



Community Impact Assessment

Draft 06

March 2025



Community Impact Assessment

SC Highway 41 Corridor Improvements Project

Charleston and Berkeley Counties, South Carolina

Draft 06

March 2025

Prepared for
Charleston County

Prepared by



Charleston County
Transportation Development

4045 Bridge View Drive, Suite C204, North Charleston, SC 29405

www.hwy41sc.com



This page intentionally left blank.



Contents

| | | |
|------------|--|-----------|
| 1.0 | Introduction | 1 |
| 1.1 | Project Description..... | 1 |
| 1.1.1 | Alternatives..... | 3 |
| 1.1.2 | Public Involvement..... | 7 |
| 1.2 | Purpose of Community Impact Assessment | 9 |
| 2.0 | Methodology | 11 |
| 2.1 | Study Area..... | 11 |
| 2.2 | Data Sources | 14 |
| 2.3 | Limited English Proficiency | 14 |
| 2.4 | Impact Assessment | 14 |
| 3.0 | Existing Conditions | 16 |
| 3.1 | Study Area Growth Trends..... | 16 |
| 3.2 | Limited English Proficiency | 19 |
| 4.0 | Environmental Consequences..... | 21 |
| 4.1 | Study Area..... | 23 |
| 4.1.1 | Economic and Business Conditions..... | 27 |
| 4.1.2 | Land Use..... | 27 |
| 4.1.3 | Mobility and Access | 27 |
| 4.1.4 | Public Health and Safety | 28 |
| 4.1.5 | Sensory Aspects | 30 |
| 4.1.6 | Temporary Impacts | 31 |
| 4.1.7 | Recurring and Cumulative Effects..... | 31 |
| 4.2 | Brickyard/Colonnade | 31 |
| 4.2.1 | Community Resources | 32 |
| 4.3 | Cardinal Hill | 34 |
| 4.3.1 | Community Resources | 34 |
| 4.4 | Dunes West..... | 36 |
| 4.4.1 | Community Resources | 39 |
| 4.4.2 | Economic and Business Conditions..... | 40 |
| 4.4.3 | Mobility and Access | 40 |
| 4.4.4 | Public Health and Safety | 41 |
| 4.4.5 | Residential Aspects | 41 |
| 4.5 | Gregorie Ferry | 41 |
| 4.5.1 | Community Resources | 44 |
| 4.5.2 | Sensory Aspects | 45 |
| 4.6 | Horlbeck Creek..... | 45 |
| 4.6.1 | Community Resources | 46 |

| | | |
|------------|--|-----------|
| 4.7 | Ivy Hall..... | 48 |
| 4.7.1 | Economic and Business Conditions..... | 48 |
| 4.8 | Park West..... | 50 |
| 4.8.1 | Community Resources | 51 |
| 4.8.2 | Land Use..... | 53 |
| 4.8.3 | Mobility and Access | 53 |
| 4.8.4 | Public Health and Safety | 53 |
| 4.8.5 | Sensory Aspects | 54 |
| 4.8.6 | Residential Aspects | 54 |
| 4.9 | Phillips Community | 55 |
| 4.9.1 | Phillips Community Cultural Landscape..... | 58 |
| 4.9.2 | Community Resources | 62 |
| 4.9.3 | Economic and Business Conditions..... | 62 |
| 4.9.4 | Mobility and Access | 63 |
| 4.9.5 | Public Health and Safety | 63 |
| 4.9.6 | Sensory Aspects | 63 |
| 4.9.7 | Residential Aspects | 63 |
| 4.10 | Planter's Pointe..... | 64 |
| 4.10.1 | Community Resources | 65 |
| 4.11 | Rivertowne..... | 67 |
| 4.11.1 | Economic and Business Conditions..... | 67 |
| 4.12 | Seven Mile..... | 69 |
| 4.12.1 | Economic and Business Conditions..... | 71 |
| 4.12.2 | Land Use..... | 75 |
| 4.12.3 | Residential Aspects | 75 |
| 4.12.4 | Social, Cultural, and Psychological Aspects..... | 75 |
| 4.12.5 | Recurring and Cumulative Effects..... | 75 |
| 4.13 | Cainhoy | 76 |
| 5.0 | Synthesis and Conclusions | 78 |
| 5.1 | Summary of Impacts | 78 |
| 5.2 | Offsetting Benefits of the Alternatives | 79 |
| 5.3 | Next Steps | 79 |
| 6.0 | References..... | 81 |

Tables

| | |
|--|----|
| Table 1. Top Ten Comment Topics..... | 9 |
| Table 2. Impacted Acreages and Individual Residential Parcels by Community and Build Alternative in Comparison with Study Area Averages..... | 22 |
| Table 3. Comparison of Overall Community Impacts by Build Alternative | 78 |

Figures

| | |
|--|----|
| Figure 1. Project Location | 2 |
| Figure 2. Build Alternatives Associated with the Project..... | 6 |
| Figure 3. Study Area and Associated USCB Block Groups..... | 12 |
| Figure 4. Communities | 13 |
| Figure 5. Per Capita Income Rates | 20 |
| Figure 6. Major Community Resources..... | 24 |
| Figure 7. Charleston County Land Use | 25 |
| Figure 8. Berkeley County Land Use | 26 |
| Figure 9. Brickyard/Colonnade Community Resources and the Build Alternatives | 33 |
| Figure 10. Cardinal Hill Community Resources and the Build Alternatives | 35 |
| Figure 11. Dunes West Community Resources and the Build Alternatives | 38 |
| Figure 12. Gregorie Ferry Community Resources and the Build Alternatives | 43 |
| Figure 13. Horlbeck Creek Community Resources and the Build Alternatives | 47 |
| Figure 14. Ivy Hall Community Resources and the Build Alternatives | 49 |
| Figure 15. Park West Community Resources and the Build Alternatives | 52 |
| Figure 16. Phillips Community Resources and the Build Alternatives | 57 |
| Figure 17. Phillips Community Cultural Landscape..... | 61 |
| Figure 18. Planter's Pointe Community Resources and the Build Alternatives | 66 |
| Figure 19. Rivertowne Community Resources and the Build Alternatives | 68 |
| Figure 20. Seven Mile Community Resources and the Build Alternatives..... | 70 |
| Figure 21. Cainho Community Resources and the Build Alternatives | 77 |

Graphs

| | |
|---|----|
| Graph 1. Population Growth between 2015 and 2040..... | 17 |
| Graph 2. Employment Growth between 2015 and 2040..... | 18 |

Appendices

Appendix A – Affected Parcels

This page intentionally left blank.

1.0 Introduction

Charleston County is evaluating the benefits and impacts from the proposed SC Highway 41 (SC 41) corridor improvements (hereafter, Project), in accordance with the National Environmental Policy Act (NEPA). The United States Army Corps of Engineers (USACE) will be the lead federal agency upon submittal of a Clean Water Act permit application for the Project.

This report, the community impact assessment (CIA), evaluates the effects of the Project on the surrounding human community or communities. The SC 41 community characterization report (CCR; HDR 2020) presents the existing historical, social, cultural, and economic conditions in and near the Project study area and serves as a baseline for this CIA. The CCR documents existing conditions related to the 12 human communities identified in the study area, including details on local Gullah African-American communities. Due to their histories, the Gullah communities warrant special consideration. More details on Gullah communities are provided in Section 3.0, as well as in the CCR and in the Phillips Community Cultural Landscape report and the Seven Mile cultural history report included as an appendix to the CCR (Richardson Seacat 2022, Richardson Seacat et al. 2022). The latter reports place special emphasis on the Phillips Community and Seven-Mile, both located within the Project study area. Several other associated communities are also described as natural resources via the National Register of Historic Places (NRHP)-eligible historic districts. The consideration and documentation of environmental and socioeconomic effects is a critical part of NEPA, and findings from this CIA are summarized in the Environmental Report for the Project.

1.1 Project Description

HDR, in cooperation with a team of consultants, was contracted by Charleston County to provide engineering design and environmental permitting services associated with proposed improvements to the SC 41 corridor from US Highway 17 (US 17) to Clements Ferry Road in Charleston and Berkeley Counties, South Carolina. The Project also includes improvements to the intersection of SC 41 and US 17, a new tie-in road between SC 41 and Winnowing Way, and a 1.3-mile new location roadway, Laurel Hill Parkway, between SC 41 and Park West Boulevard. The Project study area is defined as a 5.6-mile-long mainline corridor of SC 41 from US 17 in Mount Pleasant across the new Wando River Bridge to Clements Ferry Road in Berkeley County. The study area also includes US 17 from the intersection with Hamlin Road to the entrance to the Market at Oakland and an expanded study area around Laurel Hill County Park and the Phillips Community between Bessemer Road and Dunes West Boulevard (hereafter, study area; (Figure 1). SC 41 is a two-lane highway that provides vehicular access between US 17 and Clements Ferry Road, as well as north to Huger, South Carolina. The primary purpose of the Project, as stated in the draft Environmental Report (HDR 2022), is to reduce traffic congestion within the SC 41 corridor to accommodate future traffic projections. The secondary purposes of the Project are to enhance safety throughout the corridor, improve transportation system and community connections, and provide bicycle and pedestrian accommodations, while minimizing community and environmental impacts. This section of SC 41 serves as a minor arterial that has experienced an increase in traffic due to regional growth and currently sustains operations that exceed capacity and are projected to worsen over time.



Figure 1. Project Location

1.1.1 Alternatives

Various location and design alternatives were evaluated during the development of the Project. The Charleston Area Transportation Study (CHATS) Travel Demand Model distributes trips in part according to the capacity of the links (roads) within the network. By adding lanes (capacity) to a link, more traffic may be drawn to that link. Similarly, if a new link (roadway on new alignment) is placed in the model, connecting two existing links, some of the existing or forecasted traffic on those adjoining links may be drawn to the new connecting link (road). A wide variety of alternatives were modeled in this manner, by either adding capacity directly to SC 41, or by adding connecting or parallel roadways in an attempt to distribute the traffic demand, relieve congestion and reduce travel times. Twelve different improvement alternatives and a No-Build alternative were initially analyzed in the unmodified CHATS model. Development and screening of the range of alternatives was initially completed through modifications to the CHATS model.

Following the initial planning level screening analysis, the alternatives were refined and detailed analyses of Alternatives 1, 2, 7 and the Compromise Alternative were performed. The refinements included an update of growth forecasts in the Project area to correspond to changes in development plans for the proposed Cainhoy Plantation (discussed in more detail in Section 3.1). The developer recently committed to not developing approximately fifty percent of the area previously planned for development. This forecast was applied to the remaining alternatives prior to conducting more detailed analyses. Upon further analysis, Alternatives 2 and 7 were eliminated, and two modified alternatives, Alternatives 5A and 7A, were developed. After additional analysis, Alternative 5A was eliminated from further evaluation because of the significant impacts to utilities and the environment. Alternative 5A would result in the most property impacts, as well as tidal and non-tidal wetland impacts. Additionally, Alternative 5A was proposed through Laurel Hill County Park and would prevent its intended function as a passive park, as stipulated in the land trust associated with this property. Ultimately, Alternatives 1 and 7A were merged and adjusted to create the Compromise Alternative in an effort to avoid as many negative impacts to the Phillips Community as possible. The resulting road modifications will divert traffic to Dunes West Boulevard and widen SC 41 by one lane through the Phillips Community, rather than four.

1.1.1.1 No-Build Alternative

The No-Build Alternative consists of making no improvements to the current two-lane roadway of SC 41. The No-Build Alternative serves as a baseline for comparison to the three build alternatives, as an anticipated future with no changes to SC 41.

1.1.1.2 Alternative 1

Alternative 1 consists of widening SC 41 to a five-lane roadway with a center raised island or two-way left-turn lane from US 17 to the Wando River Bridge (Figure 2). This build alternative would also include a sidewalk along the east side of the roadway and a multi-use path for bicyclists and pedestrians along the west side of the roadway along the entire length. This alternative would be approximately 4.6 miles long and would include complementary improvements at selected intersections. This alternative would provide the necessary improvements to accommodate future traffic deficiencies from US 17 to Clements Ferry Road through the construction of additional travel lanes, a center two-way left-turn lane in some sections, and a multi-use path.

1.1.1.3 Alternative 7A

Alternative 7A consists of widening SC 41 to a five-lane roadway with a center raised island or two-way left-turn lane from US 17 to Joe Rouse Road and from Dunes West Boulevard to the Wando River Bridge and a three-lane roadway with a center two-way left-turn lane from Joe Rouse Road to Dunes West

Boulevard. Alternative 7A would also reroute SC 41 parallel to Bessemer Road and onto Laurel Hill County Park property, parallel to the power line easement, and then back along Dunes West Boulevard (Figure 2). This reroute would also be a five-lane roadway with a center raised island. This build alternative would also include a sidewalk along the east side of the roadway and a multi-use path for bicyclists and pedestrians along the west side of the roadway along the entire length. This alternative would be approximately 5.3 miles long and would include complementary improvements at selected intersections. This alternative would provide the necessary improvements to accommodate future traffic volumes from US 17 to Clements Ferry Road through the construction of additional travel lanes, a center two-way left-turn lane in some sections, and a multi-use path.

1.1.1.4 *Compromise Alternative*

The preferred Compromise Alternative consists of widening SC 41 to a four-lane roadway with a planted median from US 17 to Joe Rouse Road and from Dunes West Boulevard to Clements Ferry Road and a three-lane roadway with a center two-way left-turn lane from Joe Rouse Road to Dunes West Boulevard. The Compromise Alternative would also construct a parallel road to Bessemer Road onto Laurel Hill County Park property, parallel to the power line easement, and then tie into Park West Boulevard via a new roundabout and continuing along Dunes West Boulevard. This new location parkway would be a two-lane roadway with a multi-use path for bicyclists and pedestrians along the east side of the roadway. Along SC 41, this alternative would include a sidewalk along the west side of the roadway and a multi-use path on the east side of the roadway from US 17 to Joe Rouse Road and from Dunes West Boulevard to Clements Ferry Road and a sidewalk on both sides of the roadway between Joe Rouse Road and Dunes West Boulevard. The Compromise Alternative would be approximately 5.6 miles long and would include complementary intersection improvements at selected intersections. This alternative would provide the necessary improvements to accommodate future traffic deficiencies from US 17 to Clements Ferry Road through the construction of additional travel lanes, a center two-way left-turn lane in some sections, and a multi-use path.

1.1.1.5 *US 17 and SC 41 Intersection*

Alternative 1 and 7A include the same proposed improvements of the US 17 and SC 41 intersection. The Compromise Alternative includes refinements to the proposed improvements of the US 17 and SC 41 intersection based on community feedback from stakeholders. While the intersection design concept primarily focuses on improving traffic flow onto and off of SC 41 (via the SC 41 and US 17 intersection), the concept also considers improvements for surrounding intersections including Hamlin Road, Brickyard Parkway, Gregorie Ferry Road, Winnowing Way, and Porchers Bluff Road. Alternative 1 and 7A's specific improvements include modifications to the Hamlin Road and Brickyard Parkway intersection, widening Winnowing Way from two lanes to a four-lane roadway with a central two-way turn lane, and constructing a bridge over the new Winnowing Way and Porchers Bluff Road intersection. Additional turn lanes would be added on US 17 at the Hamlin Road, SC 41, and Winnowing Way and Porchers Bluff Road intersection. The Compromise Alternative's specific improvements include modifications to the Hamlin Road and Brickyard Parkway intersection, widening Winnowing Way from two lanes to a new three-lane roadway with a central two-way turn lane in the northern portion of Winnowing Way and a new four-lane roadway with a central two-way turn lane in the southern portion of Winnowing Way, and adding a two-lane connecting road between Winnowing Way and proposed SC 41 where existing SC 41 intersects Old SC 41. Additional turn lanes would be added on US 17 at the Hamlin Road and Brickyard Parkway intersection, SC 41, and Winnowing Way and Porchers Bluff Road intersection. The proposed improvements for all three alternatives would also include bicycle and pedestrian accommodations to connect with the proposed multi-use path on SC 41. The proposed intersection improvements would limit

some existing turning movements, but the design provides alternative options to maintain access to all homes and businesses.

