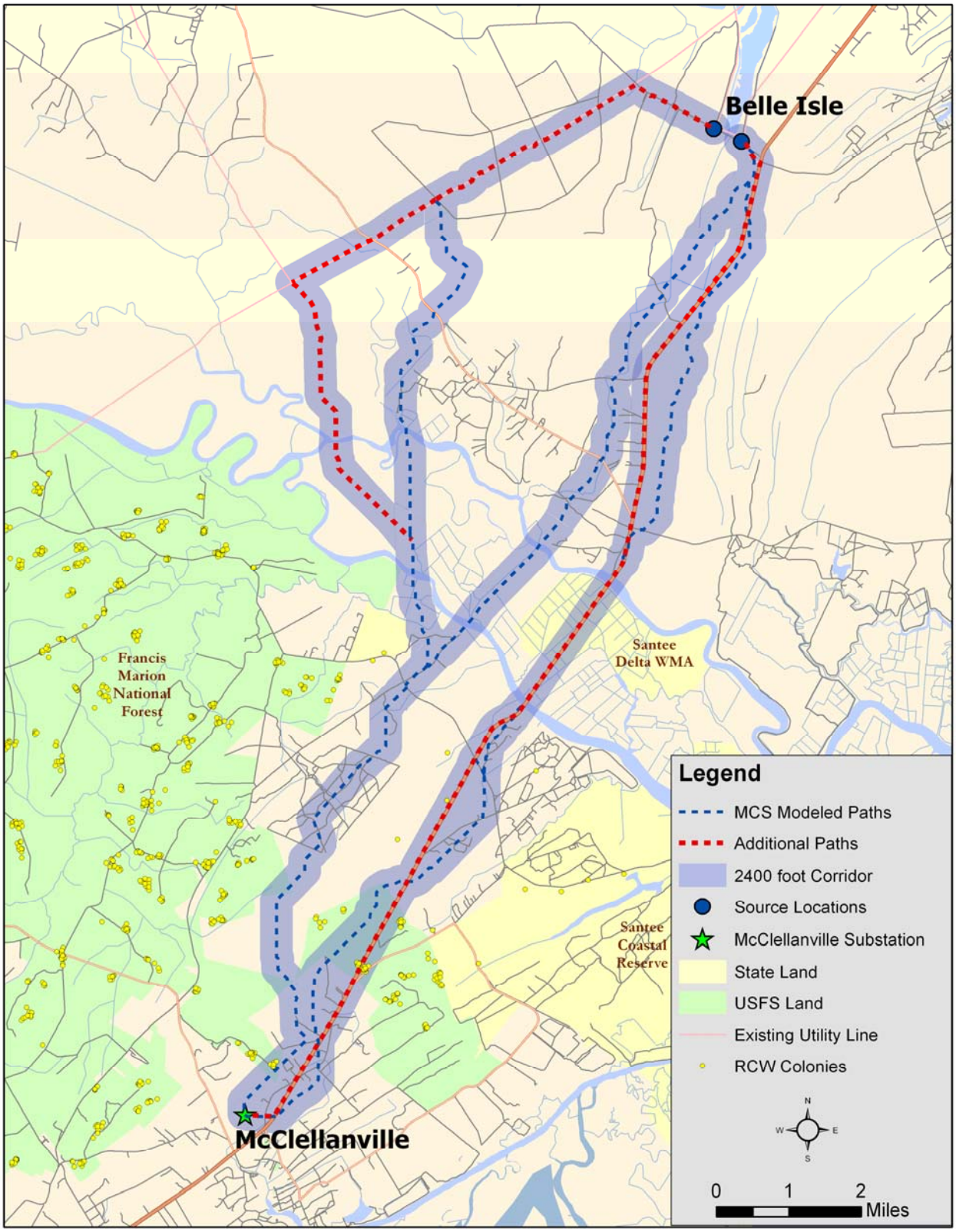

Figure 3.2 Sample of least-risk and newly identified paths with corresponding 2,400 ft corridors. Overlapping corridors have been merged into one larger corridor.

3.2 Evaluation Methodology and Criteria

In March 2011, the Federal agencies (RUS and USFS), Central Electric, Berkeley Electric, and Mangi met to evaluate all alternatives presented in Section 3.1. Criteria considered when evaluating alternatives included:

a) Engineering Factors: reasonableness of the alternative in meeting the purpose and need for the Project; reliability of the alternative (tap source, line length, etc.); contingency issues (ability for back-up infrastructure [e.g, existing distribution lines] to effectively provide power to the McClellanville Substation in case of natural disaster or transmission line failure); constructability
b) Environmental Factors: threatened and endangered (T&E) species impacts; water crossings and wetlands impacts; number of affected landowners; potential to affect historic properties; amount and intensity of land disturbance
c) Other: construction costs; environmental survey and mitigation costs; right-of-way acquisition

These criteria were qualitatively evaluated for each alternative, using the technical expertise of participants in the meeting and using information provided from the AES, MCS, and public scoping comments.

3.3 Results of the Alternatives Evaluation

3.3.1 Non-Transmission Alternatives

The non-transmission alternatives (No Action, Energy Efficiency & Conservation/Distributed Generation of Renewables, On-site Generation at McClellanville Substation, and Rebuild Existing Distribution Line) do not reasonably meet the purpose and need for the proposed action. The No Action and Energy Efficiency & Conservation/Distributed Generation of Renewables Alternatives do not meet the need of providing long-term reliable energy to the McClellanville area of Berkeley Electric's service territory. Due to load demand, the remaining non-transmission alternatives (On-site Generation at McClellanville Substation and Rebuild Existing Distribution Lines) would not eliminate the need for the construction of a transmission line in the future.