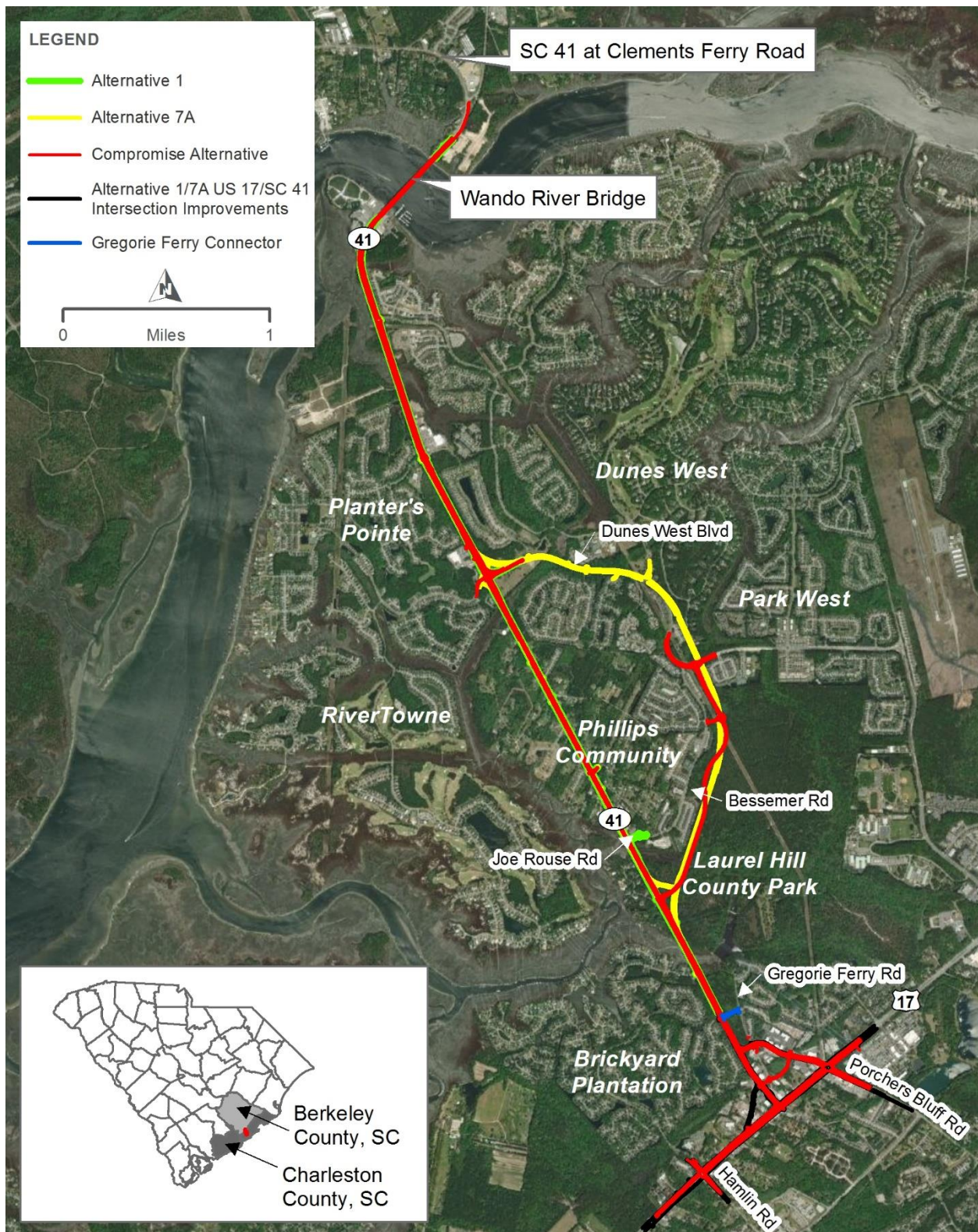


Figure 2. Build Alternatives Associated with the Project

1.1.2 Public Involvement

Public participation has been a critical component of the NEPA process, and the Project team made early and committed efforts to engage the public. A Public Involvement Plan (PIP) was developed and outlined the Project's approach to public, agency and stakeholder involvement. This included outreach to diverse groups, including historic communities, to improve Project awareness and understanding of the NEPA process. The Project team has proactively shared Project information and sought input from the public, agencies, municipalities, and other stakeholders. The primary goal of public involvement efforts has been to foster open communications between a diverse public, agencies and the Project team to gain productive input leading to better decisions that meet study area needs.

1.1.2.1 Public and Stakeholder Meetings

Several meetings, including in-person public information meetings, online meetings, stakeholder meetings, and neighborhood and small group meetings, have been held to date. These consisted of the following:

- Community and property owners' association (POA) meetings held September 20-22, 2017;
- Presentations to Town of Mount Pleasant Council on October 10, 2017, November 5, 2018, and June 3, 2019; and December 10, 2019;
- A public kickoff meeting held at the Park West Gym on November 13, 2017;
- Stakeholder Working Group meetings held on September 26, 2017, April 26, 2018, November 14, 2018, and March 6, 2019; August 12, 2020;
- Four meetings with leadership representing community, neighborhood and business groups on April 25-26, 2018;
- NEPA Scoping Meeting on May 16, 2018;
- Community and POA meetings on January 22, March 5-6, and August 27, 2019;
- Meeting with the Seven Mile Community Action Group for Encouragement on August 1 and August 29, 2019;
- Meeting with Charleston County School District Staff on September 13, 2019;
- Meeting with Charleston Moves on November 12, 2019;
- Briefing with Charleston County Councilman on December 6, 2019;
- Meeting regarding Salt Marsh Mitigation with SCDNR and USFWS on February 18, 2020;
- Meeting with Chairman Sumney on February 20, 2020;
- Project update and coordination meeting with SCDOT on April 1, 2020; Charleston County SC 41 Corridor Improvements Project Update Meeting on July 30, 2020;
- USACE 41 Corridor Improvements stakeholder meeting on August 3, 2020;
- Meeting with Mt. Pleasant Stakeholders on August 4, 2020;
- Brickyard HOA meeting on August 4, 2020;
- Phillips Community meeting on August 10, 2020, and March 23, 2021;
- Meeting with Town of Mt. Pleasant Mayor Haynie, Eric Demoura, and Brad Morrison on August 10, 2020;
- Zoom Meeting with Charleston County Councilwoman Jenny Honeycutt on August 17, 2020;
- Dunes West community meeting on August 25, 2020, and March 10, 2021;
- Brickyard community meeting on August 27, 2020;
- Park West community meeting on September 2, 2020, and March 11, 2021;
- Town Transportation Committee stakeholder meeting on September 2, 2020;
- Horlbeck Creek stakeholder meeting on September 4, 2020, and March 17, 2021;

- Cardinal Hill community meeting on September 11, 2020, and April 14, 2021;
- Schweers briefing on September 22, 2020;
- Meeting with Charleston County Leadership on October 8, 2020;
- Community Action Group for Encouragement (CAGE) community meeting on March 12, 2021, April 15, 2021, and June 16, 2021;
- Rivertowne community meeting on May 12, 2021;
- Colonnade community meeting on May 12 & 17, 2021;
- Meeting regarding CAGE proposal on May 18, 2021;
- CAGE meeting on May 25, 2021;
- Greater Goodwill AME Church meeting on May 27, 2021;
- Highway 41 presentation to Councilman Middleton on July 15, 2021; and
- Meeting with Horlbeck Creek and Sass/Wehrman on August 4, 2021.

Other outreach methods such as mailings, fliers, e-mail invitations, newspaper ads, social media announcements, and a detailed Project website were also used in obtaining public input and sharing Project information. Several approaches were used to promote public meetings and increase public engagement. These approaches included advertisements placed in local newspapers, press releases distributed by Charleston County, printed and digital newsletters, community flyers, social media posts, website updates, and updated hotline recordings.

1.1.2.2 Historic District and TCP Outreach

Due to the presence of three historic and TCP Gullah African-American communities in the study area, special consideration was made during the planning and development of public outreach efforts for these communities within the study area. The Project team developed materials specifically to reach these communities and encourage participation with the Project. Flyers were developed and distributed to key locations within the study area to notify residents of upcoming public meetings, and extra efforts were made to engage community representatives early and throughout the environmental process. Mailing lists were developed to include these areas so that all post cards, letters and other mailings would reach the residents. The Project team held one-on-one meetings with representatives of Historic District and TCP communities to keep them informed, collect feedback, and understand how to better engage the community. Meetings with community representatives were also held in documenting the Phillips Community Cultural Landscape, and this information was also used in producing the Seven Mile cultural history report.

1.1.2.3 Public and Agency Comments

As of July 2022, 7,177 comments have been recorded in the Project database that cover a range of topics from communities and historic resources, to wetlands, cost and alternatives. The comments have been evaluated by the Project team for inclusion in Project development and have influenced the development of the alternatives. In addition to comments, contact information has also been recorded in the Project database and is used to keep the public informed on relevant Project information. The Project database was used to record other Project activities including meetings, mailings, and other outreach activities.

To collect greater feedback from the public, the Project team developed several methods to submit comments including email, a fillable form on the Project website, a dedicated Project hotline, and an address to mail comments. All submitted comments were documented in the Project database following a specific protocol to ensure all information was accurately recorded.

The table below summarizes the top ten comment topics received.

Table 1. Top Ten Comment Topics

| Topic | Comments Received |
|--------------------------|-------------------|
| Traffic/Safety | 2,989 |
| Revised Concept | 1,067 |
| Alternative 7/7a | 1,916 |
| Alternative 1 | 2,230 |
| Residential Areas | 2,830 |
| Property Value | 582 |
| New/Platted Developments | 565 |
| Cost | 1,402 |
| ROW | 395 |
| Noise | 387 |

*Note that total number of comments is 7,177; however, multiple categories were selected for each of the comment topics above leading to a higher total number.

1.2 Purpose of Community Impact Assessment

The Federal Highway Administration (FHWA) guidance document entitled *Community Impact Assessment: A Quick Reference for Transportation* (FHWA 2018; hereafter, the FHWA guidebook or the guidebook) recommends a process to evaluate the effects of a transportation project on a community and its quality of life. The assessment of effects helps ensure that transportation investment addresses concerns and minimizes effects to communities where possible. While FHWA is not providing oversight of this Project, the County is using the FHWA guidance document as it represents a current, industry-accepted methodology for the CIA in transportation projects.

This CIA evaluates the effects of the Project on the twelve surrounding communities identified by HDR in the CCR. Following the guidebook, to evaluate effects, the following topics are discussed in relation to each identified community:

- community cohesion and other sociocultural aspects;
- community resources, including facilities and services;
- economics;
- land use;
- mobility, access, and safety;
- residential and business relocations;
- visual aesthetics;
- Limited English Proficiency (LEP); and
- temporary impacts.

Effects to the Phillips Community Cultural Landscape (Phillips Cultural Landscape) are also considered in the CIA. The Phillips Cultural Landscape is an NRHP-eligible historic district encompassing the Phillips Community and several community facilities and natural resources located outside of the current community boundary (Richardson Seacat 2018). While part of the CIA, consideration of effects to the Phillips Cultural Landscape is mandated by Section 106 of the National Historic Preservation Act (NHPA) and the four-step process outlined in federal regulations titled “Protection of Historic Properties” (36 CFR Part 800). Section 106 directs federal agencies to consider the effects or impacts of their undertakings on NRHP-eligible or listed cultural resources (i.e., historic properties) and take measures to avoid, minimize, or mitigate adverse effects. Throughout the Section 106 process, the lead federal agency must consult with the appropriate State Historic Preservation Officer, federally recognized tribes that have an interest in the undertaking, and any other party with a vested interest in the undertaking.

2.0 Methodology

2.1 Study Area

The FHWA guidebook presents various definitions of community, all of which were considered in determining the overall study area for the CCR, as well as the smaller divisions of the study area discussed in the report. The guidebook defines community as an area where behavior patterns of individuals or groups of individuals are common and where shared perceptions or attitudes create an identifiable area. Communities may be based on a common characteristic that is not spatial in nature, such as religion, income, ethnicity, etc. Community characterization study areas typically include communities within, and immediately adjacent to, project study areas, as well as where social effects may be felt. The boundaries of study areas may be delineated based on physical barriers, land use trends, political divisions, certain demographic characteristics, and/or resident perceptions.

The study area is defined as a 5.6-mile-long mainline corridor of SC 41 from US 17 in Mount Pleasant across the new Wando River Bridge to Clements Ferry Road in Berkeley County. The study area also includes US 17 from the intersection with Hamlin Road to the entrance to the Market at Oakland and an expanded study area around Laurel Hill County Park and the Phillips Community between Bessemer Road and Dunes West Boulevard. In developing the community characterization study area for the Project, the Project team identified neighborhoods and communities in areas adjacent to the SC 41 corridor, and for ease of data collection, used the US Census Bureau (Census Bureau) geographies, either census tracts (CTs) or smaller block groups, and the Traffic Analysis Zones (TAZ) that encompass those neighborhoods and communities to delineate the study area. TAZs are geographical units used for travel demand modeling. The Census Bureau geographies and TAZ boundaries also generally follow visible natural or man-made features such as streams, rivers, or major roadways. It should be noted that the Census Bureau geographies are not a perfect match to the TAZ boundaries, and both are larger than the extent of the communities discussed in this report.

The community characterization study area in this report is made up of five larger sub-areas, which are delineated similarly to the Census Bureau's county CT divisions. The area's history is discussed at the largest sub-area level and addresses either side of the Wando River in Charleston and Berkeley counties. The study area is further organized into 12 smaller, Project team-defined communities, which are based on similarities in land use and context, while still typically following Census Bureau geographies, TAZ boundaries, and visible features. The Charleston County portion of the study area, located to the south of the Wando River, includes four Census Bureau CTs encompassing nine Census Bureau block groups and 11 of the 12 identified communities, consisting of Brickyard/Colonnade, Cardinal Hill, Dunes West, Gregorie Ferry, Horlbeck Creek, Ivy Hall, Park West, Phillips Community, Planter's Pointe, Rivertowne, and Seven Mile. The Berkeley County portion of the study area, located to the north of the Wando River, includes two CTs encompassing three block groups and the remaining identified community, Cainhoy.

The study area is shown in Figure 3. The 12 communities within the study area are described in detail in later sections of this report and are depicted in Figure 4.

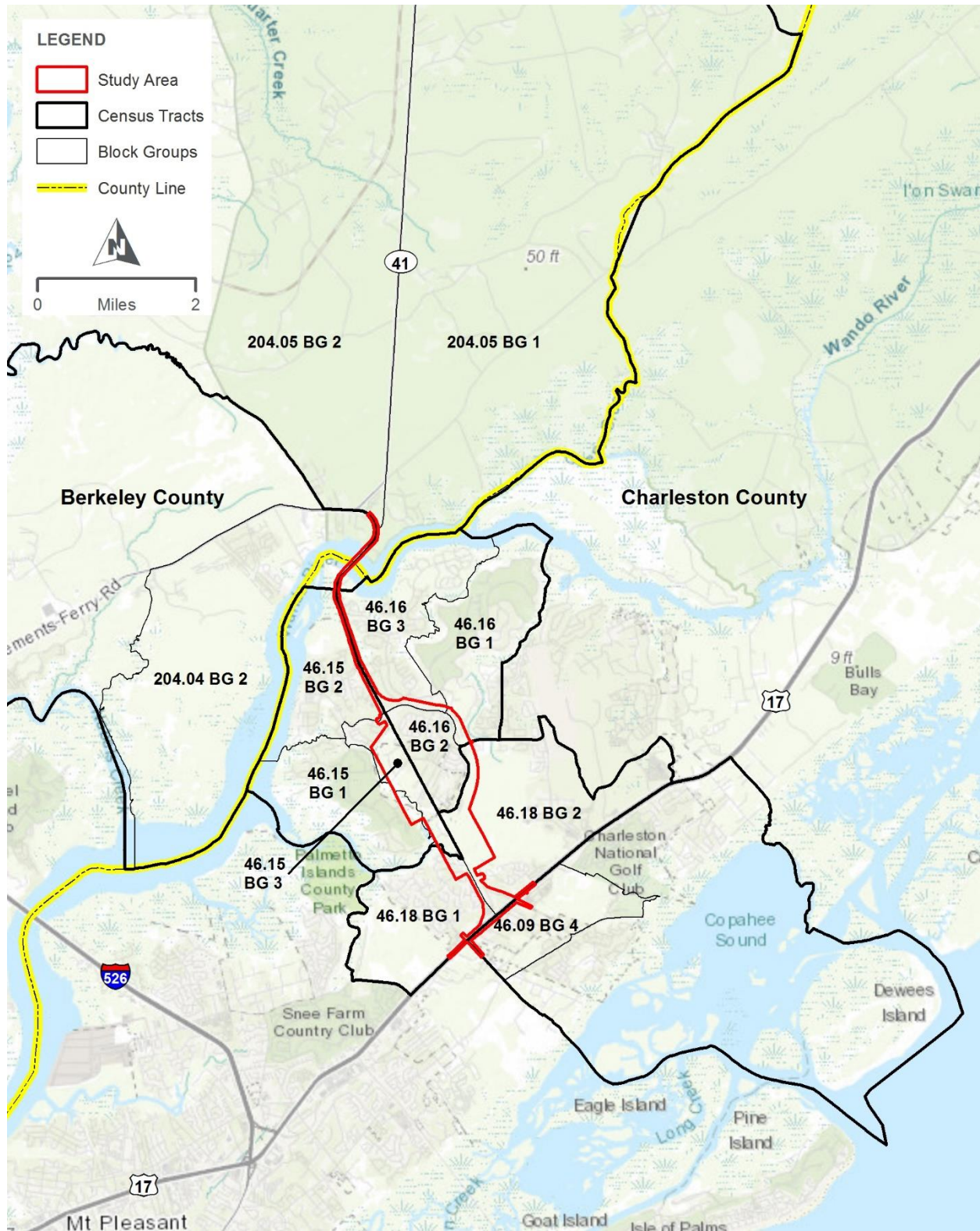


Figure 3. Study Area and Associated USCB Block Groups

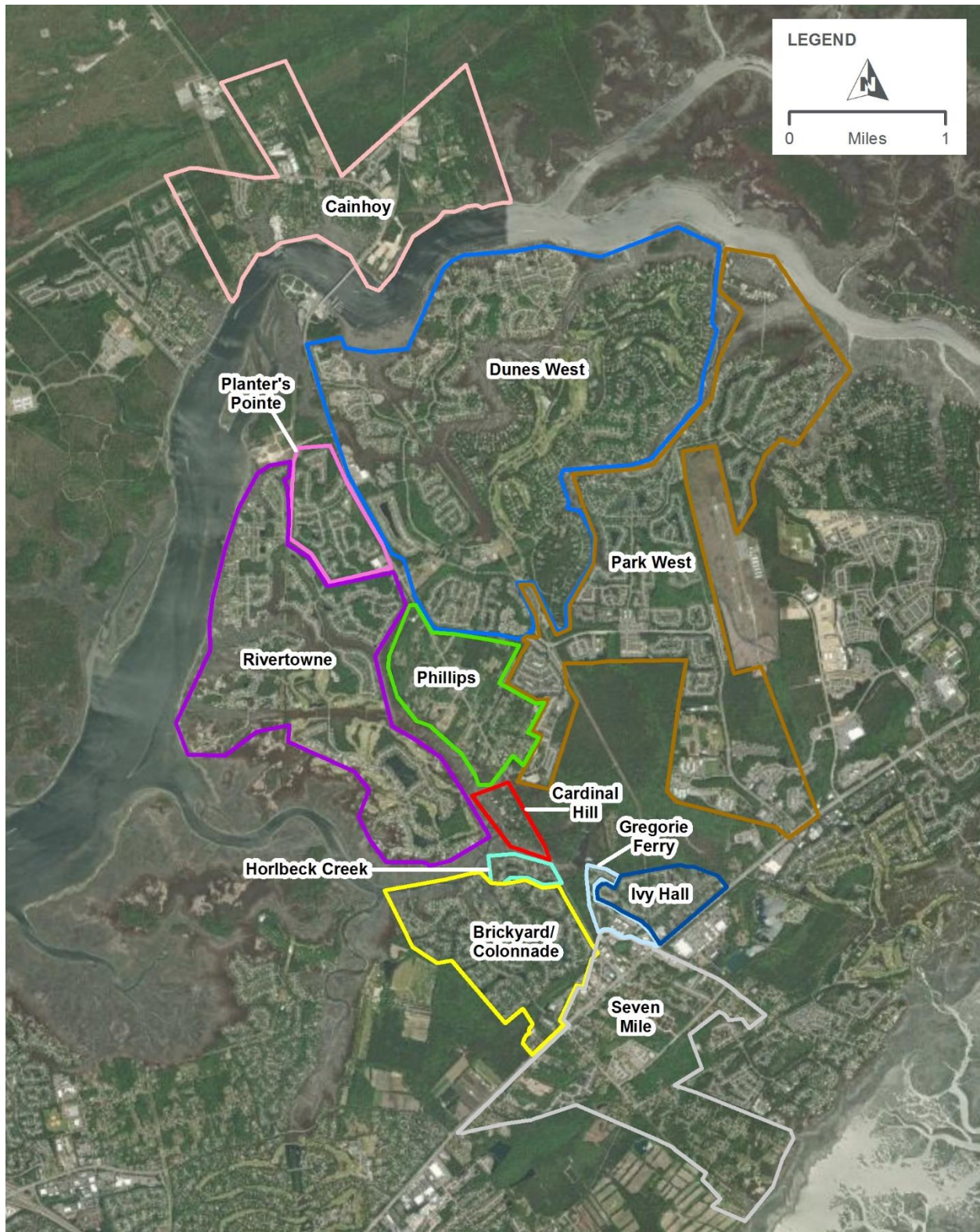


Figure 4. Communities

2.2 Data Sources

Data from the communities were used as the foundation for the existing conditions analysis in the CCR. Census Bureau CT and TAZ data were used in the evaluation of demographics, economics, and growth trends within the overall study area and each of the four CTs. Data from Census Bureau block groups, which are smaller than the CTs, were used to refine the analysis to a more detailed geographic level. For more specific details pertaining to the demographic, and economic, data used in the CCR associated with this CIA, see *Community Characterization: SC Highway 41 Corridor Improvements Project, Charleston and Berkeley Counties, South Carolina* (HDR 2020).