3.3.2 Honey Hill and Britton Neck Corridors

The Honey Hill corridor would begin at a 230/115 kV switching station that would be built near the existing Charity to Winyah 230 kV transmission line. This line is owned by Santee Cooper and crosses the FMNF to terminate at the existing Charity station. The Honey Hill switching station would be constructed approximately one-mile southwest of the Charity to Winyah line's crossing of State Highway 45. The Honey Hill corridor would run southeast and mostly aligns with State Highway 45 to reach the proposed McClellanville substation.

The Britton Neck corridors would originate at one of two 230/115 kV switching station sites located along the existing Charity to Winyah 230 kV transmission line. The corridor would align to the south, crossing the North and South Santee Rivers and private forest lands to reach the proposed McClellanville substation.

Upon further engineering review, it was determined that constructing a 230/115 kV switching station to energize one distribution substation (i.e., the proposed McClellanville substation) would be costly and violate standard utility practice. Bulk transmission lines with a voltage of 230 kV or greater in this area are designed to provide bulk energy delivery to numerous distribution substations. Providing service to one load center, which is being proposed under the Honey Hill and Britton Neck alternatives, could affect the overall reliability of the regional bulk transmission system.

Environmentally, construction of a new 230/115 kV swithcing station for either the Honey Hill or Britton Neck corridors would leave a noticeable intrusion on the landscape. It would require extensive excavation (approximately 6-9 acres) and the installation of large station structures approximately 40 ft high, station overhead shield wires and structures that are approximately 80 ft high, and a single communication tower approximately 140 ft high. In comparison, tapping from an existing 115 kV transmission line or substation would require a single 75 ft pole structure with a footprint of less than 0.5 acres of new land disturbance.

The Honey Hill corridor would have effects similar to the Jamestown Corridor (see Section 3.3.5). Most of the corridor traverses FMNF lands, including a wilderness linkage management area (MA 29) at Wambaw Creek. Constructability would be limited as additional right-of-way clearing may not be possible if a line were to cross MA 29. This corridor would cross ecologically sensitive areas of the FMNF and would require the completion of extensive biological surveys. This corridor also contains a low number of affected residences.

The Britton Neck Corridors mostly traverse private forest lands, resulting in a low number of affected residents and landowners. The corridors include a new, overhead crossing of the Santee Rivers and Delta, roughly halfway between the existing Santee Cooper 230 kV Transmission Line and U.S. Highway 17 bridge crossings. Primarily due to the water crossings, the corridors have moderate potential to affect sensitive wetland habitats, wildlife (including migratory birds), and cultural resources.

3.3.3 Charity Corridors

Each of the four Charity corridors begins at a tap point off the existing Charity switching station, which is located on the south side of Old Hagan Ave., west of its intersection with Cainhoy Road and within the small rural area of Charity in Berkeley County.

The Charity No. 1 corridor starts at the existing Charity switching station, runs parallel to Santee Cooper's existing Charity to Winyah 230 kV transmission line for approximately 4 miles, then

turns southeast through FMNF lands until the corridor merges with U.S. Highway 17. The corridor then travels east, using private lands and U.S. Highway 17 road right-of-way to reach the proposed McClellanville substation.

The Charity No. 2 corridor uses the same corridor path as described for the Charity No. 1 corridor, but is closer to U.S. Highway 17 than the Charity No. 1 corridor.

The Charity No. 3 corridor originates at the existing Charity switching station and goes south to avoid FMNF lands. The corridor primarily uses private lands and U.S. Highway 17 road right-of-way to reach the proposed McClellanville substation.

The Charity No. 4 corridor is a combination of the directed alignment west of U.S. Highway 17 and the directed alignment east of U.S. Highway 17 of Charity No. 2 corridor. It is the longest of all ten alternatives considered in the MCS.

From an engineering perspective, all four Charity corridors originate from a reliable power source (Charity switching station) and would require minor modifications at the existing Charity switching station to accommodate a new tap point. However, all the corridors propose constructing a transmission line greater than 25 miles in length, which would make the line itself less reliable than any of the other transmission alternatives. Longer lines are inherently less reliable than shorter lines as they have more surface area and are therefore more exposed to external factors (e.g., tree limbs) which can strike the line and cause failure.

These corridors also have contingency concerns. The existing McClellanville Metering Point currently receives its power from the Hamlin/Charity area (which is located near Mount Pleasant). If the transmission line were to fail due to a hurricane or other natural disaster, both the transmission line (which would provide primary service to the proposed McClellanville substation) and the existing distribution lines (which would provide back-up service to the proposed McClellanville substation) could fail, and the McClellanville area would be without power for a substantial time period.

Environmentally, all of the Charity corridors make good use of U.S. Highway 17 road right-of-way, with Charity Nos. 2 and 4 corridors maximizing its use. Charity Nos. 1 and 2 corridors parallel Santee Cooper's existing Charity to Winyah 230 kV transmission line for approximately three miles before crossing FMNF lands to reach U.S. Highway 17. These corridors would require the completion of extensive biological surveys for both protected species and unique habitats (e.g., wetlands and long-leaf pine stands) and could result in the incidental take[1] (see text

[1] Incidental Take: In some cases, the USFWS finds that an action may adversely affect a species, but not jeopardize its continued existence. Under most circumstances, the Endangered Species Act prohibits take, defined as harming (includes killing) or harassing a listed species. Incidental take – take that results from a Federal action but is not the purpose of the action – may be allowed when the USFWS approves it through an incidental take statement. The statement includes the amount or extent of anticipated take due to the Federal action, reasonable and prudent measures to minimize the take, and conditions that must be observed when implementing those measures.

box) of federally protected species. Charity Nos. 3 and 4 corridors are sited along the border of FMNF lands, causing an increase in line length of approximately 5 miles. These corridors have relatively minor impacts to wetlands and wildlife/vegetation.