Data compiled for the CCR that inform this CIA were obtained from a number of sources, including:

- map data from Google (Google 2017);
- ESRI World Imagery (ESRI 2017);
- historical to current USGS 7.5 minute series topographic quadrangles;
- U.S. Census Bureau (USCB), 2020 Decennial Census (USCB 2020);
- USCB, 2016-2020 American Community Survey (ACS) 5-Year Estimates, referred to as “2020 ACS” (USCB 2022);
- BCDCOG Travel Demand Model for the SC Highway 41 Corridor Improvements Project (BCDCOG 2017, 2020);
- published books and articles obtained from regional libraries; and
- local plans and websites from associated counties and municipality.

Direct observations, meetings with study area residents and stakeholders held between Summer 2017 and Summer 2022, and coordination with relevant organizations all served as additional sources of information for the CCR and CIA.

2.3 Limited English Proficiency

Pursuant to Title VI of the Civil Rights Act of 1964 (42 USC § 2000d et seq.), U.S. Department of Justice (USDOJ) Guidance to Federal Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons [DOJ LEP Guidance; Federal Register 67(117):41455-41472, June 18, 2002], and EO 13166 [Federal Register 65(159):50121-50122, August 16, 2000], the LEP population was assessed for the study area. DOJ LEP Guidance advises recipients of DOJ funds to provide “written translations of vital documents for each eligible LEP language group that constitutes five percent or 1,000, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered” [Federal Register 67(117):41463-41464, June 18, 2002]. This is referred to herein as the DOJ LEP threshold. Eligible LEP language groups are those whose members self-report speaking English less than very well. The LEP population was calculated at the CT level and also considered at the block group level by adding all populations that self-reported speaking other languages and English less than very well. U.S. Department of Justice (DOJ) LEP guidance advises recipients of DOJ funds to provide “written translations of vital documents for each eligible LEP language group that constitutes five percent or 1,000, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered” [Federal Register 67(117):41463-41464, June 18, 2002].

2.4 Impact Assessment

The FHWA guidebook provides a broad framework for assessing the significance of specific community impacts and suggests that community analysts assess the following factors in relation to expected effects:

- Likelihood of impact
- Scale, severity, and extent of impact
- Duration of impact over time
- Reversibility of impact
- Direct and indirect impacts
- Cumulative and counterbalancing impacts

The guidebook additionally directs that community analysts use public engagement to help determine the scale, severity, and extent of the potential impacts. Where appropriate, analysts should also compare the potential impacts with existing impacts of the same variety in nearby or otherwise similar communities.

Based on these guidelines, in this report, the scale, severity, and extent of impacts were assessed by considering the following factors: (1) who and how many people would be affected; (2) how severe the impacts are, with considerations to proximity, existing buffers, current functions, and other aspects as relevant; (3) how widespread the impacts would be felt throughout the community; and (4) known perceptions of community members on the scale, severity, and extent of the impacts.

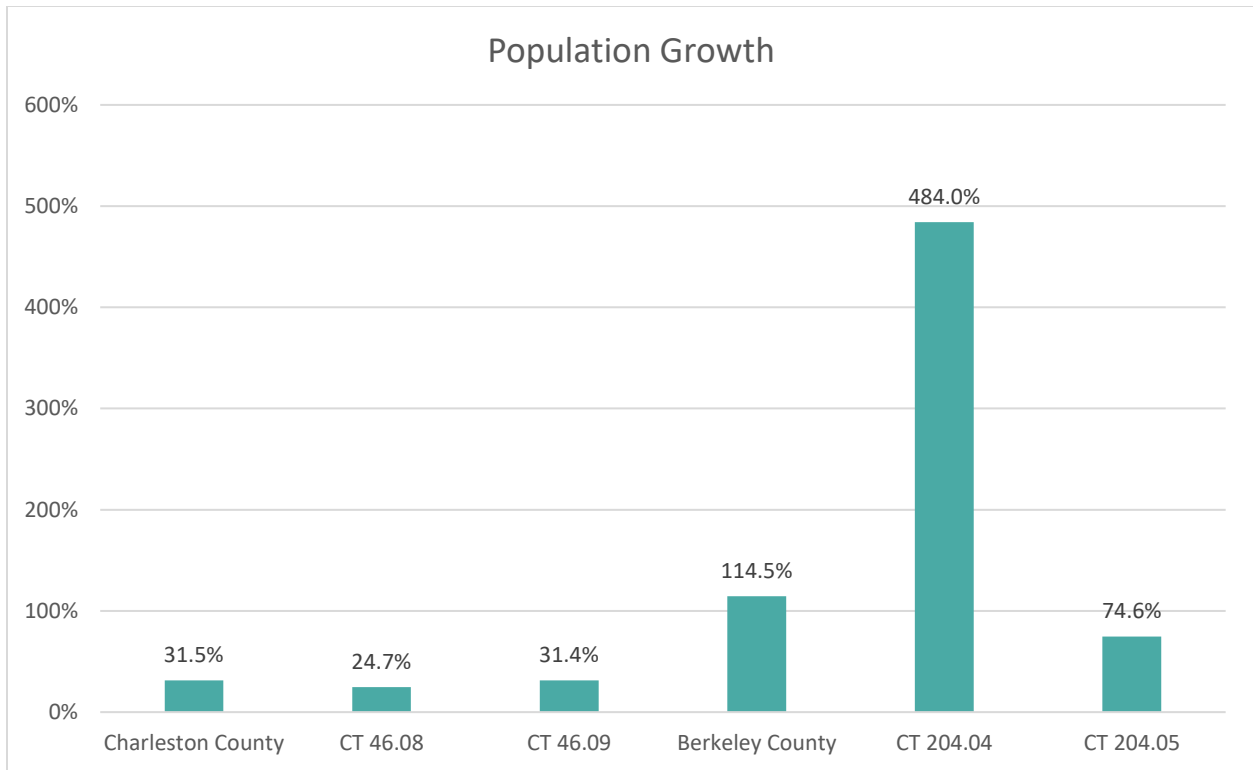
3.0 Existing Conditions

The SC 41 CCR, *Community Characterization: SC Highway 41 Corridor Improvements Project, Charleston and Berkeley Counties, South Carolina* (HDR 2020), presents in detail the existing historical, social, cultural, and economic conditions in and near the Project study area and serves as a baseline for this CIA. The CCR documents that three communities in the study area were settled by freed African Americans following the Civil War. These consist of the communities of Phillips and Seven Mile as well as portions of Cainhoy. The people of these and similar coastal communities of South Carolina are known as Gullah people (NPS 2005). Gullah people are descendants of enslaved Africans who were brought to North America to labor on Atlantic Coast plantations between the late seventeenth and early nineteenth centuries. Once on plantations, they developed a unique culture from a fusion of the many different cultural traditions they had practiced in Africa. Following the Civil War, many Gullah communities were created as an aspect of federal Reconstruction initiatives that focused on assisting freed African Americans in establishing themselves (Reed 2016). Many of the communities were formed when African Americans purchased lands from subdivided plantations. In the Mount Pleasant vicinity, an estimated 18 postbellum African American communities were established (Gibbs 2006).

Findings from the CCR are briefly summarized in the sections that follow.

3.1 Study Area Growth Trends

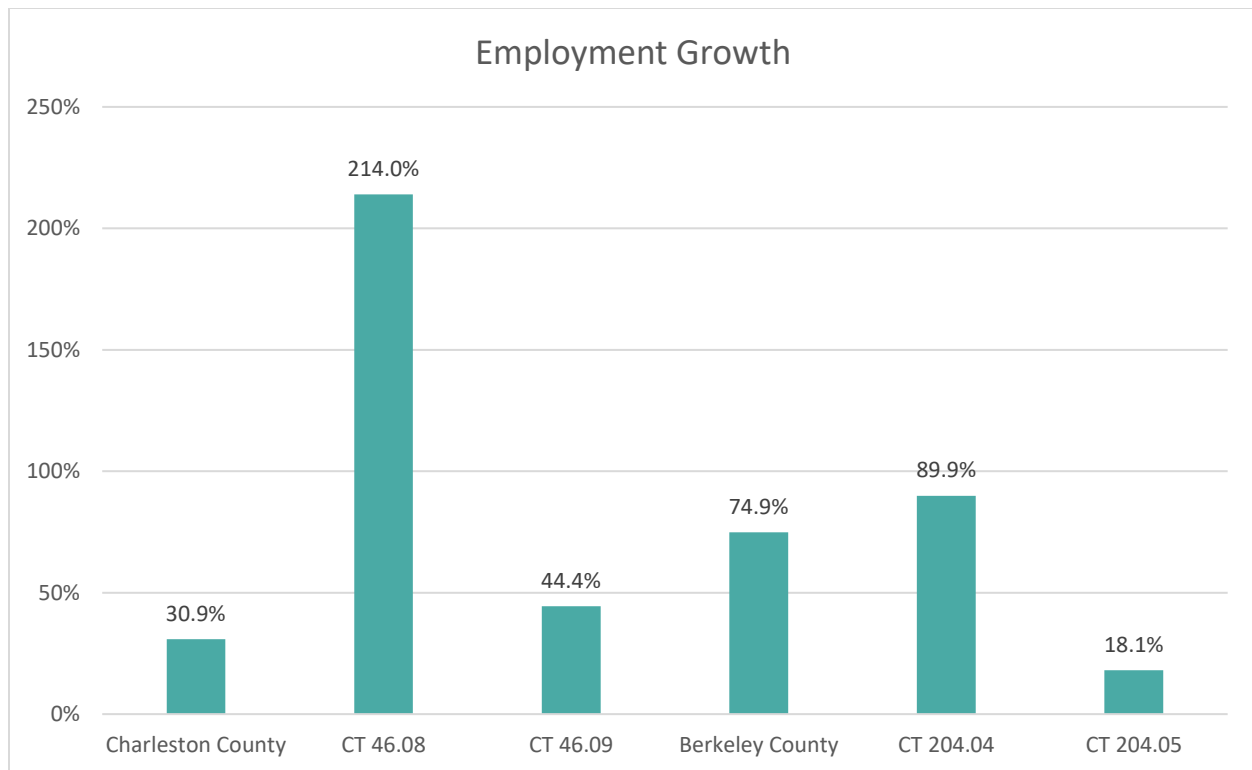
An evaluation of socioeconomic data reveals that population growth and employment growth are expected in all CTs within the study area between 2015 and 2040. The anticipated population growth ranges from 24.7 percent to 31.4 percent in the Charleston County CTs, while the anticipated population growth in the Berkeley County CTs ranges from 74.6 percent to 484.4 percent. While anticipated population growth is high in all portions of the study area, the greatest anticipated population increase is anticipated in the two Berkeley County CTs, which includes the Cainhoy community (Graph 1).



Graph 1. Population Growth between 2015 and 2040

Source: Population growth data prepared for the BCDCOG Travel Demand Model for the SC Highway 41 Corridor Improvements Project (2017, 2020)

Similar to the anticipated increase in population throughout the study area, considerable employment growth is anticipated, as well. The anticipated employment growth in the Charleston County CTs ranges from 44.4 percent to 214 percent, while the anticipated employment growth in the Berkeley County CTs ranges from 18.1 percent to 89.9 percent. While anticipated employment growth is high in all portions of the study area, the greatest employment increases are anticipated in Charleston County CT 46.08, which includes 11 of the 12 communities in the study area, and in the Berkeley County CT 204.04, which includes the Cainhoy community (Graph 2).



Graph 2. Employment Growth between 2015 and 2040

Source: Employment growth data prepared for the BCDCOG Travel Demand Model for the SC Highway 41 Corridor Improvements Project (2017, 2020)

This population and/or employment growth is expected to occur in key locations, as identified in local plans. The most extensive growth is projected to occur through 2040 in the Berkeley County portion of the study area, to the north of the Wando River in and around the Cainhoy community. In general, compared to the Charleston County portion of the study area, this area contains much more open and undeveloped land for new residential and commercial developments. Proposed developments adjacent to the Project study area in Berkeley County include Wando Village, a mixed-use development combining retail/commercial uses with 416 units of various residential types; and Rivers Bend, a retail center including a gas station and other retail spaces such as a hardware store, bank, fast-food restaurant, and garden center. The proposed Cainhoy Plantation development is a 9,000-acre master-planned, mixed-use development along Clements Ferry Road in Berkeley County to the northwest of the Project study area. Two schools associated with this development have already been constructed, and approximately 9,000 new homes are expected to be built. The proposed development, which has been approved by the City of Charleston for areas to the north and west of the Cainhoy community, has produced anticipated increases in population and employment in the Berkeley County portion of the study area.

The Charleston County portion of the study area is comparatively densely developed; development is largely residential. There are several existing and approved commercial developments in the study area, including a grocery store complex that is completed along SC 41 in the Dunes West community. Most of the Town of Mount Pleasant's growth in recent years has been outwards or northwards along US 17 and SC 41. For a number of reasons, infill and redevelopment have become more compelling as a policy issue for the Town. The Town's comprehensive plan recommends that infill and redevelopment should

occur in such a way as to preserve the character of nearby residential areas, with buffers and transition zones where appropriate.

3.2 Limited English Proficiency

According to the 2020 ACS data, 2.7 percent of South Carolina households are LEP. Similarly, 3.0 percent of Charleston County households are LEP. Zero percent of Charleston County CTs 46.15 and 46.18 are LEP and 2.0 percent of CT 46.09 and 0.8 percent of CT 46.16 are LEP. The EPA's Environmental Justice Screening and Mapping Tool was checked, and none of the Charleston County CTs within the Project study area are linguistically isolated. All four Charleston CTs had a lower percentage of LEP than Charleston County. According to the 2020 ACS data, 2.9 percent of Berkeley County households are LEP. Zero percent of Berkeley County CT 204.05 is LEP, and 0.2 percent of CT 204.04 is LEP. Both of these percentages are below the 2.9 LEP percentage for Berkeley County households. There were no requests for translation services at any of the Project public meetings held to date. When assessed at the Census Bureau block group level, no LEP population met the DOJ LEP thresholds of constituting five percent or 1,000 individuals.



Charleston County
Transportation Development

4.0 Environmental Consequences

The following sections address potential effects of the alternatives on the communities within the study area. While no residential or business relocations are expected with implementation of the Project, portions of numerous parcels would be impacted by the additional right-of-way (ROW) associated with the Project. Table 2 compares the impacted acreages in each community in relation to each build alternative.

Due to the importance of residential aspects of the study area, Table 2 also presents the quantity of impacted individual residential parcels. Such parcels are either (1) defined as “Residential” in the Charleston County parcel data, excluding large, undeveloped residential development parcels and POA-owned parcels but including multifamily parcels with existing complexes, or (2) defined as “Commercial” in the Charleston County parcel data but function as residential properties. In some but not all cases, the latter property type have small commercial enterprises associated with them, such as sweetgrass basket stands or firewood sales. Such combined residential-commercial properties are often associated with Gullah African-American communities. Most of the quantified residential parcels function as single-family residential parcels, while some function as small vacant lots that could serve as residential parcels. Impacts to individual parcels associated with multifamily complexes are counted as one parcel, per the Charleston County parcel data indicating these as the same overall acreage. Table additionally presents study area averages, and the numbers emboldened and in red reflect those that are above study area averages.

To assess impacts to communities in the study area, various community-related resources were evaluated for effects resulting from the alternatives. Effects to the aesthetic character, community services, and economics as well as effects from Project construction were assessed for the entire study area. These effects from the alternatives are expected to be similar in all communities in the study area. If specific, unique impacts to these resources would occur within a community, generally, they are discussed in the individual community sections (Section 4.2 to Section 4.13). Additional effects – those that are expected to differ across the communities – are also considered in relation to each community in the individual community sections. Where it would be most effective to understand how impacts to individual communities differ across the study area, these are discussed in the study area section.