All of the Charity corridors in general are more expensive due to their greater length. All four corridors also have a high potential to affect structures and residences.

3.3.4 Commonwealth Corridor

The Commonwealth alternative was identified early during scoping. The Hamlin to Commonwealth 115 kV transmission line was recently built and is owned by Central Electric. The line terminates at Berkeley Electric's Commonwealth substation, located at 1218 Lieben Road, Mt Pleasant, SC, 29464. Its source of power originates from the Hamlin substation owned by South Carolina Electric and Gas (SCE&G). This new alternative involves installing a tap junction on the existing Hamlin to Commonwealth 115 kV transmission line at the point where it approaches the Commonwealth substation, extending the 115 kV transmission line northeast from the tap point by paralleling U.S. Highway 17 for approximately 9 miles, and then using the portion of the Charity Nos. 3 and 4 corridors that parallel U.S. Highway 17 to reach the McClellanville substation.

Engineering-wise, Central Electric has expressed concerns about the source of power for this alternative, the Hamlin substation owned by SCE&G. According to the 2010 AES, the reliability of the Hamlin Metering Point, which was replaced by a substation in 2008, is the second worse power delivery point in Berkeley Electric's service territory – with the worst being the McClellanville Metering Point. SCE&G's Hamlin substation and distribution line is the primary power source of the McClellanville Metering Point. Since most of the reliability functions would be controlled at SCE&G's Hamlin substation (which is considered unreliable), Central Electric would have no control over the quality of the power source associated with this alternative.

Environmentally, the corridor shares environmental features similar to the Charity Nos. 3 and 4 corridors. It makes good use existing right-of-ways, which reflects general suggestions from the public during scoping. The beginning portion of the Commonwealth corridor – from the Commonwealth tap junction to its intersection with Charity Nos. 3 and 4 corridors – would not cross FMNF lands, State wildlife management areas, or undisturbed areas. This portion of the corridor, however, would cross populated areas and have a high potential to affect residences and other structures.

3.3.5 Jamestown Corridor

The Jamestown corridor originates at the existing Jamestown substation and roughly parallels State Highway 45 to reach the proposed McClellanville substation. It would primarily cross FMNF lands, including the wilderness linkage management area (MA 29) at Wambaw Creek.

From an engineering perspective, Central Electric has indicated this line would provide a reliable source of power. During public scoping, however, RUS received numerous comments questioning the reliability of the Jamestown substation as a source of power. RUS would require the review of additional technical information from Central Electric which supports its position and require concurrence from RUS' engineering staff if this alternative is carried forward for detailed analysis in the EIS. This corridor would require the construction of a relatively short transmission line (less than 25 miles in length) and does not present any contingency concerns.

Constructability of the line near MA 29 may be limited. The line may require expansion of road right-of-way near Wambaw Creek (on State Highway 45). Expansion may not be feasible where the road right-of-way crosses MA 29, a management area that connects one of the four federally designated wilderness areas within the FMNF. The area where right-of-way expansion may be needed on is on the edge a federally designated wilderness area.

Environmentally, the corridor would require the completion of extensive biological surveys for both protected species and unique habitats (e.g., wetlands and long-leaf pine stands). The corridor could also result in the incidental take of federally protected species. During scoping, this corridor received the most public opposition with the majority comments focusing on potential impacts to wildlife, protected species, vegetation, and cultural resources.

3.3.6 Belle Isle Corridors

Each of the four Belle Isle corridors begins at a tap point (i.e., the existing Belle Isle substation) located approximately two miles southeast of the Winyah generator in Georgetown County.

The Belle Isle No. 1 corridor originates at the Belle Isle substation on U.S. Highway 17. It follows U.S. Highway 17 for approximately 4 miles across private forest land to reach the proposed McClellanville substation. It includes an overhead crossing of the Santee Rivers and Delta approximately 1 to 2 miles northwest of the U.S. Highway 17 bridge and generally avoids the Santee Delta Wildlife Management Area (WMA).

The Belle Isle No. 2 corridor begins at the Belle Isle substation on U.S. Highway 17, follows highway right-of-way until it reaches the North Santee River, and mostly uses private forest lands to reach the McClellanville substation. At the Santee Rivers and delta crossing, this alternative proposes using directional boring under the Santee Delta WMA near the U.S. Highway 17 bridge.

The Belle Isle No. 3 corridor stays within one mile of U.S. Highway 17. It includes an overhead crossing of the Santee WMA near the U.S. Highway 17 bridge.

The Belle Isle No. 4 corridor (a new alternative not presented during scoping) is centered on a path that entirely uses U.S. Highway 17 road right-of-way and includes an overhead crossing of the Santee Rivers and Delta at the Santee WMA.

Engineering-wise, all of the Belle Isle corridors would originate from a reliable power source and would require minor modifications at the existing Belle Isle Substation to accommodate a new tap point. These corridors would also require the construction of a relatively short transmission line (less than 25 miles in length) and would not present any contingency concerns.

All of the Belle Isle corridors involve crossing the Santee Rivers and Delta. Belle Isle No. 1, 3, and 4 corridors propose overhead crossings; the Belle Isle No. 2 corridor proposes a 2.5-mile underground crossing. In addition to underground water crossings (e.g., directional boring under the Santee Rivers and Delta) being almost 10 times more expensive than the overhead option, underground transmission lines are less reliable than overhead lines. Underground transmission lines could take days to weeks to restore if line failure were to occur. This is mostly because the cause of failure would not be visible, whereas a downed overhead line is simple to detect.

In order to minimize visual effects, Central Electric has proposed siting the line through areas of the Delta that have been encroached by forests. This can be accomplished by using shorter, squat poles (poles with a height of 60-75 ft) through the Delta instead of using typical transmission line poles with a height of 75-100 ft. (NOTE: crossing navigable waters such as North and South Santee Rivers may require the use of taller poles, with the bottom-most wire being at least 20 ft above the nearest fixed bridge – e.g., the U.S. Highway 17 bridges.) Using squat poles through the Delta would result in the transmission line being the same height as the surrounding tree line, therefore allowing the forest to visually screen the transmission line. This visual screening would also minimize risks for avian collisions.

The Belle Isle corridors include a small amount of affected FMNF lands and have low to moderate potential to affect structures and residences. Belle Isle No. 3 and 4 corridors make good use of U.S. Highway 17 road right-of-way, and accordingly, contain a greater amount of FMNF lands and affected structures and residences. However, FMNF lands adjacent to U.S. Highway 17 road right-of-way provide more marginal habitat for wildlife. In areas were red-cockaded woodpecker cavity trees are present, there is potential that incidental take could occur. In these incidences, mitigation through the installation of artificial cavities in trees with more suitable habitat for the species could occur. In addition, Central Electric would negotiate with landowners to reduce effects to structures and residences. For these reasons, Belle Isle Nos. 1, 3, and 4 corridors are considered to have a moderate environmental risk.

3.3.7 Modified Britton Neck Corridors

The Modified Britton Neck corridors (two new alternatives not presented during scoping) use the original Britton Neck corridors discussed in Section 3.3.2. Differences, however, include installing a tap junction on the existing Winyah to Belle Isle 115 kV transmission line and paralleling Santee Cooper's existing Charity to Winyah 230 kV transmission line for approximately 3 to 5 miles before crossing the Santee Rivers and Delta.

Similar to the Belle Isle corridors, these alternatives would originate from a reliable power source (i.e., the existing Winyah to Belle Isle 115 kV transmission line). They also include construction of a relatively short transmission line (less than 25 miles in length) and do not present any contingency concerns.

At the Santee Rivers and Delta crossings, the Modified Britton Neck corridors share the same environmental concerns as the Belle Isle Nos. 1, 3, and 4 corridors and were accordingly given a moderate environmental risk. The Modified Britton Neck corridors include the least amount of FMNF lands and number of affected structures and residences.

3.4 Summary of Results

Table 3.1 provides of a detailed summary of Section 3.3, separating the evaluation criteria into three main categories – engineering, environmental, and other.

Table 3.1: Summary of Alternatives Analysis Results

Alternative	Engineering Factors	Environmental Factors	Other
Transmission			
Honey Hill	Alternative includes construction of a 230/115 kV switching station to serve one distribution load. This may compromise the reliability to the regional 230 kV bulk transmission system. Constructability of a line near MA 29 on FMNF lands is questionable. Central Electric may not be able to acquire the width of ROW needed to properly construct and operate the line. Alternative involves construction of a short line (< 25 miles). Alternative has no contingency concerns.	Corridor has the greatest percentage of FMNF lands. It would cross sensitive habitats (e.g., wetlands and long-leaf pine stands) and MA 29, a federally designated wilderness linkage area. Corridor has a high risk for environmental impact (i.e., protected species, specially designated areas, and wetlands). Alternative involves extensive excavation (6-9 acres) to construct a new 230/115 kV switching station. It would be an intrusion on the landscape that would be difficult to visually buffer. Corridor has low potential to affect structures and residences.	Low costs to construct the line would be outweighed by the costs of constructing a new 230/115 kV switching station. Corridor would require extensive biological surveys and costly environmental mitigation.
Britton Neck Nos. 1 and 2	Alternatives include construction of a 230/115 kV switching station to serve one distribution load. This may compromise the reliability to the regional 230 kV bulk transmission system. Alternatives involve construction of a short line (< 25 miles). Alternatives have no contingency concerns.	Corridors include a new, overhead crossing of the Santee Rivers and Delta. Corridor has moderate risk for environmental impact (i.e., protected species, migratory birds, wetlands, historic properties, scenic views). Alternative involves extensive excavation (6-9 acres) to construct a new 230/115 kV switching station. It would be intrusion on the landscape that would be difficult to visually buffer. Corridor has low potential to affect structures and residences.	Low costs to construct the line would be outweighed by the costs of constructing a new 230/115 kV switching station. Corridor would require biological surveys and have moderate costs for environmental mitigation (e.g., conversion of forested wetlands to herbaceous wetlands in a tidal system).

Alternative	Engineering Factors	Environmental Factors	Other
Charity No. 1	Alternative originates from a reliable source. It involves a minor modification to the existing Belle Isle Substation (less than 0.5 acres of new land disturbance) and does not compromise the reliability of the regional bulk transmission system. Alternative involves construction of a long line (> 25 miles). Alternative has contingency concerns.	Corridor has large amount of FMNF lands. It has a moderate to high risk for environmental impact (i.e., protected species, wetlands, and historic properties). Corridor has a high potential to affect structures and residences. Corridors include U.S. Highway 17 road ROW and a portion of the existing Santee Cooper 230 kV transmission line ROW.	Relatively high costs to construct the line due to line length and amount of affected landowners. Corridor would require extensive biological/historic property surveys and costly environmental mitigation. Corridor makes good use of existing ROW as was requested by the public during scoping.
Charity No. 2	Corridor shares engineering conclusions identical to the Charity No. 1 corridor.	Corridor shares environmental conclusions similar to Charity No. 1 corridor but uses more of U.S. Highway 17 road ROW.	Corridor shares miscellaneous conclusions identical to the Charity No. 1 corridor.
Charity No. 3	Corridor shares engineering conclusions identical to the Belle Isle No. 1 corridor.	Corridor has a large amount of FMNF lands, but is generally sited along the borders of FMNF lands. It has a low to moderate risk for environmental impact (i.e., protected species, wetlands, and historic properties). Corridor has a high potential to affect structures and residences.	Relatively high costs to construct the line due to line length and amount of affected landowners. Corridor makes fair to good use existing ROW.
Charity No. 4	Corridor shares engineering conclusions identical to the Belle Isle No. 1 corridor.	Corridor shares environmental conclusions similar to Charity No. 3 corridor but uses more of U.S. Highway 17 road ROW.	Corridor shares miscellaneous conclusions identical to the Charity No. 3 corridor.