Table 2. Impacted Acreages and Individual Residential Parcels by Community and Build Alternative in Comparison with Study Area Averages

| Community | Alt 1 | | | Alt 7A | | | Compromise Alt | | |
|------------------------------|---------------|------------------------------|--------------------------------|---------------|------------------------------|--------------------------------|----------------|------------------------------|--------------------------------|
| | Overall Acres | Individual Residential Acres | Individual Residential Parcels | Overall Acres | Individual Residential Acres | Individual Residential Parcels | Overall Acres | Individual Residential Acres | Individual Residential Parcels |
| Study Area Averages | 2.0 | 0.4 | 7.5 | 2.8 | 0.1 | 2.4 | 2.5 | 0.2 | 2.1 |
| Brickyard / Colonnade | 1.2 | 0.0 | 0 | 1.2 | 0.0 | 0 | 1.0 | 0.0 | 0 |
| Cardinal Hill | 1.5 | 0.0 | 0 | 0.4 | 0.0 | 0 | 0.4 | 0.0 | 0 |
| Dunes West | 8.2 | 0.0 | 0 | 12.1 | 0.2 | 1 | 9.8 | 0.0 | 0 |
| Gregorie Ferry | 1.0 | 0.0 | 0 | 1.0 | 0.0 | 0 | 1.7 | 0.3 | 1 |
| Horlbeck Creek | 0.1 | 0.0 | 0 | 0.1 | 0.0 | 0 | 0.1 | 0.0 | 0 |
| Ivy Hall | 0.2 | 0.0 | 0 | 0.2 | 0.0 | 0 | <0.1 | 0.0 | 0 |
| Park West | 0.0 | 0.0 | 0 | 11.3 | <0.1 | 7 | 6.7 | 0.2 | 2 |
| Phillips Community | 5.2 | 4.1 | 70 | 0.4 | 0.2 | 1 | 1.0 | 0.2 | 5 |
| Planter's Pointe | 1.6 | 0.0 | 0 | 1.6 | 0.0 | 0 | 1.1 | 0.0 | 0 |
| Rivertowne | 1.0 | 0.0 | 0 | 1.1 | 0.0 | 0 | 1.0 | 0.2 | 1 |
| Seven Mile | 3.8 | 0.6 | 20 | 3.8 | 0.6 | 20 | 4.4 | 1.0 | 14 |
| Cainhoy | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 |

4.1 Study Area

The No-Build Alternative consists of making no improvements to SC 41. While no immediate new effects are expected in the study area from the No-Build Alternative, traffic volumes on SC 41 would continue to increase as a result of regional population growth. Over time, these changes are projected to result in substantial congestion on SC 41 and US 17 in the study area, which may lead to direct and indirect effects on residential aspects in the study area, such as livability and other social, cultural, and/or psychological effects, and may indirectly lower residential property values. Economic and business conditions may alter and become less favorable, which in turn could negatively impact the Charleston County tax base. Public health and safety may be at increased risk as emergency vehicles may not be able to navigate the study area as rapidly or safely, and emergency facilities may be less accessible.

The three build alternatives (Alternative 1, Alternative 7A, and the Compromise Alternative) would have similar impacts on all communities in relation to economic and business conditions, land use, mobility and access, public health and safety, sensory aspects, Project construction, as well as indirect, recurring, and cumulative effects, as discussed in the following sections. Direct effects to specific parcels within the study area by build alternative are presented in Appendix A. Figure 6 shows the locations of major community resources in the study area.

A community impact assessment has been conducted and delves in greater detail into the differences between each build alternative and the benefits and disadvantages of each. A summary of the impacts anticipated to each community for Alternatives 1, 7A, and the Compromise Alternative are discussed below.

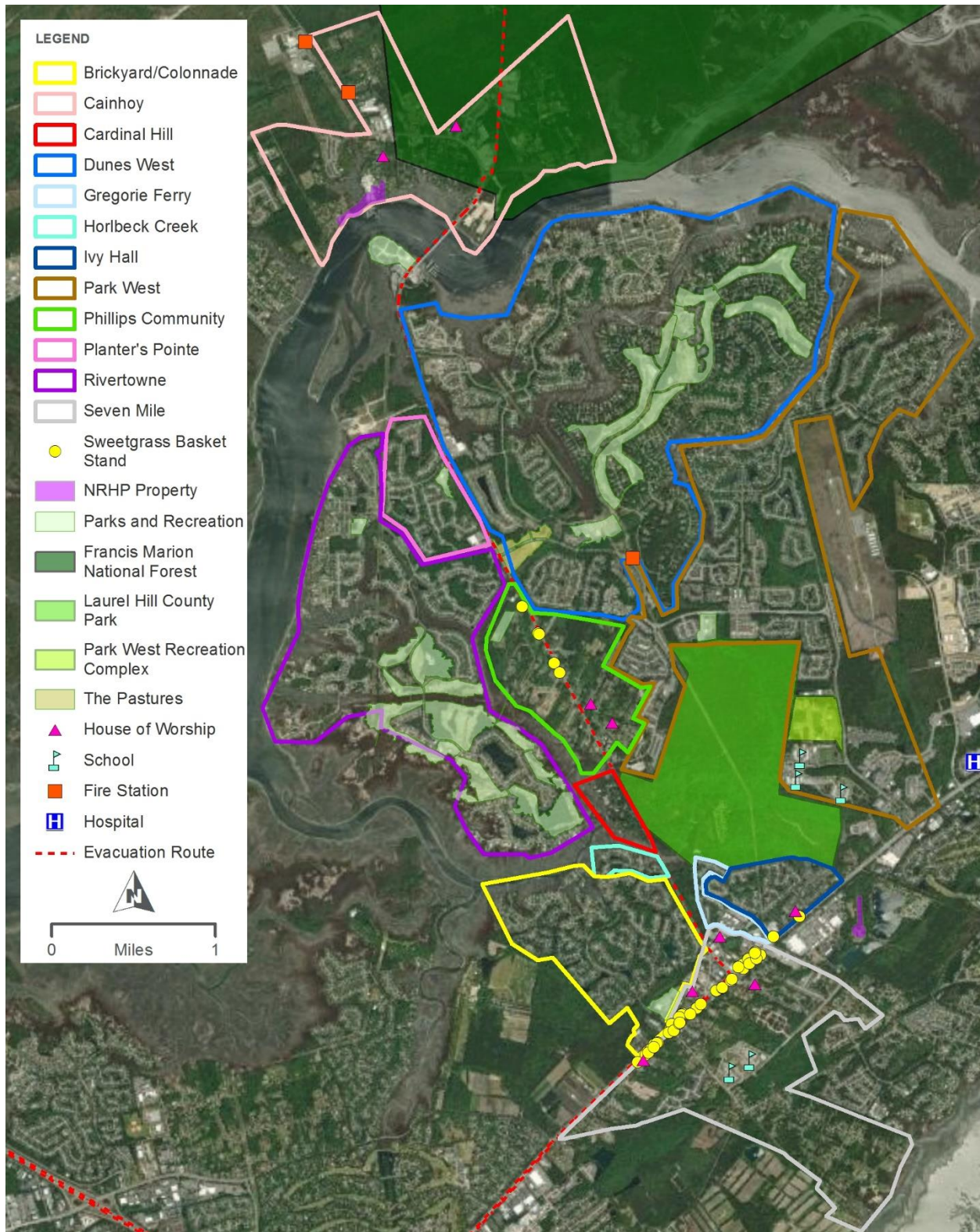


Figure 6. Major Community Resources

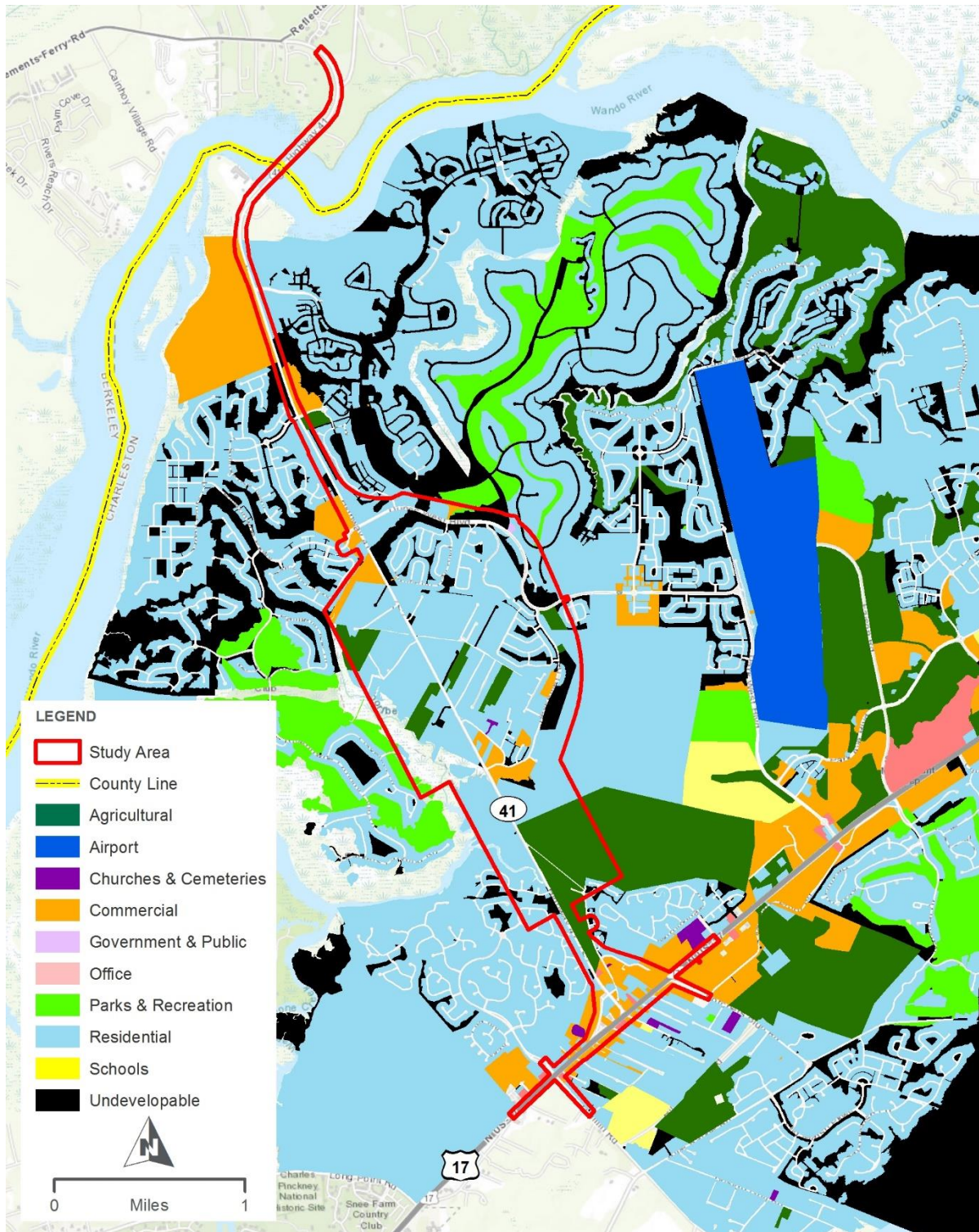


Figure 7. Charleston County Land Use

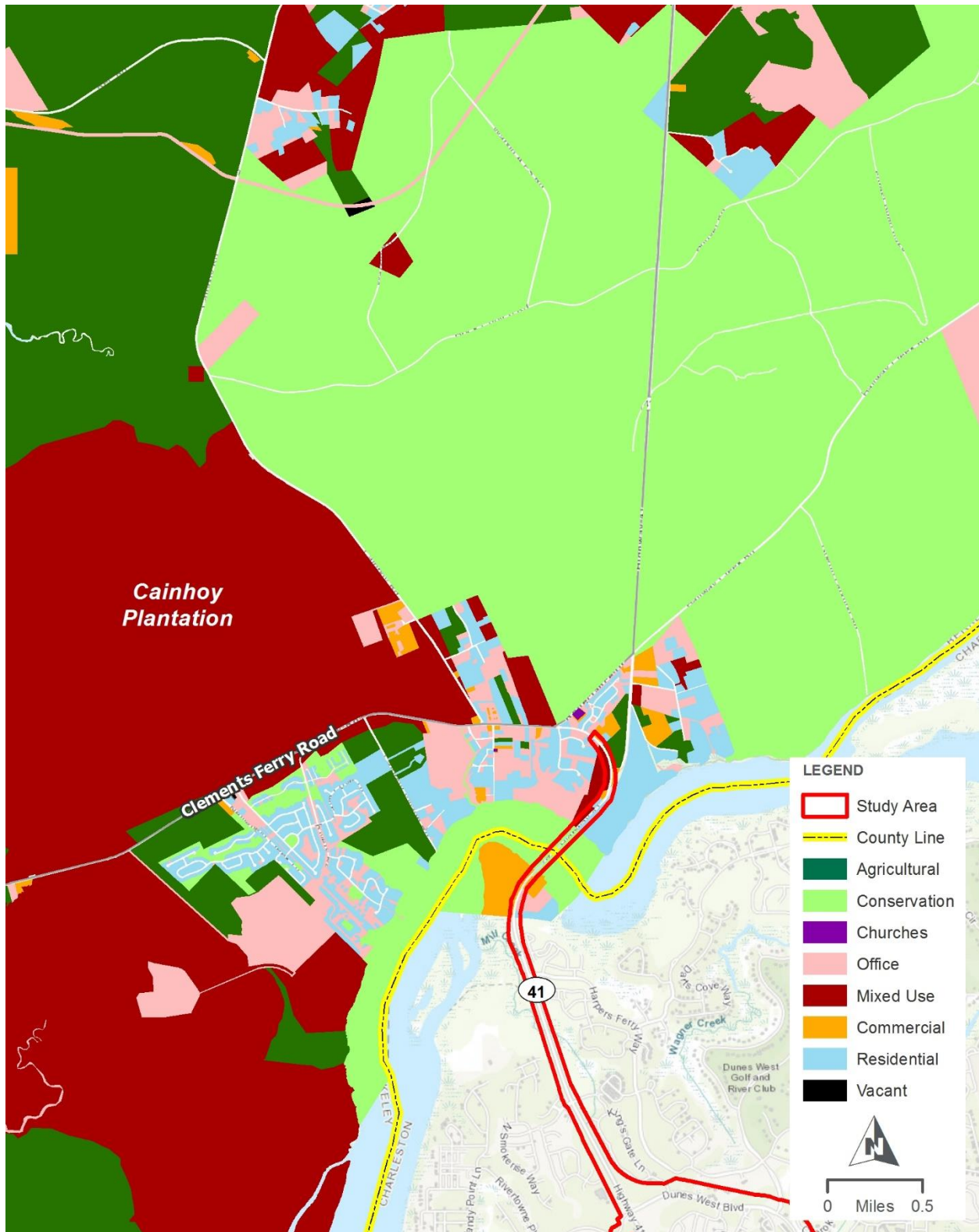


Figure 8. Berkeley County Land Use

4.1.1 Economic and Business Conditions

Proposed Project changes would result in increased roadway capacity and reduced congestion and may improve access to commercial services along its corridor. These effects have the potential to increase patronage of the businesses along the corridor. No business relocations are expected with implementation of the Project.

Overall, construction of each of the build alternatives would potentially result in, minor, positive impacts to economic and business conditions in the study area, with concentrated effects in areas adjacent to the selected build alternative.

4.1.2 Land Use

The majority of the study area is single-family residential, with several planned residential neighborhoods, some multifamily residential complexes, and some long-term rural residential land uses (Figure and Figure). Some commercial, office, religious, recreational, and undeveloped land uses also exist in the study area. Most of the commercial land uses concentrate along US 17, southern portions of SC 41, and at the intersection of Clements Ferry Road and Cainhoy Road. While most of the recreational land uses in the study area are private, public recreational land uses consist of Laurel Hill County Park. Public resources outside of the study area but within community boundaries consist of Park West Recreation Complex in Park West and Francis Marion National Forest in Cainhoy (Figure 6).

Within the study area, land use impacts are expected to occur in different locations depending on the build alternative; however, these would generally be consistent with local plans and initiatives discussed in the CCR. Alternative 1 may alter land uses along existing SC 41. Along this corridor, more planned residential and, subsequently, neighborhood scale commercial uses could be stimulated with completion of the Project. However, this alternative would also impact historically relevant properties where multiple generations of a single family reside and occasionally sell handmade wares on the roadside. Alternative 1 would render this current two-lane road into a busy street. Alternative 7A may alter land uses along northern and southern portions of existing SC 41 as well as along existing Dunes West Boulevard. To the east of Bessemer Road and the location where Dunes West Boulevard turns to Park West Boulevard, within Dunes West and Park West, land uses would change from undeveloped to transportation uses, and commercial land uses may also be stimulated in this location with Project completion. Along and near US 17, land uses would change from commercial to transportation uses in some places, and more commercial land uses could be spurred with Project completion. The Compromise Alternative impacts the same general area as Alternative 1 and Alternative 7A but is expected to mitigate the impacts to the community by restricting the scale of development for each of these builds. For instance, rather than expanding SC 41 into a five-lane road, the expansion will result in a three-lane road. The area between Dunes West Boulevard and SC 41 will remain unchanged from its present condition. Refer to the Environmental Report for the Project for additional information on Project effects on land use.

4.1.3 Mobility and Access

Within the study area, general mobility, and access to individual properties, and residential developments would be improved with implementation of each build alternative, since the build alternatives would improve capacity and reduce traffic delays across the study area. In addition, multimodal mobility would be improved by the addition of pedestrian and bicycle pathways, which would connect with existing pathways at either extent of the study area. Generally, Alternative 1 would positively affect mobility and access along existing SC 41, while Alternative 7A would positively affect mobility and access along existing SC 41 as well as along existing Dunes West Boulevard, Park West Boulevard, and Bessemer Road. Both alternatives would positively affect mobility and access where Project changes are proposed

on and near US 17. Refer to the Environmental Report for the Project for additional information on Project effects on projected changes to traffic flow. The Compromise Alternative would have similar impacts as Alternative 1 and Alternative 7A to mobility and access. These route changes would generally improve vehicle capacity and reduce traffic as well as accelerate disaster evacuation, thus having a positive impact on the surrounding community.