Alternative	Engineering Factors	Environmental Factors	Other
Commonwealth	Alternative originates from a source owned by SCE&G (Hamlin substation). Source is historically known for being unreliable. Central Electric would have no control over correcting the source's deficiencies. Alternative involves a minor modification to the existing Hamlin to Commonwealth 115 kV transmission line (installation of a tap junction; requires the mounting of equipment on an existing pole). Alternative does not compromise the reliability of the regional bulk transmission system. Alternative has contingency concerns.	Corridor has a large amount of FMNF lands, but is generally sited along U.S. Highway 17 road ROW. It has a low to moderate risk for environmental impact (i.e., protected species, wetlands, and historic properties). Corridor has a high potential to affect structures and residences.	Relatively higher costs to construct the line due to amount of affected landowners. Corridor maximizes use existing ROW as was requested by the public during scoping. Of the transmission alternatives, this corridor received the greatest public support.
Jamestown	Central Electric has indicated that the alternative originates from a reliable source; however, questions regarding the reliability of the Jamestown substation were raised during scoping. This alternative involves a minor modification to the existing Jamestown substation (less than 0.5 acres of new land disturbance) and would not compromise the reliability of the regional bulk transmission system. Constructability of a line near MA 29 on FMNF lands is questionable. Central Electric may not be able to acquire the ROW width needed to properly construct and operate a line.	Corridor has a large amount of FMNF lands. Similar to the Honey Hill corridor, it would cross sensitive habitats (e.g., wetlands and long-leaf pine stands) and MA 29, a federally designated wilderness linkage area. Corridor has a high risk for environmental impact (i.e., protected species, specially designated areas, and wetlands).	Corridor would require extensive biological surveys and costly environmental mitigation. Corridor received the most public opposition during scoping.

Alternative	Engineering Factors	Environmental Factors	Other
	Alternative has no contingency concerns. Alternative involves construction of a short line (< 25 miles).		
Belle Isle No. 1	Alternative originates from a reliable source. It involves a minor modification to the existing Belle Isle Substation (less than 0.5 acres of new land disturbance) and would not compromise the reliability of the regional bulk transmission system. Alternative involves construction of a short line (< 25 miles). Alternative has no contingency concerns.	Corridor includes a new, overhead crossing of the Santee Rivers and Delta. It has a moderate risk for environmental impact (i.e., protected species, migratory birds, wetlands, historic properties, scenic views). Corridor generally avoids sensitive FMNF lands and includes the lowest amount FMNF lands. Corridor has low potential to affect structures and residences.	Low cost to construct the line and minor modification to the Belle Isle substation. Moderate costs to complete biological and cultural resource surveys and for environmental mitigation.
Belle Isle No. 2	Alternative originates from a reliable source. It involves a minor modification to the existing Belle Isle Substation (less than 0.5 acres of new land disturbance) and would not compromise the reliability of the regional bulk transmission system. Alternative involves boring under the Santee Rivers and Delta. Underground lines are difficult to return to service after line failure because the location of failure is not visible. Alternative involves construction of a short line (< 25 miles). Alternative has no contingency concerns.	Corridor generally avoids sensitive FMNF lands and includes a small amount FMNF lands. The alternative would bore under the Santee Delta Wildlife Management Area. Corridor has a low to moderate risk for environmental impact. Risk is low at the Santee Delta Wildlife Management Area crossing and moderate along private forest areas. Corridor has low potential to affect structures and residences.	Low costs to construct the overhead portion of line would be outweighed by the costs of the underground portion. Moderate cost to complete biological and cultural resource surveys and potential low cost for environmental mitigation.

Alternative	Engineering Factors	Environmental Factors	Other
Belle Isle No. 3	Corridor shares engineering conclusions identical to the Belle Isle No. 1 corridor.	Corridor includes a new, overhead crossing of the Santee Rivers and Delta. It has a moderate risk for environmental impact (i.e., protected species, migratory birds, wetlands, historic properties, scenic views). Corridor contains active red-cockaded woodpecker cavity trees on both FMNF and private forestry lands. The corridor also crosses woodpecker management areas and foraging buffers, which would require environmental mitigation. Corridor has moderate potential to affect structures and residences.	Low costs to construct the line and make minor modifications to the Belle Isle substation. Moderate costs to complete biological and cultural resource surveys and for environmental mitigation. Corridor makes good use existing ROW, as was requested by the public during scoping.
Belle Isle No. 4	Corridor shares engineering conclusions identical to the Belle Isle No. 1 corridor.	Corridor shares environmental concerns identical to the Belle Isle No. 3 corridor. Corridor maximizes the use of existing U.S. Highway 17 road right-of-way to the extent practicable. Corridor has moderate potential to affect structures and residences.	Corridor shares miscellaneous conclusions identical to the Charity No. 3 corridor, but maximizes the use of existing ROW.
Modified Britton Neck Nos. 1 and 2	Alternatives originate from a reliable source. They involve a minor modification to the existing Winyah to Belle Isle 115 kV transmission line (installation of a tap junction; requires the mounting of equipment on an existing pole) and do not compromise the	Corridors include a new, overhead crossing of the Santee Rivers and Delta. Corridors have a moderate risk for environmental impact (i.e., protected species, migratory birds, wetlands, historic properties, scenic views).	Low costs to construct the line and make minor modifications (e.g., tap junction) on the existing Winyah to Belle Isle 115 kV transmission line. Moderate costs to complete biological and cultural resource

Alternative	Engineering Factors	Environmental Factors	Other
	reliability of the regional bulk transmission system. Alternatives involve construction of a short line (< 25 miles). Alternatives have no contingency concerns.	Corridors generally avoid sensitive FMNF lands and include a low percentage of affected FMNF lands. Corridors have a low potential to affect structures and residences. Corridors use U.S. Highway 17 road ROW and would be adjacent to Santee Cooper's existing Winyah to Charity 230 kV transmission line.	surveys and for environmental mitigation.