4.1.4 Public Health and Safety

Because impacts to public health and safety within any of the communities could affect the study area as a whole, public health and safety effects are assessed in this section and not within the individual community sections below. Impacts to private recreational facilities as well as unique effects to public health and safety are presented in the individual community sections.

Three public recreational resources exist in the study area: Francis Marion National Forest, Laurel Hill County Park, and Park West Recreation Complex (Figure 6). Francis Marion National Forest and Laurel Hill County Park are primarily undeveloped, forested land with some trails and/or roads. Laurel Hill County Park additionally features a historic oak allée associated with the former Laurel Hill Plantation, large open meadows, and a small lake (Charleston County Park & Recreation Commission 2017). Park West Recreation Complex, accessed off Park West Boulevard southeast of the



Laurel Hill County Park Trail

proposed build alternatives, is a Town of Mount Pleasant park with several sports fields and courts, an activity building and gym, a pool, a lake, and many walking trails (Town of Mount Pleasant 2019). Park West Recreation Complex provides the main access to Laurel Hill County Park, via a trailhead (Charleston County Park & Recreation Commission 2017). No impacts would occur to Frances Marion National Forest or Park West Recreation Complex. Each of the build alternatives would impact extreme western portions of the approximate 745-acre Laurel Hill County Park, to the east of Bessemer Road and along SC 41, where undeveloped forested land dominates and no recreational resources exist. Alternative 1 would impact 0.7 acres, while Alternative 7A would affect 19.4 acres. Although the impacted acreage is higher for Alternative 7A, none of the build alternatives would impact developed areas of the park and, therefore, would not negatively impact short-term public health. Considering the myriad ways that forests benefit human beings in the long term, however, suggests that the environmental impacts of the Alternative 7A route should also be considered. Both build alternatives would add bicycle and pedestrian pathways, which would offer additional public recreational opportunities and, thus, benefit public health in the study area.

Because the Compromise Alternative combines both Alternatives 1 and 7A to minimize the impact of each route individually, approximately 16.2 acres of Laurel Hill County Park will be designated for the

development of the Project. As aforementioned, this build would add recreational resources to the area benefiting public health and safety in this regard.

Each build alternative would affect a small portion of one Town of Mount Pleasant-owned parcel located within Gregorie Ferry and one public utility parcel owned by South Carolina Electric and Gas. The Project is not expected to affect the function of these public properties and, therefore, would not have an impact on public health or safety in relation to this resource.

Alternative 1 would affect a small portion of three Town of Mount Pleasant-owned parcels, two located along existing SC 41 within the Phillips Community and one, adjacent to Cardinal Hill. The Project is not expected to affect the function of these public properties and, therefore, would not have an impact on public health in relation to these resources.

Alternative 7A and the Compromise Alternative would affect portions of one parcel in Dunes West owned by the Town of Mount Pleasant. This parcel, located east of the intersection of Wando Plantation Way and Park West Boulevard, currently serves as Station 5 of the Mount Pleasant Fire Department. The impacted portion of this parcel is a small portion of the driveways adjacent to Park West Boulevard. This change associated with Alternative 7A and the Compromise Alternative is not expected to affect the operation of the fire department and would generally improve access to and from this property; thus, the Project would not result in an adverse impact to public health and safety in relation to this resource.

The Project would involve construction within the regulated 100-year floodplain of the Wando River. The majority of floodplains within the study area are designated Zone AE (100-year floodplain where detailed studies have previously determined base flood elevations) with some areas designated Zone X (500-year floodplain and outside of 500-year floodplain; see the environmental report for the Project). Because base flow elevations have been established for most floodplains in the study area, FEMA requirements limit encroachment in the 100-year floodplain to activities that do not increase the base elevation by more than one-tenth foot, also called “no-rise” (FEMA 2007). The Project would be designed in an effort to meet “no-rise” requirements and, therefore, would not have an impact on public health and safety in relation to flooding and drainage.

Reoccurring drainage and flooding problems have been documented by Charleston County within the Phillips Community (Thomas & Hutton 2016). The main drainage system in the approximately 250-acre drainage basin east of SC 41 consists of linear, open ditches and road and driveway culverts. Other minor drainage infrastructure in the basin generally consists of roadside swales and driveway pipes. Out-of-bank flooding and roadway overtopping has been documented along the main drainage system in the past. The widening of SC 41 from two lanes to five lanes and the use of closed drainage systems would potentially result in increased flow rates at outfall locations. In the design process, each outfall location would be analyzed to determine if measures would be required to mitigate the impacts related to the increase in impervious surfaces related to the Project.

The Project would improve mobility and access in the study area and, thus, would positively affect public health and safety in relation to the disaster evacuation route located in the study area, extending along existing SC 41 and US 17, and would be relocated to portions of the selected build alternative, as appropriate. Overall, public health and safety across the study area may be improved due to emergency vehicles being able to navigate the study area more effectively and efficiently, and emergency facilities and recreational resources would be more accessible due to improved roadway capacity and reduced traffic

delays. The Project has the potential to generally improve public health in the study area with the addition of bicycle and pedestrian pathways along the selected corridor.

4.1.5 Sensory Aspects

Overall, the Project is not expected to introduce substantially different visual elements, as the Project is primarily proposed within an existing transportation corridor in a predominantly developed area. Where new visual effects would occur at individual locations in the study area, these are addressed in the associated community section below.

Some sensory effects, such as increased noise, vibration, dust, and vehicular smells, could occur in the immediate corridor of the proposed widened and/or realigned SC 41. However, in Park West, the Phillips Community, and Seven Mile these effects would be more impactful due to the relatively short distance between build alignments and existing buildings and the associated lack of wide vegetative buffers between the build alignments and developed portions of these communities.

Increased sensory effects would occur in limited locations in Dunes West and Park West with implementation of Alternative 7A, which would result in a new five-lane roadway through the western portions of these communities that would sustain an increased volume of traffic compared with current conditions. In this portion of Dunes West, a community event area known as “the pastures,” discussed in more detail in Section 4.4 and, in Park West, several townhouse complexes are near the proposed new roadway associated with Alternative 7A. These permanent effects associated with Alternative 7A are expected to be minor to moderate, depending on the distance of developed portions of parcels to proposed changes. These impacts would be similar with the implementation of the Compromise Alternative because the changes associated with this Project are the same in for Alternative 7A and the Compromise Alternative in Dunes West and Park West.

Increased sensory effects would occur in the Phillips Community with implementation of Alternative 1, which would widen the existing two-lane roadway to a five-lane roadway through the community that would sustain an increased volume of traffic compared with current conditions. These permanent impacts are expected to affect numerous residential properties through the central portion of the Phillips Community. Due to the extent of these effects across Phillips, impacts from Alternative 1 are expected to be moderate. While Alternative 7A and the Compromise Alternative would widen sections of SC 41 to three lanes, Alternative 7A and the Compromise Alternative also provide a bypass of the Phillips Community to the east and, thus, would result in reduced traffic volume through Phillips. Therefore, neither of these alternatives are expected to result in substantial sensory impacts in the Phillips Community.

In Seven Mile, all build alternatives would widen US 17 from a six- to seven-lane roadway with occasional turn lanes, to an eight- to ten-lane roadway with occasional turn lanes along the northern boundary of the community. The expanded roadway would sustain an increased volume of traffic compared with current conditions. Due to the present existence of a large roadway through the community, these permanent changes along SC 41 and US 17 are expected to be minor to moderate, depending on the distance of developed portions of parcels to proposed changes. The introduction of an expanded roadway following the existing Hamlin Road alignment would result in increased sensory effects in this portion of Seven Mile. This may introduce increased traffic volume through this portion of the community, and permanent impacts in this location are expected to be moderate. Overall, these permanent effects associated with each of the build alternatives are expected to be minor, as they would impact limited portions of the community.

4.1.6 Temporary Impacts

Traffic would be temporarily affected during construction of the Project. Short-term construction impacts could include increases in dust, noise, and vibration; traffic disruption, congestion, and diversion; as well as limited access to individual properties. Motorists, pedestrians, and bicyclists would be temporarily affected during construction, as traffic detours and some temporary road closures would be required and are expected to change frequently throughout construction. Detours and road closures could temporarily increase commute times, fuel use, and air pollutant emissions. Construction could also temporarily increase response times for emergency service vehicles. Access to individual properties could also be temporarily disrupted, potentially resulting in the loss of revenue for affected businesses. The impacts to Seven-Mile would be the same for all three of the proposed alternatives. Effects would be greater in the Phillips Community with implementation of Alternative 1 and in Dunes West and Park West with implementation of Alternative 7A. Because the Compromise Alternative merges aspects of both of these projects, each of the communities would experience some temporary impacts, however, they would be minimal in the Phillips and Seven Mile communities.

To minimize these impacts, the construction contractor would develop a maintenance-of-traffic plan. A requirement of this plan would be that access to individual properties be maintained to the extent practicable and that existing roads be kept open to traffic unless alternate routes are provided. During construction, Charleston County would coordinate with local municipalities and/or property owners' associations to post information on temporary closures and detours.

The presence of large construction equipment in the study area could be perceived as visually disruptive or incongruent and could cause temporary effects to the character of the study area and individual communities. Construction impacts to communities, neighborhoods, businesses, and the natural environment would be minimized where possible. Community outreach activities to educate the public on construction activities would occur during pre-construction and construction.

4.1.7 Recurring and Cumulative Effects

Cumulative effects could occur in some portions of the study area in relation to the Project. These would concentrate in two of the Gullah African-American communities in the corridor, the Phillips Community and Seven Mile, in relation to compounding effects from private residential developments and the 2013 US 17 widening project, which resulted in the relocation of many sweetgrass basket stands that were present in the US 17 corridor when existing conditions information was compiled. These potential cumulative effects are discussed in Section 4.1.6, Section 4.9, and Section 4.12. No additional cumulative effects are anticipated in relation to the Project.

4.2 Brickyard/Colonnade

Brickyard Plantation and The Colonnade, hereafter Brickyard/Colonnade, are adjacent, developer-designed neighborhoods located in the southern portion of the study area, to the west of SC 41 and north of US 17 (Figure). These neighborhoods, together totaling 537 acres but not connected via internal roadway, can be accessed via Brickyard Parkway from US 17 and via Colonnade Drive from SC 41. The neighborhoods are made up of suburban single-family homes. There are sub-areas within the neighborhoods, each with its own price range and style of living. Private recreational facilities include a fitness center, tennis courts, a clubhouse, basketball court and access to Horlbeck Creek. There also are private walking/jogging trails and two swimming pools. Substantial forested buffers are present adjacent to residential portions of these communities, along existing SC 41 and north of commercial properties along US 17, also considered part of Brickyard/Colonnade.

Alternatives 1 and 7A would change the existing two-lane SC 41 in the vicinity of Brickyard/Colonnade, surrounding the entrance to The Colonnade, to a five-lane roadway with a center raised island or two-way left-turn lane. Either of these alternatives would also result in widening of portions of US 17 and Brickyard Parkway surrounding the entrance to Brickyard Plantation to facilitate turning movements to and from US 17. These changes associated with the Project would require a total of approximately 1.2 acres from parcels associated with Brickyard/Colonnade. This would result in more expansive roadways closer to these neighborhoods than the existing roadways. The Compromise Alternative would change SC 41 into a three-lane roadway. Like Alternative 1 and 7A, the Compromise Alternative would require portions of US 17 to be widened to facilitate turning lanes requiring approximately 1.0 acres of Brickyard/Colonnade parcel land.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Brickyard/Colonnade would experience specific impacts to community resources. These impacts would be permanent and minor, as discussed in the following sections. Appendix A presents acreage impacts to individual parcels by build alternative.

4.2.1 Community Resources

Alternatives 1 and 7A would affect small portions of 10 POA-owned parcels or parcels indicated as undevelopable in the Charleston County parcel data, together totaling in their entirety 27.2 acres. These parcels currently function as relatively wide vegetative buffers between residential portions of the community and SC 41 or are associated with the entrance to the Brickyard Plantation community from US 17. Affected portions of these parcels total 1.2 acres, and individual parcels are affected by less than 0.3 acre. The Compromise Alternative would affect small portions of eight POA-owned parcels or parcels indicated as undevelopable in the Charleston County parcel data, together totaling in their entirety 59.7 acres. Affected portions of these parcels total 1.0 acres, and individual parcels are affected by an average of 0.1 acre. Impacts to these parcels associated with the Project are expected to be permanent and minor due to the maintenance of the majority of these parcels, which would allow their continued use as forested buffers.



Figure9. Brickyard/Colonnade Community Resources and the Build Alternatives

4.3 Cardinal Hill

Cardinal Hill is an approximate 66-acre developer-designed, gated neighborhood located in the southern portion of the study area, to the west of SC 41 (Figure). The neighborhood can be accessed from SC 41 via Cardinal Hill Drive. The neighborhood is made up of large single-family homes on a densely wooded property bound to the east by SC 41 and to the west by Horlbeck Creek and its adjacent marshes. A substantial forested buffer is present along the east side of the community, adjacent to existing SC 41.

Alternatives 1 and 7A would widen the existing two-lane SC 41 in the vicinity of Cardinal Hill to a five-lane roadway with a center raised island or two-way left-turn lane. Alternative 1 would require a total of approximately 1.5 acre from parcels, all located on the west side of SC 41, adjacent to Cardinal Hill. These changes would result in a more expansive roadway closer to the neighborhood than the existing roadway. Alternative 7A would require a total of approximately 0.4 acre from parcels alongside Cardinal Hill. Additionally, Alternative 7A would route the proposed SC 41 alignment farther from the community than existing SC 41. The Compromise Alternative would alter SC 41 into a three-lane roadway and would require approximately 0.4 acre from parcels. While of the Project alternatives would result in the loss of some acreage, this change associated with Alternative 7A and the Compromise Alternative would reduce traffic flow near Cardinal Hill.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Cardinal Hill would experience specific impacts to community resources. These impacts would be minor and permanent, as discussed in the following section. Appendix A presents acreage impacts to individual parcels by build alternative.

4.3.1 Community Resources

Alternative 1 would affect small portions of four undevelopable, POA-owned parcels and one large undeveloped residential parcel, together totaling in their entirety approximately 28.7 acres, while Alternative 7A would affect small portions of two of these parcels, consisting of one of the undevelopable, POA-owned parcels and the one large undeveloped residential parcel, together totaling in their entirety approximately 25.1 acres. Affected portions of the parcels as impacted by Alternative 1 total approximately 1.5 acre, while affected portions of the parcels as impacted by Alternative 7A or the Compromise Alternative total approximately 0.4 acre. Less than 0.01 acre will be impacted within each parcel. In addition, the neighborhood gate is currently 55 feet from the edge of travel, and the widened Alternative 1 will reduce that storage length to 42 feet, so the gate may need to be relocated to provide ample vehicle storage between the gate and proposed roadway. The portions of these properties that would be affected by the Project are adjacent to existing ROW along SC 41 and primarily serve as undeveloped forested buffers between the existing roadway and developed portions of the community; thus, the impacts are expected to be permanent but minor.

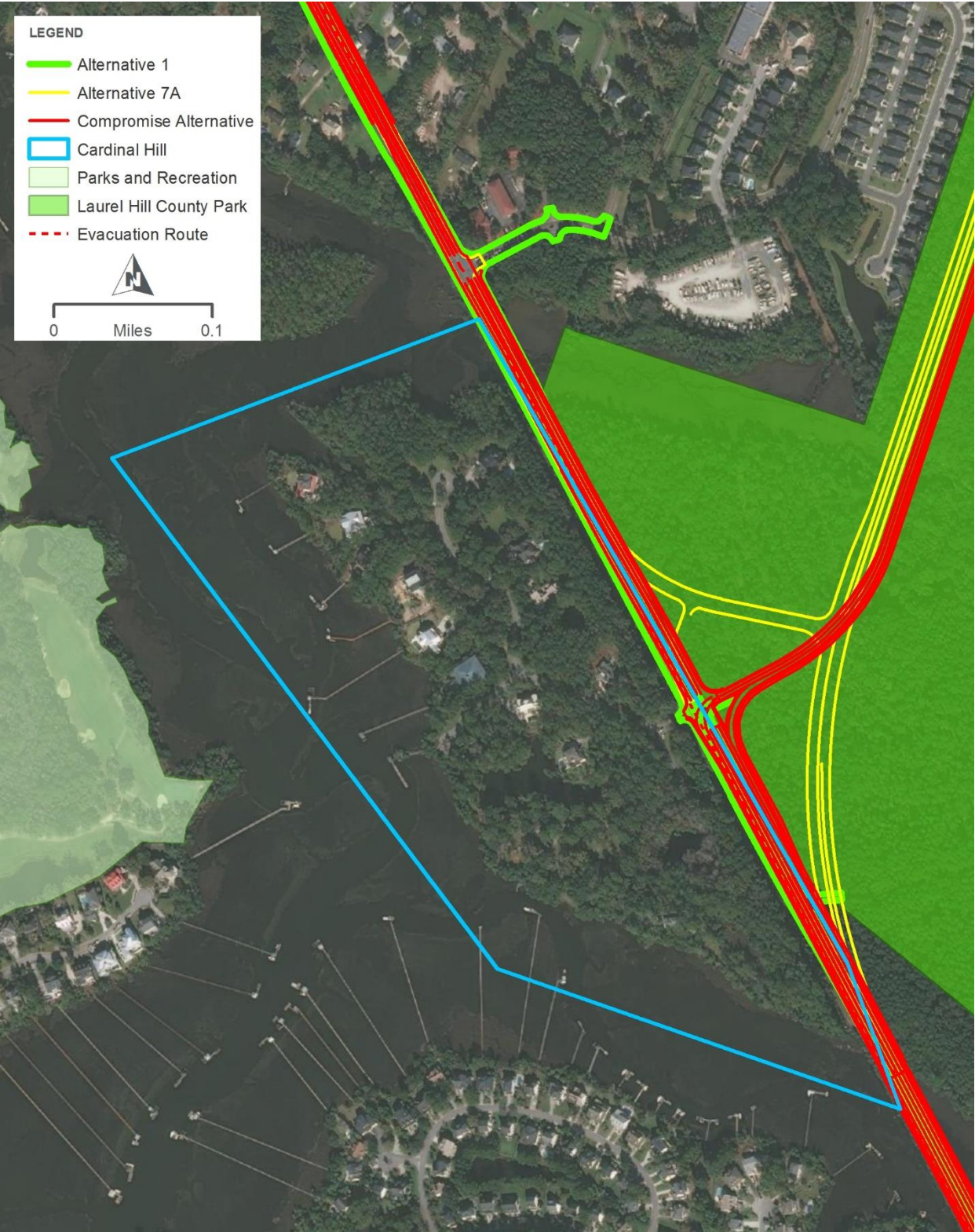


Figure 6. Cardinal Hill Community Resources and the Build Alternatives

4.4 Dunes West

Dunes West is an approximate 2,674-acre developer-designed neighborhood located in the northern portion of the study area, to the east of SC 41 (Figure). The neighborhood can be accessed from SC 41 via Bessemer Road, Dunes West Boulevard, Wood Park Drive, and Harpers Ferry Way. The neighborhood is bordered to the south by the Phillips Community. Dunes West is bordered to the east by the Park West neighborhood, and one can also access Dunes West via Park West Boulevard from US 17. Dunes West has approximately 12 miles of waterfront along Wando River, Wagner Creek and Toomer Creek. The neighborhood contains a mixture of single-family homes as well as apartments and townhouses. Dunes West Golf Club and Dunes West Athletic Club are private recreational resources located within the neighborhood. A large supermarket complex has been constructed on a Dunes West parcel along SC 41. Substantial forested buffers are present along the west side of the community, adjacent to existing SC 41, and along existing Dunes West Boulevard, in the southwest portion of the community.