4.0 Scope of the EIS

As noted in Section 1.2, RUS is the lead federal agency in preparing the EIS for the Project. The USFS and USACE have agreed to be cooperating federal agencies. The Mangi Environmental Group, Inc. and Linear Projects, Inc. have been retained to assist in writing the EIS.

This section of the addendum to the *McClellanville 115 kV Transmission Line Project Scoping Summary Report* identifies the issues and alternatives that the Federal agencies have determined are appropriate for further assessment in the EIS.

4.1 Alternatives Eliminated from Further Consideration in the EIS

Based on the alternatives evaluation process specified in Section 3.0, several alternatives to the proposed Project have been eliminated from further review and include the following:

4.1.1 Non-Transmission Alternatives

The non-transmission alternatives (i.e., Energy Efficiency & Conservation/Distributed Generation of Renewables, On-site Generation at McClellanville Substation, and Rebuild Existing Distribution Line) do not reasonably meet the purpose and need for the proposed action.

4.1.2 Transmission Alternatives

4.1.2.1 Britton Neck and Honey Hill Corridors

Tapping a 230 kV bulk transmission line to serve one distribution load would compromise the stability of the regional bulk transmission system and violate good utility practice. In addition, construction of a new 230/115 kV switching station for the Britton Neck and Honey Hill alternatives would have a 6-9 acre footprint, as opposed to the less than 0.5 acre footprint tap point options associated with the other transmission alternatives. Primarily for engineering and financial concerns, these alternatives were eliminated from further consideration in the EIS.

4.1.2.2 Belle Isle No. 2 Corridor

Of the Belle Isle corridors, the Belle Isle No. 2 corridor is the only one which involves an underground crossing of the Santee Rivers and Delta. While boring under the Santee Rivers and Delta reduces the environmental risks associated with the water crossing, it, however, introduces a reliability concern (as it is time-consuming and costly to access and repair a buried transmission line) and results in an alternative whose costs is almost 10 times greater than an overhead crossing. Due to engineering and financial concerns, this alternative was eliminated from further evaluation in the EIS.

4.1.2.3 Jamestown Corridor

The Jamestown corridor was determined to be acceptable from a general engineering perspective (although this would require additional review and concurrence from RUS' engineering staff), but would have constructability concerns where the line would have to cross MA 29 due to the potential lack of sufficient right-of-way for a transmission line. This corridor also would require extensive biological surveys and would cross sensitive areas of the FMNF. Lastly, this corridor received the most public opposition during scoping due to its potential impacts to wildlife/T& E species, vegetation, biological, and cultural resources. Due to environmental and constructability concerns, this alternative was eliminated from further evaluation in the EIS.

4.1.2.4 Charity Corridors

Although the Charity corridors originate from a reliable power source, they all involve the construction of a long transmission line (which is less reliable and costly), and they all have contingency concerns. Charity Nos. 1 and 2 corridors would require extensive biological surveys; all of the corridors would greatly affect structures and residences. Charity Nos. 3 and 4 corridors appeared to have relatively low effects to the natural environment. Primarily for engineering and financial reasons, all of these alternatives were eliminated from further consideration in the EIS.

4.1.2.4 Commonwealth Corridor

The Commonwealth alternative shares similar engineering concerns as the Charity corridors (i.e., contingency concerns); it, however, originates from an unreliable power source. This alternative reflects suggestions from the public to follow existing transmission corridors, easements, and major roads – specifically U.S. Highway 17 – and accordingly has relatively low effects to the natural environment. However, this alternative has a high potential to affect structures and residences. Mostly for engineering concerns, this alternative was eliminated from further consideration in the EIS.

4.2 Alternatives to be evaluated in the EIS

The alternatives to be evaluated further in the EIS include the following:

4.2.1 No Action (Non-transmission)

Section 1502.14 (d) of the Council on Environmental Quality's NEPA implementing regulations requires the alternatives analysis in the EIS to "include the alternative of no action." While the No Action Alternative may not meet the purpose and need for the Project, it will be analyzed to provide a baseline comparison against the alternatives selected for detailed evaluation in the EIS.