Alternatives 1 and 7A would widen existing SC 41 to a five-lane roadway with a center raised island or two-way left-turn lane along the western boundary of Dunes West. Alternative 7A would additionally convert existing two-lane Dunes West Boulevard, which also currently consists of a center island, two bike lanes, and occasional turn lanes, into a five-lane roadway with a center raised island, a sidewalk on the east side, and a multi-use pathway on the west side. The Compromise Alternative would result in improvements being made to Dunes West Boulevard, including the addition of a right turn lane, but the majority of the road would remain two-laned. Alternative 7A and the Compromise Alternative would result in increased traffic volume through Dunes West. Intersection improvements along existing Dunes West Boulevard would help to mitigate congestion and mobility issues associated with increased traffic.

Alternative 1 would require a total of approximately 8.2 acres from parcels on the east side of SC 41, adjacent to Dunes West. This consists of undeveloped land that currently functions as a vegetative buffer between developed portions of the community and SC 41. Alternative 7A and the Compromise Alternative would require a total of approximately 12.1 and 9.8 acres, respectively, from parcels on the east side of SC 41 and within the southern portion of the community, where existing Dunes West Boulevard provides entrances into developed portions of the community, primarily to the north.



The Pastures

Realignments and additional

ROW associated with Alternative 7A and the Compromise Alternative would result in the loss of mostly undeveloped land surrounding existing Dunes West Boulevard. Developed portions are primarily mowed, grassed areas along the existing roadway, and these areas do not contain any buildings. One of these

areas, known as “the south pasture” or “the pastures,” at the entrance to Dunes West, is used by the community for events (Dunes West Property Owners Association [POA] 2015).

In addition to the impacts shared across the study area, as discussed in Section 4.1, Dunes West would experience specific impacts to community resources, economic and business conditions, mobility and access, public health and safety, and residential aspects. Overall, impacts associated with Alternative 1 and the Compromise Alternative would be minor and permanent and impacts associated with Alternative 7A would be minor to moderate, as discussed in the following sections.

Appendix A presents acreage impacts to individual parcels by build alternative.

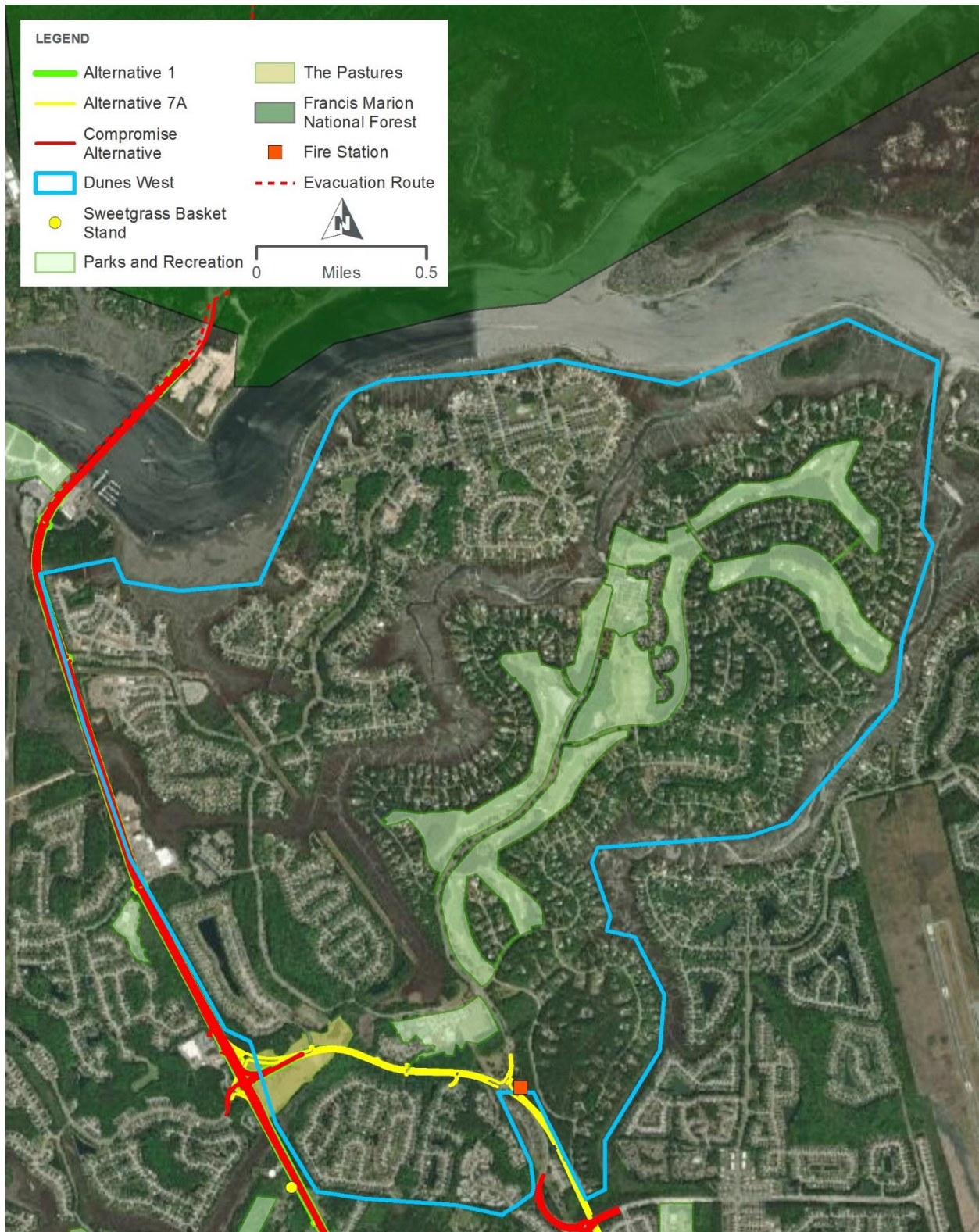


Figure 7. Dunes West Community Resources and the Build Alternatives

4.4.1 Community Resources

Alternatives 1, 7A, and the Compromise Alternative would affect small portions of several POA-owned undevelopable parcels or large undeveloped parcels. These parcels currently function as relatively wide vegetative buffers between residential portions of the community and SC 41. Two of these parcels are addressed in the next paragraph. Of the remaining parcels, Alternative 1 would impact seven parcels that fit this description, while Alternative 7A would impact 14 parcels of this type. Alternative 1 and Alternative 7A would affect approximately 5.4 percent and 5.8 percent of the overall acreage of these parcels, respectively. The Compromise Alternative would affect 10 vegetative buffer parcels and of these approximately 4.0 percent of the overall parcel acreage would be impacted.

Generally, impacts to each individual parcel would be small, totaling less than one acre. However, Alternatives 1, 7A, and the Compromise Alternative would affect four parcels by more than one acre each. For Alternatives 1 and 7A, one of these parcels is undevelopable due to being marsh associated with a tributary to the Wando River and two of these parcels are associated with developer-designed neighborhoods off Harpers Ferry Way. One of these functions as a vegetative buffer and drainage, while the other is composed of undeveloped portions a neighborhood. Affected portions of the latter parcel function as vegetative buffer between developed portions of the community and existing SC 41. Overall, the impacts to these three parcels are expected to be permanent but minor. The community would maintain use of the majority of these parcels, which would allow their continued function as forested buffers and/or drainage. For the Compromise Alternative, two of the parcels affected by more than one acre are undevelopable due to being marsh associated with a tributary to the Wando River and the other two parcels are associated with developer-designed neighborhoods off Harpers Ferry Way. Overall, the impacts to these four parcels are expected to be permanent but minor. The community would maintain use of the majority of these parcels, which would allow their continued function as forested buffers and/or drainage.

The remaining parcel affected by more than one acre from Alternatives 1 and 7A (Property Identification Number [PIN] 5941000329) is a POA-owned parcel at the main entrance to Dunes West, located at the intersection of SC 41 and Dunes West Boulevard. This parcel, along with another POA-owned parcel (PIN 5941000314), together totaling approximately 23.4 acres, are referred to as “the south pasture” or “the pastures” and are used by the community for events. One such event was described in the Summer 2015 quarterly newsletter of the Dunes West Property Owners Association (2015). The event was referred to as the “Highway 41 and Friends party” and included residents of Dunes West, Rivertowne, Park West, Planter’s Pointe, and Philips Manor, a developer-designed residential development within the Phillips Community. The event included children’s activities, live music, raffles, fire extinguisher safety inspections, and presentation of child seat safety information. Alternative 1 would result in the loss of approximately 1.3 acre, or 5.6 percent of these parcels, leaving approximately 22.1 acres for community use. Realignments and additional ROW associated with Alternative 7A would impact approximately 3.0 acres (12.8 percent) of this event space, leaving approximately 20.4 acres for community use. While the community would retain use of the majority of this space, the character of this community resource would be altered by Alternatives 1 or 7A. The Compromise Alternative would impact approximately 1.4 acres, or 6.0 percent of these parcels, leaving approximately 22.0 acres for community use. Alternative 1 and the Compromise Alternative would result in a permanent and minor impact to this community resource. These changes in relation to Alternative 7A are expected to result in a permanent and moderate impact to this community resource.

Alternative 7A would additionally affect a small portion of the approximate 19.2-acre Dunes West Athletic Club property. Dunes West Athletic Club is accessible to resident and nonresident club members who

pay initial fees and recurring dues (Dunes West Golf Club 2019). The impacted portion of this parcel (approximately 0.01 acre) is immediately adjacent to Dunes West Boulevard. Because the community would retain use of the developed portion of this parcel and the impacts would concentrate immediately adjacent to the existing roadway, Alternative 7A would result in a negligible impact to this community resource.

Overall, impacts associated with Alternative 1 to community resources in Dunes West are expected to be permanent and minor, whereas impacts associated with Alternative 7A are expected to be permanent and moderate, due to the effects to “the pastures.” Although the Compromise Alternative impacts “the pastures”, as does Alternative 7A, the widening of SC 41 to three lanes, rather than five would result in a smaller impact to the community. Therefore, the impacts of the Compromise Alternative on the Dunes West community would be permanent and minor.

4.4.2 Economic and Business Conditions

Alternatives 1 and 7A would each affect small portions of two commercial development acreages, and the Compromise Alternative would affect small portions of five commercial development acreages. These parcels currently function as vegetative buffers between residential portions of the community and SC 41. Impacts to these commercial properties associated with Alternative 1, Alternative 7A, and the Compromise Alternative widening of existing SC 41 are expected to be permanent and minor to negligible due to the maintenance of the majority of this developable commercial parcel alongside existing SC 41.

Realignments and new ROW associated with Alternative 7A would additionally affect small portions of two other commercial parcels totaling in their entirety approximately 7.6 acres. One of these parcels is the approximate 5.5-acre office complex called The Commons at Dunes West. The affected portions are immediately adjacent to existing Dunes West Boulevard and currently serve as part of the landscaped entrance to the complex.

The remaining commercial parcel affected by Alternative 7A functions as The Amenity Area at Dunes West, an approximate 2.1-acre parcel adjacent to The Commons at Dunes West that primarily consists of a new home sales center. The affected portion is immediately adjacent to existing Dunes West Boulevard and currently serves as part of the landscaped entrance to The Amenity Area at Dunes West.

Overall, Alternative 1, Alternative 7A, and the Compromise Alternative impacts to commercial parcels in Dunes West are expected to be permanent and minor to negligible because their effects would concentrate immediately adjacent to the existing roadway and would not affect their function. In addition, offsetting beneficial impacts are expected to occur to these commercial resources, as increased traffic through the community associated with Alternative 7A or the Compromise Alternative could potentially benefit these businesses.

4.4.3 Mobility and Access

Mobility within the study area and access to individual properties and developments in the study area would be improved with implementation of the Project, as discussed in Section 4.1. These effects would differ by build alternative in Dunes West. Alternative 1 and Alternative 7A would both alter existing SC 41 by expanding this two-lane road to a five-lane highway with a center raised island or two-way left-turn lane along the western boundary of Dunes West. This change associated with both build alternatives would improve access to Dunes West. However, Alternative 1 would not improve the existing intersections into and along Dunes West Boulevard that provide access into the separate developed areas within relatively densely populated Dunes West and, thus, may not greatly improve mobility and

access within Dunes West. Alternative 7A would change the existing intersection of SC 41 and Dunes West Boulevard to route traffic along widened and realigned SC 41. The Compromise Alternative would increase the number of lanes along SC 41 from two to three. Therefore, this alternative would improve mobility and access to Dunes West, but not to the same extent as the other road widening options. Alternative 7A would also convert existing two-lane Dunes West Boulevard into a five-lane roadway with a center raised island, a sidewalk on the east side, and a multi-use pathway on the west side. While Alternative 7A would increase the traffic volume on realigned SC 41, access into the different areas within Dunes West is generally expected to be improved by the expanded and realigned roadway with additional traffic signals. These traffic signals would additionally improve mobility of bicyclists and pedestrians both through the corridor and when crossing proposed SC 41 between the southern and northern portions of Dunes West. The Compromise Alternative would not increase the number of lanes present along Dunes West Boulevard and would improve mobility of bicyclists and pedestrians traveling through Park West enroute to Dunes West via the new two-lane parkway that would be constructed parallel to Bessemer Road and would include a multi-use path for bicyclists and pedestrians along the east side of the roadway.

Overall, while Alternative 1, Alternative 7A, and the Compromise Alternative would each result in beneficial effects to mobility and access across the study area, in Dunes West, the Alternative 7A-related traffic flow and intersection improvements is expected to increase these beneficial effects in Dunes West.

4.4.4 Public Health and Safety

Alternative 7A would improve public health and safety in Dunes West. While changes associated with Alternative 7A would widen the roadway and increase traffic volume through the southern portion of the community, the pedestrian and multimodal pathways on either side along with improved intersections with traffic signals would allow for safe bike or foot travel along the proposed roadway and safe crossing of the roadway to obtain access to other portions of the community.

Overall, implementation of Alternative 7A is expected to result in beneficial effects to public health and safety within Dunes West.

4.4.5 Residential Aspects

Alternative 7A would affect portions of one residential parcel that contains a residence in Dunes West. This 1.2-acre parcel, located at the southern extent of Kiln Court, north of Park West Boulevard, is currently surrounded by forested land to the south and west and one neighboring residence to the east. A small portion of the proposed Alternative 7A realignment of SC 41 and its associated ROW would be within 23 feet of the home, occupy an approximate 0.2-acre western portion of this parcel, or 17.2 percent of its overall acreage. Alternative 7A effects to this residential parcel are expected to be permanent and moderate.

4.5 Gregorie Ferry

Gregorie Ferry is an approximate 50-acre community that consists of several developer-designed neighborhoods. Gregorie Ferry is located in the southern portion of the study area, to the east of SC 41 and to the north of US 17 (Figure). The community can be accessed via Gregorie Ferry Road from SC 41 or via Winoing Way off US 17.

The neighborhoods in Gregorie Ferry are composed of a mixture of single-family homes and multifamily townhouses and apartments. Gregorie Ferry Landing Apartments is a large four-story apartment complex containing 240 units within Gregorie Ferry that can be accessed from Winoing Way. Some commercial

properties are located along US 17, at the entrance to Gregorie Ferry. Developed residential portions of the community are substantially set back from existing SC 41 and US 17, and substantial forested buffers are present between the community and these two roadways.

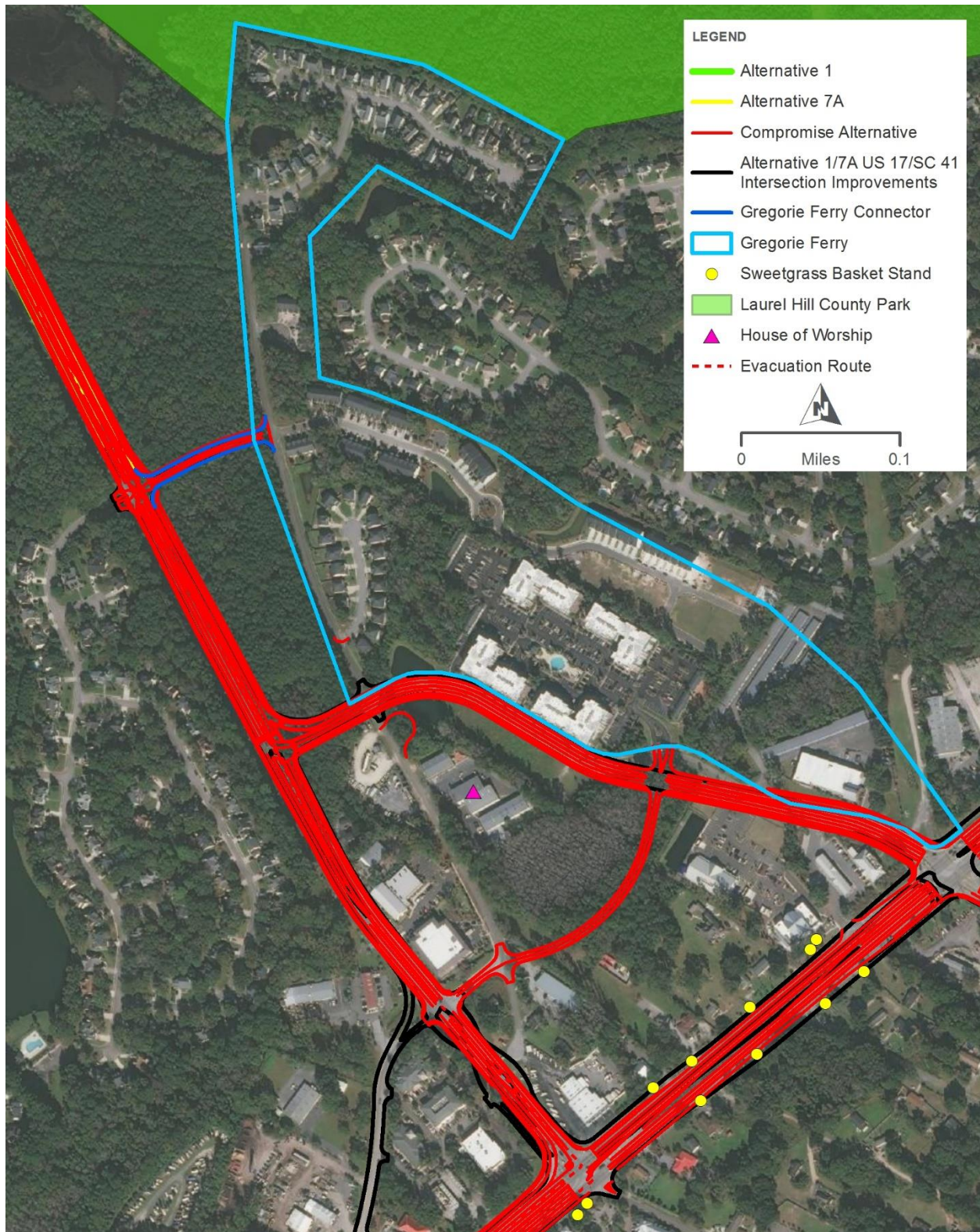


Figure 8. Gregorie Ferry Community Resources and the Build Alternatives

Improvements at the intersection of SC 41 and US 17, associated with each build alternative, would widen existing two-lane Winnowing Way to a four-lane roadway with a center two-way turn lane adjacent to the southern extent of Gregorie Ferry. Existing Winnowing Way would be extended to the west from its current terminus at Gregorie Ferry Road to intersect with SC 41 and would also be straightened in one location, central along its current extent, south of an apartment complex in Gregorie Ferry. Each build alternative would additionally change the existing two-lane SC 41 near the western portion of Gregorie Ferry to a five-lane roadway with a center raised island or two-way left-turn lane and would add a connecting road between Gregorie Ferry Road and proposed SC 41 where existing SC 41 intersects Colonnade Drive.

Alternatives 1 and 7A would require a total of approximately 1.0 acre and the Compromise Alternative would require a total of approximately 1.7 acres from parcels in Gregorie Ferry. This would result in additional roadways and a more expansive roadway adjacent to the southern portion of the neighborhood than exists currently.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Gregorie Ferry would experience specific impacts to community resources, economic and business conditions, and sensory aspects. While some moderate effects would occur at an apartment complex along existing Winnowing Way, impacts associated with each build alternative would generally be minor, as discussed in the following sections. Appendix A presents acreage impacts to individual parcels by build alternative.

4.5.1 Community Resources

Alternative 1, 7A, and the Compromise Alternative would affect one approximate 1.5-acre residential parcel owned by the Homeowners' Association of The Enclave at Gregorie Ferry, a small developer-designed neighborhood. This parcel is indicated as undevelopable in the Charleston County parcel data and currently functions as a buffer between the single-family residential parcels within the complex and Gregorie Ferry Road and Winnowing Way. The impact to this parcel is expected to be permanent and minor, due to loss of only a small portion (approximately 0.01 acre) that would not affect its function as a buffer from existing roadways.

Alternatives 1 and 7A would affect small portions of two commercial properties, together totaling in their entirety approximately 19.3 acres. One of these parcels is developed into a mini-storage facility, and the other parcel is developed as an apartment complex. Impacted portions of these commercial properties associated with either alternative would be small for each individual parcel (less than 0.7 acre); together the affected areas of the parcels total 1.0 acre and are adjacent to the existing roadways. The Compromise Alternative would affect small portions of four commercial properties, together totaling in their entirety approximately 29.8 acres. One of these parcels is developed into a mini-storage facility, one parcel is developed as an apartment complex, one contains several developed retail buildings, and one is an undeveloped commercial strip that currently functions as a vegetative buffer between residential portions of the community and US 17. Impacted portions of these commercial properties associated with the Compromise Alternative would be small for each individual parcel (approximately 0.4 acre); together the affected areas of the parcels total 1.7 acres and are adjacent to the existing roadways. The Project is not expected to affect the function of these parcels as commercial properties.

Overall, Project impacts to commercial parcels in Gregorie Ferry are expected to be permanent and minor to negligible because the impacts would concentrate immediately adjacent to the existing roadway and would not affect their function. In addition, offsetting beneficial impacts would occur to these commercial

resources, as increased traffic through the community could benefit existing businesses and potential commercial properties.

4.5.2 Sensory Aspects

Alternative 1, 7A, and the Compromise Alternative would introduce new Project-associated visual elements in Gregorie Ferry. These would occur in currently undeveloped portions of the Seven Mile community, adjacent to existing Winnowing Way. These changes would realign existing Winnowing Way in one location to straighten the roadway. These changes would not greatly alter the viewshed from the apartment complex nearby, to the north or any of the developed areas along US 17.

Some sensory effects, such as increased noise, vibration, dust, and vehicular smells, would occur in the immediate corridor of the selected build alternative, as discussed in Section 4.1. However, in Gregorie Ferry, these effects would be more impactful due to the relatively short distance between the proposed changes to Winnowing Way and one existing apartment complex. Increased sensory effects would occur in Gregorie Ferry with implementation of Alternatives 1 and 7A, which would result in a new four-lane roadway with a central two-way turn lane through the southern portion of the community that would sustain an increased volume of traffic compared with current conditions. Increased sensory effects would also occur in the southern portion of the Gregorie Ferry community with implementation of the Compromise Alternative, which would result in a new three-lane roadway with a central two-way turn lane in the northern portion of Winnowing Way and a new four-lane roadway with a central two-way turn lane in the southern portion of Winnowing Way. The changes to Winnowing Way would sustain an increased volume of traffic compared with current conditions. These effects are expected to be moderate at the location of the apartment complex but minor overall, as they would impact limited portions of the community, in an area that is primarily commercial.

4.6 Horlbeck Creek

Horlbeck Creek is an approximate 41-acre developer-designed neighborhood located in the southern portion of the study area, to the west of and accessible via SC 41 (Figure). The neighborhood is made up of large single-family homes and is bound to the east by SC 41, to the north by the waterway called Horlbeck Creek and its adjacent marshes, and to the south by the Brickyard/Colonnade neighborhood. A forested buffer is present along the east side of the community, adjacent to existing SC 41, and marshes along Horlbeck Creek, adjacent to SC 41, provide a vegetated setback from the extant roadway.

Alternatives 1 and 7A would change the existing two-lane SC 41 in the vicinity of Horlbeck Creek to a five-lane roadway with a center raised island or two-way left-turn lane. These changes would require a total of approximately 0.14 acre from parcels, all located on the west side of SC 41, adjacent to Horlbeck Creek. This would result in a more expansive roadway closer to the neighborhood than the existing roadway. The Compromise Alternative would transform SC 41 into a four-lane roadway with a planted median in the vicinity of Horlbeck Creek. The planted median would be replaced by a center-lane refuge for left turns exiting Tradewind Drive. These changes would require a total of approximately 0.11 acre from parcels, all located on the west side of SC 41, adjacent to Horlbeck Creek. This would result in a more expansive roadway, but fewer impacts than Alternative 1 or 7A.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Horlbeck Creek would experience specific impacts to community resources. These impacts would be minor and permanent, as discussed in the following section. Appendix A presents acreage impacts to individual parcels by build alternative.

4.6.1 Community Resources

Alternatives 1, 7A, and the Compromise Alternative would affect small portions of two POA-owned parcels that total in their entirety 23.8 acres. One of these parcels consists of marsh land situated along an unnamed tributary of Horlbeck Creek and provides property owner access to the creek via boardwalks built between the community's waterfront homes and the creek. The approximate 0.05-acre and 0.07-acre portion of this property that would be affected by Alternatives 1 and 7A and the Compromise Alternative, respectively, is adjacent to existing ROW along SC 41 and primarily serves as an undeveloped, vegetated buffer between developed residential portions of the community and the existing roadway. The other parcel in its entirety, serves as an undeveloped, vegetated buffer between the community and existing SC 41, and Alternatives 1 and 7A would result in the loss of an approximate 0.09-acre portion of this parcel while the Compromise Alternative would result in the loss of an approximate 0.04-acre portion of this parcel. The Project is not expected to affect the function of these POA-owned properties; thus, Project impacts to community resources in Horlbeck Creek are expected to be permanent but minor.



Figure 9. Horlbeck Creek Community Resources and the Build Alternatives

4.7 Ivy Hall

Ivy Hall is an approximate 144-acre developer-designed neighborhood in the southern portion of the study area, to the east of SC 41 and to the north of US 17 (Figure). The neighborhood is bordered to the west by the Gregorie Ferry neighborhood and to the north by Laurel Hill County Park. The neighborhood is made up of suburban single-family homes, and a commercial area is located in the southern portion of the neighborhood along US 17. Eastbridge Presbyterian Church and two sweetgrass basket stands are located within the neighborhood, along US 17 in front of other commercial properties, at the southern extent of the neighborhood. Developed residential portions of the community are set back from existing US 17, and forested buffers are present between the community and this roadway.

Each build alternative would warrant improvements to US 17 at and surrounding its intersection with SC 41. Near Ivy Hall, US 17 is currently a six-lane roadway with occasional turn lanes. These changes would add an additional turn lane in the southern portion of the community, requiring a total of approximately 0.2 acre for Alternatives 1 and 7A and 0.01 acre for the Compromise Alternative from parcels on the north side of US 17, adjacent to Ivy Hall. This would result in a more expansive roadway along the southern portion of the community, where commercial properties exist.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Ivy Hall would experience specific impacts to economic and business conditions. These impacts would be permanent and minor, as discussed in the following section. Appendix A presents acreage impacts to individual parcels by build alternative.

4.7.1 Economic and Business Conditions

Alternatives 1 and 7A would affect small portions of three commercial properties, together totaling in their entirety approximately 17.8 acres. These parcels are currently forested or developed retail properties. Impacted portions of these commercial properties associated with Alternatives 1 and 7A would be small for each individual parcel (less than 0.08 acre); together the affected areas of the parcels total 0.2 acre. The Compromise Alternative would affect a small portion of one 1.9-acre commercial property. This parcel is currently a developed retail property. The Compromise Alternative would impact a 0.01-acre portion of this parcel. The Project is not expected to affect the function of these developed commercial parcels.

Overall, Project impacts to commercial parcels in Ivy Hall are expected to be permanent and minor because the impacts would concentrate immediately adjacent to the existing roadway and would not affect their function. In addition, offsetting beneficial impacts would occur to these commercial resources, as more efficient traffic flow through the community could benefit existing businesses and potential commercial properties.

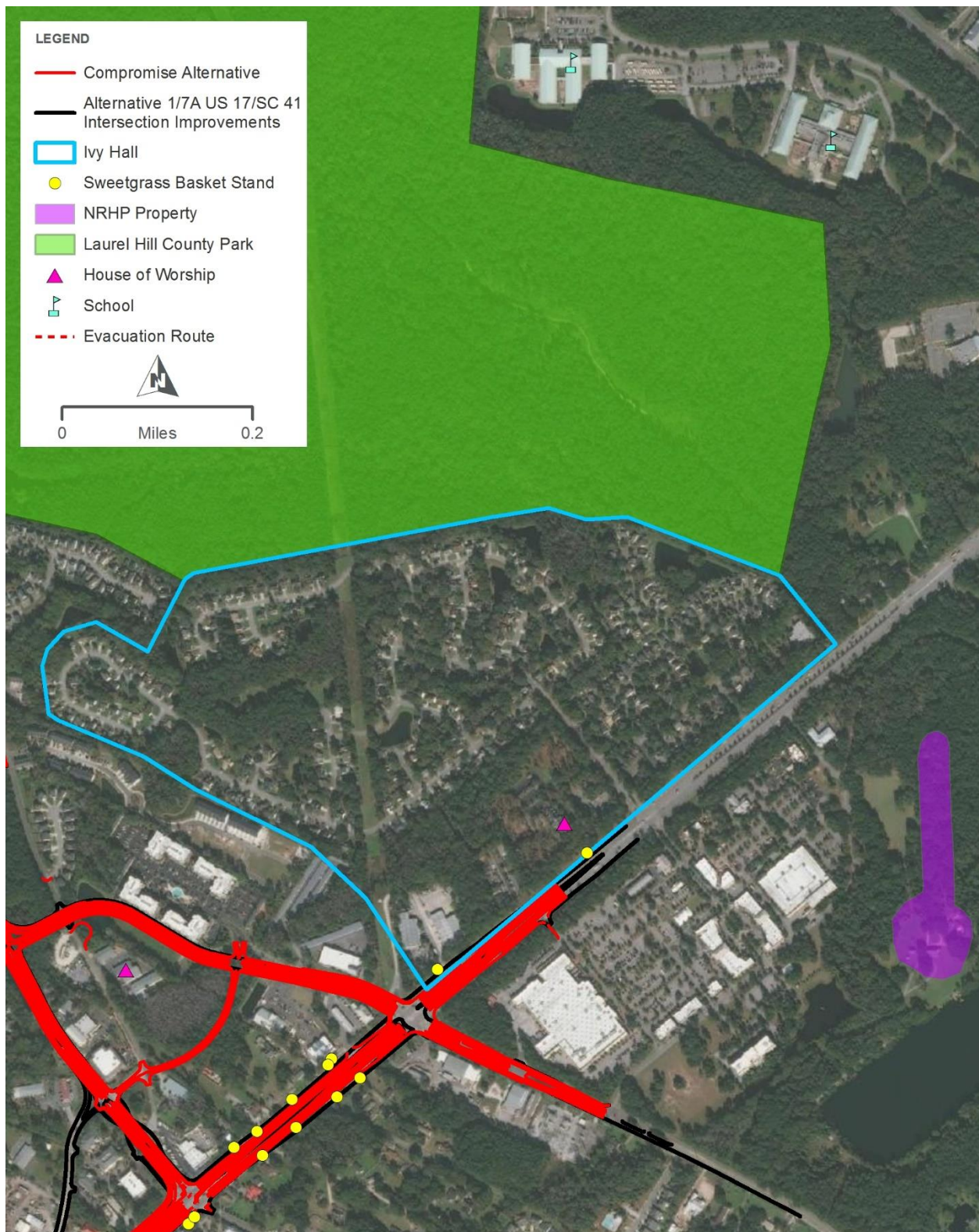


Figure 10. Ivy Hall Community Resources and the Build Alternatives

4.8 Park West

Park West is an approximate 1,859-acre developer-designed neighborhood located in the eastern portion of the study area, to the east of SC 41 and north of US 17 (Figure 5). The neighborhood can be accessed via Park West Boulevard from US 17; a portion of Park West Boulevard is currently being widened from two lanes to four-lanes, ending at a roundabout at Dunes West Boulevard. The neighborhood is located to the southeast of the Dunes West neighborhood and is connected to it by Park West Boulevard. The neighborhood contains a mixture of single-family homes and townhouses. Three Charleston County schools have been built within Park West in the past decade; these consist of Laurel Hill Primary School, Charles Pinckney Elementary School, and Thomas C. Cario Middle School. A commercial area containing a mixture of businesses is located within the neighborhood in an area close to US 17. Private recreational resources include approximately 6 miles of bike and hiking paths, 4.5 miles of Toomer Creek, and a crabbing dock at the park in the Masonborough section of Park West. Additionally, Town of Mount Pleasant maintains Park West Recreation Complex, featuring several sports fields and courts, an activity building and gym, a pool, a lake, and many walking trails (Town of Mount Pleasant 2019). Park West Recreation Complex provides the main access to Charleston County's Laurel Hill County Park, via a trailhead (Charleston County Park & Recreation Commission 2017).

As the community is located to the east of expected changes from Alternative 1, no direct impacts to Park West or its resources are expected to result from Alternative 1 apart from the impacts shared across the study area, discussed in Section 4.1.

Alternative 7A would result in a five-lane alignment from SC 41 along the current alignment of Dunes West Boulevard. This alternative would have a center raised island, a sidewalk on the east side, and a multi-use pathway on the west side between existing Park West Boulevard and Kiln Court, where Dunes West Boulevard changes names to Park West Boulevard. From there, a proposed new alignment would be constructed within existing undeveloped forested land adjacent to and east of Bessemer Road. This new alignment would join existing SC 41 south of the intersection of SC 41 and Bessemer Road. These changes would affect the extreme western portion of Park West, where Park West Boulevard and Bessemer Road currently traverse through the community. Realignment and additional ROW associated with Alternative 7A would result in the loss of approximately 11.3 acres of mostly undeveloped, forested land surrounding existing Park West Boulevard and Bessemer Road. Developed portions are primarily mowed, grassed areas along the existing roadway, and these areas do not contain any buildings.