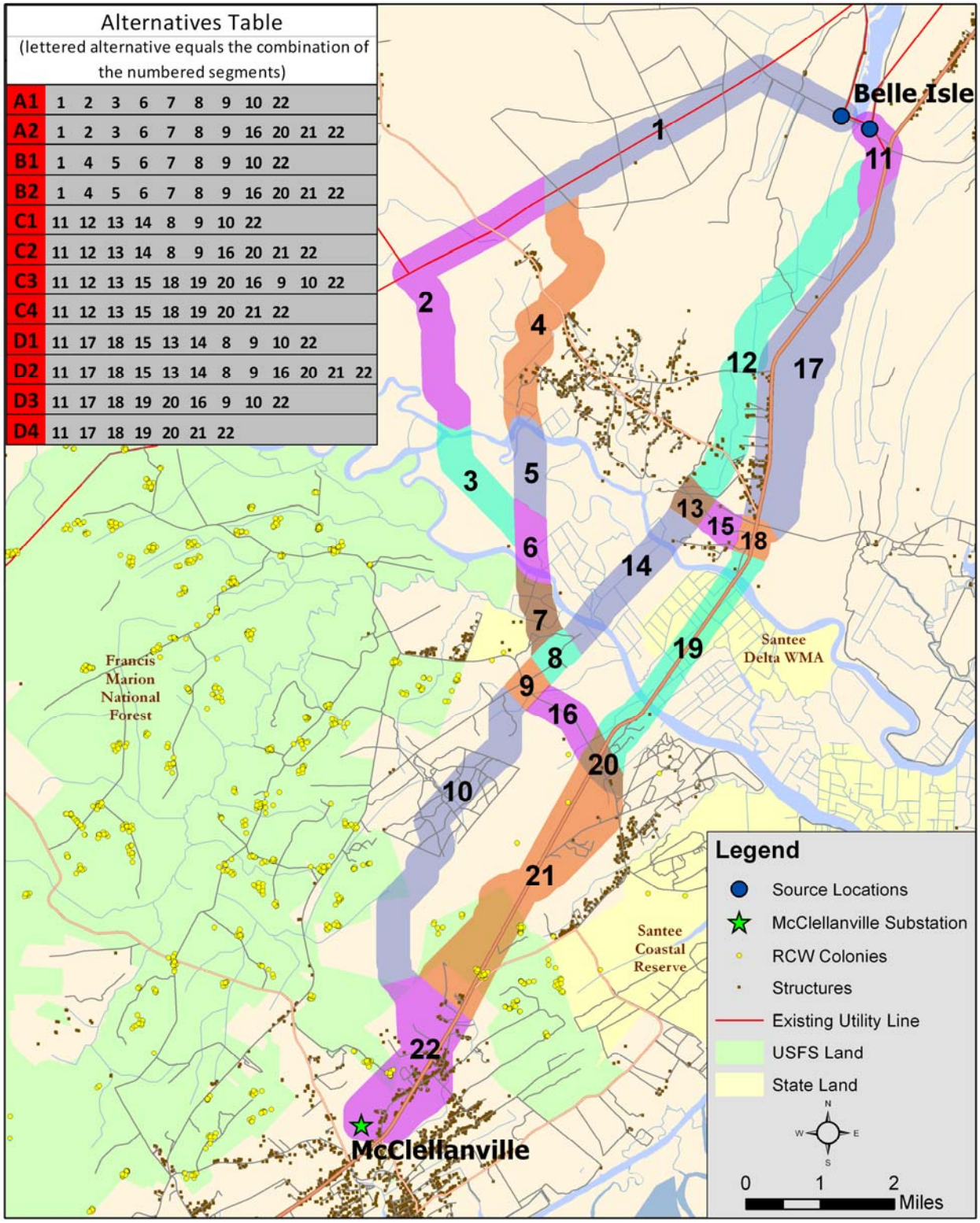

Figure 4.1 Transmission line siting alternatives to be evaluated in the EIS. Alternatives include the Modified Britton Neck and Belle Isle Nos. 1, 3, and 4 corridors broken into segment variations.

4.2.2 Transmission Line Construction (Proposed Action)

The EIS will evaluate and compare the impacts of 12 alternative corridors for siting and constructing a 115kV transmission line (see Figure 4.1). These alternatives are combinations and variations of the Belle Isle Nos. 1, 3, and 4 and Modified Britton Neck corridors discussed in Section 3.0 of this report. Each of the alternative corridors would use a combination of between 9 to 12 connected segments. Each corridor would originate from one of two points near the Belle Isle substation, cross the Santee Rivers and Delta, and continue south towards the proposed McClellanville substation. The new naming convention displayed in Figure 4.1 will be used to identify the alternative corridors in the forthcoming EIS. For the purposes of this report, the original names of these corridors will be used.

4.2.2.1 Belle Isle Nos. 1, 3, and 4 Corridors (Alternatives C1 and D4)

Belle Isle Nos. 1, 3, and 4 corridors would originate from a reliable source, the existing Belle Isle substation. They would involve the construction of relatively short lines and would not have contingency concerns. The corridors would have a moderate potential to affect the natural and cultural environment and have a low potential to affect structures and residences. For these reasons, these alternatives were selected for detailed evaluation in the EIS. An additional six alternative corridors (C2 to C4 and D1 to D3) are variations of these alternatives and also would be analyzed in the EIS.

4.2.2.2 Modified Britton Neck Corridors (Alternatives A1 and B1)

For reasons similar to the selection of Belle Isle Nos. 1, 3, and 4 corridors, the Modified Britton Neck corridors (A1 and B1) were selected for detailed evaluation in the EIS. The alternatives would originate from a new tap of a reliable source, involve the construction of relatively short lines, and would not have contingency concerns. The alternatives would share environmental conclusions identical to the Belle Isle Nos. 1, 3, and 4 corridors, but have the potential to affect the least amount of FMNF lands. Two additional alternative corridors (A2 and B2) are variations of these alternatives and also would also be analyzed in the EIS.

4.2.2.3 Linkage Areas

Due to the public's request to maximize the use of existing rights-of-way (e.g., utility lines and roads/highways) and to allow for greater flexibility when siting a transmission line, the consideration of two linkage areas—segments 15 and 16 in Figure 4.1— will be evaluated in the EIS. These areas include: a corridor segment north of the North Santee River that links Belle Isle No. 1 corridor with the merged Belle Isle Nos. 3 and 4 corridors (segment 15) and a corridor segment south of the South Santee River that links the merged Modified Britton Neck and Belle Isle No. 1 corridors with the merged Belle Isle Nos. 3 and 4 corridors (segment 16). These linkages areas are included in Alternatives A2, B2, C2 to C3, and D1 to D3.

4.3 Issues to be addressed in the EIS

The entirety of the proposed transmission line and any new substations and modifications will be assessed in the EIS for the Project. The following topics are within the scope of the EIS and will be assessed under each alternative.

4.3.1 Purpose and Need

The proposed purpose and need for the Project will be further clarified in the EIS. This section will also identify all the communities that would benefit from construction of the Project. A large number of scoping comments questioned the purpose and need for the Project, stating that reliability concerns and projected load demand did not seem significant enough to warrant the proposed Project. Many suggested that the environmental costs of a transmission line outweighed its benefits and that an incomplete cost-benefit analysis does not reflect this. Several expressed a distinct preference for the No Action Alternative.

4.3.2 Alternatives Analysis

Information included in the AES and MCS will be further clarified in the EIS. Specifically, additional information on non-transmission alternatives and reasoning for values and weights assigned to siting criteria in the MCS will be provided. This section will also provide more reasoning for the elimination of non-transmission and certain transmission corridor alternatives from detailed assessment in the EIS.

4.3.3 Project Description

Preliminary design, construction, and maintenance details associated the proposed Project will be discussed in the EIS. This includes the likely design features of the proposed transmission line, typical construction and post-construction practices, and standard right-of-way maintenance procedures. A description of SCE&G's potential involvement in the Project would also be included. Lastly, all components of the project, including any connected actions need by Berkeley Electric to interconnect the Project to its distribution system (e.g, new distribution lines) would also be discussed.

4.3.4 Affected Environment and Environmental Consequences

Chapter 3 of the EIS will provide the Affected Environment descriptions with a section devoted to each resource likely to be affected. Chapter 4 will describe the potential impacts of the alternatives on each of those resources. All topics discussed below will be compared against the No Action Alternative in the EIS.

4.3.4.1 Geology and Prime/Important Soils

These sections will include a general discussion of topography, geology, and soils. Potential impacts during the construction and operational phase of each alternative will be assessed.

4.3.4.2 Water Resources and Wetlands

These sections will discuss surface water, water quality, and the types of wetlands present in the study area. The potential to affect wetlands and waters of the U.S. that may fall under the USACE's jurisdiction will be discussed for each alternative.

4.3.4.3 Biological Resources

These sections will include a discussion of T&E species, wildlife resources (including migratory birds), and vegetation. Potential impacts from each alternative will be analyzed for both the construction and operational phases.

4.3.4.4 Cultural and Historic Resources

These sections will discuss the known cultural and historic resources of the area, including the Hopsewee and Hampton Plantations. A general discussion of geological features as they pertain to drainage and flooding, and their probabilities of containing a historic property will be included. Potential impacts to cultural and historic resources will be evaluated for the construction and operational phase of each alterative.

4.3.4.5 Visual and Aesthetic Resources

This section will include a discussion of those features that define the visual character of the area, including natural features, vistas, view sheds, and community characteristics like architecture and rural setting. Potential impacts to the uniqueness and visual quality of an area will be assessed under each alternative.

4.3.4.6 Human Health and Safety

This section will identify and discuss the potential risk to human health and safety from electro-magnetic fields (EMFs), and construction and operation of a 115 kV transmission line. The discussion of health effects from EMFs and typical construction and maintenance-related incidents and injuries to workers will be non-specific to any one alternative.

4.3.4.7 Land Rights

This section will describe the legal designation and status of land in the area, including buffers, protected areas, right-of-ways, easements, special use permits, etc. It will assess the potential impact to these lands by each alternative.

4.3.4.8 Land Use and Zoning

This section will provide a description of the land use patterns, zoning requirements, and ordinances (including recreation) within each of the identified corridors. Potential impacts to land use and zoning will be analyzed under each alternative.

4.3.4.9 Socioeconomics

This section will identify those aspects of the social and economic environment that are sensitive to changes and that may be affected by actions associated with the proposed construction and

operation of a 115 kV transmission line. The discussion of socioeconomic factors will include the local demographics, economy, and employment statistics of the area, including real estate values and customer electric rates. The potential for positive and negative socioeconomic impacts will be evaluated for each alternative, including the No Action Alternative.

4.3.4.10 Environmental Justice

This section will discuss the racial and economic makeup of the potentially affected population as it pertains to Executive Order 12898 and evaluate the potential disproportionate impacts to low-income and/or minority populations during the construction and operational phase of each alternative, including affects to these communities with implementation of the No Action Alternative.

4.3.5.9 Transportation and Traffic

This section will describe traffic and transportation networks and facilities in the area for each alternative, and discuss the potential impacts of the Project during the construction and operational phases. Networks and facilities include roads and navigable waters.

4.3.5.10 Recreation

This section will describe recreation facilities and land-based and water-based recreational activities and evaluate the potential impacts of the Project to individuals pursuing such activities in the project vicinity during the construction and operational phases.

4.3.6 Cumulative Impacts

This section will identify past, current and proposed projects within the area that, along with the proposed Project, may result in cumulative effects on resources. It will be incorporated into Chapter 4 of the EIS.

5.0 EIS Schedule

The schedule for completing the EIS is provided in Table 5.1 below. This timeline is subject to change as necessary.

Table 5.1 – EIS Schedule

Next Steps in EIS Process	Date
Publish Addendum to Scoping Report	October 2011
Publish Draft EIS	March 2012
Hold Public Informational Hearings on Draft EIS	March 2012
Comment Period on Draft EIS Closes	April-May 2012
Evaluate Comments; Modify EIS	Spring-Summer 2012
Publish Final EIS	Fall 2012
Final EIS Review Period Closes	Fall-Winter 2012
RUS Issues NEPA Decision for Project	2012-2013