The Compromise Alternative would construct a parallel road to Bessemer Road onto Laurel Hill County Park property, parallel to the power line easement, and then tie into Park West Boulevard via a new roundabout and continue along Dunes West Boulevard. This new location parkway would be a two-lane roadway with a multi-use path for bicyclists and pedestrians along the east side of the roadway. The Compromise Alternative would not require any changes to be made along Park West Boulevard between Chauncy's Court and Wando Plantation Way (where Dunes West Boulevard changes names to Park West Boulevard).

In addition to the impacts shared across the study area, as discussed in Section 4.1, Park West would experience specific impacts to community resources, land use, mobility and access, public health and safety, sensory aspects, and residential aspects. Impacts associated with Alternative 7A would generally be minor, but some moderate effects are expected to occur to some townhouse properties, as discussed in the following sections. The Compromise Alternative would work to further minimize the impacts of the widening project by avoiding the areas with the highest disturbance potential. Minor impacts are therefore

anticipated with the implementation of the Compromise Alternative compared to Alternative 7A. Moderate effects would occur to two multifamily residential parcels. Appendix A presents acreage impacts to individual parcels by build alternative.

4.8.1 Community Resources

Alternative 7A and the Compromise Alternative would affect portions of eleven parcels that are either undevelopable or POA-owned properties, together totaling in their entirety 438.3 acres. Generally, the individual acreage loss would be less than 1 acre. However, three parcels would lose approximately 1.4 to 3.9 acres as a result of Alternative 7A, and two parcels would lose approximately 2.5 and 2.6 acres as a result of the Compromise Alternative. Together, the affected areas of the parcels total approximately 8.6 acres for Alternative 7A and 6.7 acres for the Compromise Alternative. The portions of these properties that would be affected by the Project are immediately adjacent to existing ROW and primarily serve as undeveloped forested buffers between Dunes West Boulevard, Park West Boulevard, or Bessemer Road and developed portions of the community; thus, the impacts are expected to be permanent but minor.

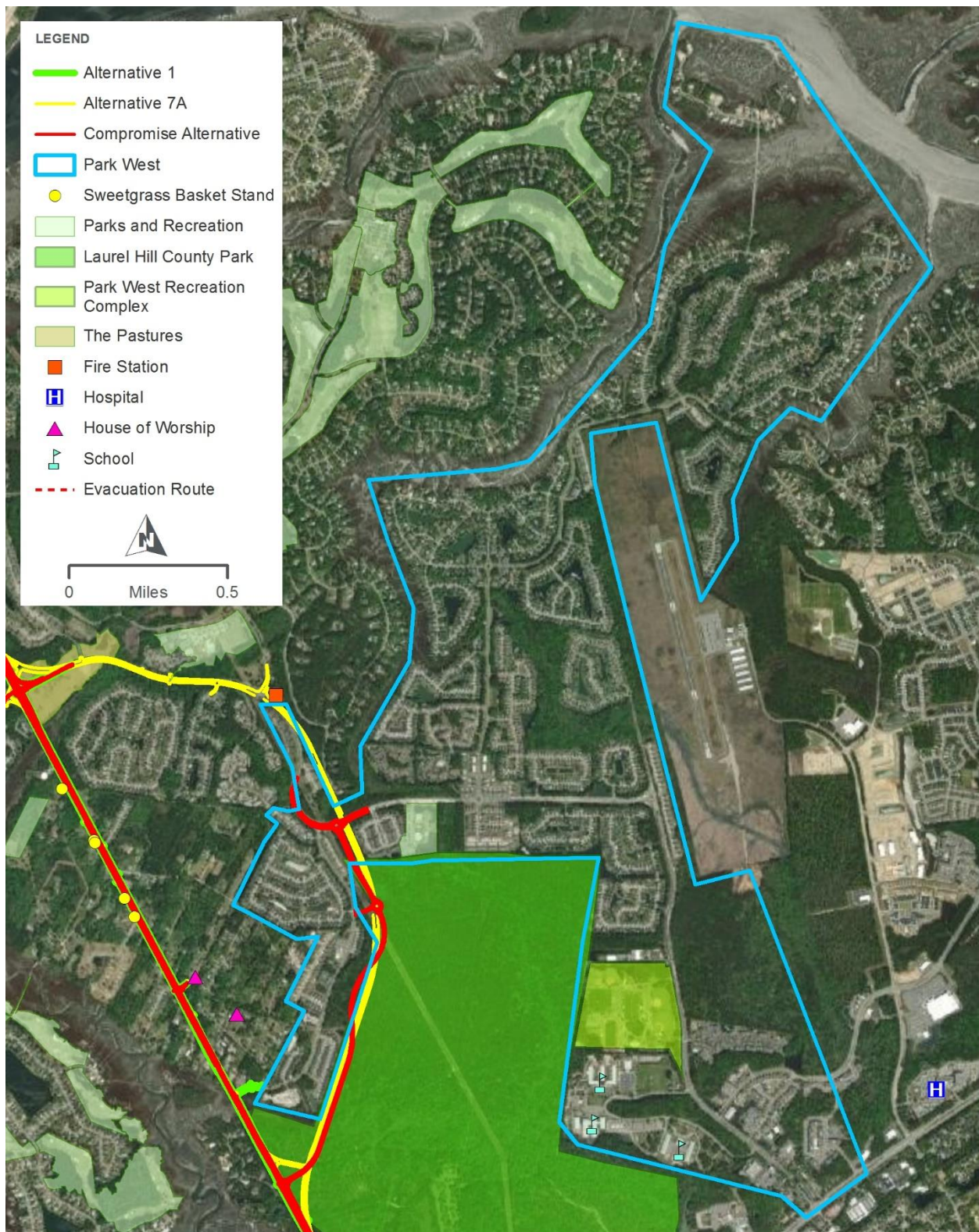


Figure 11. Park West Community Resources and the Build Alternatives

4.8.2 Land Use

Alternative 7A could alter land uses along existing Dunes West Boulevard. To the east of Bessemer Road and to the east of the location where Dunes West Boulevard turns to Park West Boulevard, land uses would change from undeveloped to transportation uses, and commercial land uses may also be stimulated in this location with Project completion. These impacts are expected to be permanent and minor depending on the proximity to occupied residential properties.

4.8.3 Mobility and Access

Mobility within the study area and access to individual properties and developments in the study area is expected to be improved with implementation of the Project. These effects would differ by build alternative in Park West. Alternative 1 would not alter the immediate entrance to Park West from SC 41 or the existing roadways that provide access into the various developed areas within relatively densely populated Park West and, thus, would not greatly improve mobility and access within Park West. Conversely, Alternative 7A would result in a five-lane alignment from SC 41 along the current alignment of Dunes West Boulevard. This alternative would have a center raised island, a sidewalk on the east side, and a multi-use pathway on the west side between existing Park West Boulevard and Kiln Court, where Dunes West Boulevard changes names to Park West Boulevard. From there, the proposed new alignment would be constructed within existing undeveloped forested land adjacent to and east of Bessemer Road. This new alignment would join existing SC 41 south of the intersection of SC 41 and Bessemer Road. Finally, the Compromise Alternative would construct a parallel road to Bessemer Road onto Laurel Hill County Park property, parallel to the power line easement, and then tie into Park West Boulevard via a new roundabout and continue along Dunes West Boulevard. This new location parkway would be a two-lane roadway with a multi-use path for bicyclists and pedestrians along the east side of the roadway. While Alternative 7A and the Compromise Alternative would increase the traffic volume on realigned SC 41, traffic on Bessemer Road is expected to reduce, and access into the different areas within Park West is generally expected to be improved by the expanded and realigned roadway with additional traffic signals as a result of Alternative 7A and roundabouts as a result of the Compromise Alternative.

Overall, while Alternatives 1, 7A, and the Compromise Alternative would each result in beneficial effects to mobility and access across the study area, the Alternative 7A and the Compromise Alternative-related traffic flow improvements is expected to increase these beneficial effects in Park West.

4.8.4 Public Health and Safety

Alternative 7A and the Compromise Alternative are expected to improve public health and safety in Park West. While changes associated with Alternative 7A would result in new road alignment and increased traffic volume through the western portion of the community, the pedestrian and multimodal pathways on either side along with improved intersections with traffic signals would allow for safe bike or foot travel along the proposed roadway and safe crossing of the roadway to obtain access to other portions of the community. Additionally, while changes associated with the Compromise Alternative would also result in new road alignment and increased traffic volume through the western portion of the community, the multi-use path for bicyclists and pedestrians on the east side of the roadway along with two new roundabouts would allow for safe bike or foot travel along the proposed roadway and safe crossing of the roadway to obtain access to other portions of the community. In addition, Project changes are expected to lead to reduced traffic volume on existing Park West Boulevard and Bessemer Road and make these roadways safer for multimodal traffic.

Overall, implementation of either Alternative 7A or the Compromise Alternative are expected to result in beneficial effects to public health and safety within Park West.

4.8.5 Sensory Aspects

Alternative 7A would introduce new Project-associated visual elements in Park West. These would occur in currently undeveloped portions of the community, between existing Park West Boulevard and Kiln Court to the east of Park West Boulevard and to the east of Bessemer Road to a point along existing SC 41 south of the intersection of SC 41 and Bessemer Road. These changes would not remove all existing trees between developed portions of the community and the new roadway; some forested buffer would remain to help make these changes minimal.

Some sensory effects, such as increased noise, vibration, dust, and vehicular smells, would occur in the immediate corridor of the proposed widened and realigned SC 41, as discussed in Section 4.1. However, in Park West, these effects would be more impactful due to the relatively short distance between the proposed Alternative 7A alignment and existing buildings. Increased sensory effects would occur in Park West with implementation of Alternative 7A, which would result in a new five-lane roadway through the western portion of the community that is expected to sustain an increased volume of traffic compared with current conditions. Overall, these effects are expected to be minor, as they would impact limited portions of the community. The implementation of the Compromise Alternative would benefit the flow of traffic with the addition of a third lane. Overall, the Compromise Alternative would have minimal sensory impacts in Park West.

4.8.6 Residential Aspects

Alternative 7A would affect seven developed or undeveloped individual parcels within three townhouse neighborhoods along Park West Boulevard; together in their entirety these parcels total 0.6 acre. The proposed ROW would come within 14 to 60 feet of the structures. Generally, these complexes and their associated parcels are either set back from the current roadways or are currently surrounded by vegetative buffers that tend to make effects from nearby roadways more minimal. Alternative 7A would result in the removal of some tall vegetation that currently buffers the affected parcels within these complexes and would be constructed within relatively close proximity to these residential properties. Together, the affected areas of these parcels total 0.01 acre.



Townhomes on Park West Boulevard (facing south)

The Compromise Alternative would affect four developed or undeveloped residential parcels with multifamily complexes along Park West Boulevard; together in their entirety these parcels total 23.6 acres. These generally function as vegetative buffers between developed portions of the community and existing Park West Boulevard. Together, the affected areas of these parcels total 0.45 acre.

Overall, Alternative 7A and Compromise Alternative effects to these townhome parcels are expected to be permanent and minor to moderate, depending on their distance from proposed realigned SC 41 and whether existing tree buffers would remain. In some cases, the existing vegetative buffers would help minimize the effects of the Project in this location.

4.9 Phillips Community

The Gullah African-American community of Phillips is an approximate 392-acre, long-term, rural-residential settlement area that is centrally located within the study area along SC 41, approximately halfway between the bridge over the Wando River and US 17 (Figure). Early in its settlement history, just following the American Civil War, the Phillips Community (also termed herein “Phillips”) was characterized by large, family-held tracts primarily developed as agricultural fields. The second generation of Phillips community members tended to settle on undeveloped portions of the individual parcels, and subsequent generations inherited the properties of their parents and divided those between their siblings. Ownership of the larger parcel was often transferred to a person’s heirs, rather than named individuals. These inheritance patterns still characterize the community of Phillips today, and a large percentage of the original parcels remain whole. Several single-family residences are scattered across most parcels, and small local roads provide access to these. SC 41 and its predecessor, SC 511, divided these family properties, resulting in relatives living on either side of SC 41 from one another. Several sweetgrass basket stands are located along SC 41. In recent years, some planned residential developments have been constructed on former family properties in Phillips; however, due to being within the larger Phillips Community, these areas are included in this section.

In the Phillips Community, Alternative 1 would result in the widening of SC 41 to a five-lane roadway with a center raised island or two-way left-turn lane. Alternative 1 would require approximately 5.2 acres along existing SC 41. Projected population growth in the study area is expected to lead to increased traffic volume on SC 41, including through the Phillips Community, while congestion would be reduced and traffic flow would be improved. The addition of a center raised island or two-way left-turn lane would help improve the safety of community members crossing existing SC 41 as pedestrians and turning into their driveways or access roads.

Alternative 7A would widen SC 41 to a three-lane roadway with a center two-way left-turn lane through the Phillips Community. Alternative 7A would require approximately 0.4 acre in the community. Additionally, Alternative 7A is expected to lead to decreased traffic volume through the Phillips Community, at least in the short term (see the Environmental Report for details on projected traffic volumes).

The Compromise Alternative would widen SC 41 to a three-lane roadway with a center two-way left-turn lane through the Phillips Community. The addition of Laurel Hill Boulevard would also serve to redirect some traffic flow while minimizing the impact the Project has on the Phillips Community. The Compromise Alternative would require 0.95 acre of property within the community to accomplish the road builds.

In addition to the impacts shared across the study area, as discussed in Section 4.1, the Phillips Community would experience specific impacts to the NRHP-eligible Phillips Cultural Landscape (see Section 1.2) and its associated resources as well as specific impacts to community resources (other than those identified in the Phillips Cultural Landscape), economic and business conditions, mobility and access, public health and safety, sensory aspects, and residential aspects. Social, cultural, and psychological effects and recurring and cumulative effects to the Phillips Community are addressed in the

Phillips Cultural Landscape section of this report, Section 4.9.1 and in the Phillips Cultural Landscape report.

Overall, the impacts to the Phillips Community associated with Alternative 1 would be permanent and moderate to major, due to the lack of distance of many residences from the proposed roadway, the effects being felt across the community, and depending on the legal status of affected parcels, as discussed in Section 4.9.7. Impacts associated with Alternative 7A would be minor, as discussed in the following sections. The changes associated with the Compromise Alternative would range from minor to moderate. Appendix A presents acreage impacts to individual parcels by build alternative.



Charleston County
Transportation Development

4.9.1 Phillips Community Cultural Landscape

The Phillips Cultural Landscape is an NRHP-eligible historic district encompassing the Phillips Community, also considered the community settlement area, and several associated community resources (i.e., the Phillips Community), Papa's Island, the Bridge over Horlbeck Creek that once afforded access to Parker's Island, Horlbeck Creek, an approximate late nineteenth- to mid-twentieth-century cemetery on a peninsula at the southern extent of Parker's Island, and Greater Goodwill AME Church (Figure). All of these resources are within or immediately surrounding the Phillips Community except Greater Goodwill AME Church, which is south of Phillips on US 17 near its intersection with SC 41 and included as a non-contiguous contributing resource. The Phillips Cultural Landscape meets NRHP criteria due to its historical and cultural significance as well as its potential to expand our knowledge of local and regional Gullah material culture. Because of the cultural significance of the Phillips Cultural Landscape, for the Phillips Community, social, cultural, and psychological effects and recurring and cumulative effects are addressed in this section.



The Bridge over Horlbeck Creek

Under the No-Build Alternative, there would be no impacts to the Phillips Cultural Landscape. Currently, SC 41 is a reasonably accessible, two-lane highway with an associated approximate 37.5-foot ROW on either side. SC 41 extends north-south through the Phillips Cultural Landscape and associated settlement area composed of family properties. Phillips community members would be expected to continue the generations-long cultural practice of crossing SC 41 as pedestrians to access other portions of the Phillips Cultural Landscape, including portions of family properties on the opposite side of SC 41, community gathering places, and natural resource harvesting areas such as the Bridge over Horlbeck Creek or the community-owned Park. The cultural practices associated with these community resources would continue to help maintain the traditional culture of the Phillips Community and the traditional cultural identities of community members, both of which are key aspects of the community that are supported by the Phillips Cultural Landscape.

Under the No-Build Alternative, there would be no impacts to the Phillips Cultural Landscape. Currently, SC 41 is a reasonably accessible, two-lane highway with an associated approximate 37.5-foot ROW on either side. SC 41 extends north-south through the Phillips Cultural Landscape and associated settlement area composed of family properties. Phillips community members would be expected to continue the generations-long cultural practice of crossing SC 41 as pedestrians to access other portions of the Phillips Cultural Landscape, including portions of family properties on the opposite side of SC 41, community gathering places, and natural resource harvesting areas such as the Bridge over Horlbeck Creek or the community-owned Park. The cultural practices associated with these community resources would continue to help maintain the traditional culture of the Phillips Community and the traditional cultural identities of community members, both of which are key aspects of the community that are supported by the Phillips Cultural Landscape.

Direct impacts are expected to the Phillips Cultural Landscape in relation to each build alternative. Alternative 1 would require approximately 4.7 acres of ROW from the community due to the addition of two traffic lanes and a center raised island or two-way left-turn lane. Alternative 7A would require approximately 0.6 acre of ROW from the addition of a two-way left-turn lane through the Phillips Cultural Landscape. The Compromise Alternative would require approximately 0.95 acre of ROW from the addition of a two-way left-turn lane through the Phillips Cultural Landscape. The acreage associated with each build alternative ROW would be located adjacent to the existing ROW currently associated with SC 41. The portions of the Phillips Cultural Landscape that could be directly affected by the build alternatives

include several community resources that contribute to the NRHP significance of the Phillips Cultural Landscape: five sweetgrass basket stands, a terracotta-encased well associated with the former Phillips School, and a brick tomb. Overall, direct physical impacts to these community resources associated with the Phillips Cultural Landscape located within the proposed new ROW would be avoided or minimized by the Project, as detailed below. While the SC 41 ROW would be nearer residences in the Phillips Cultural Landscape with implementation of the Project, no commercial or residential relocations are expected to be necessary for the Project. Thus, no direct physical impacts to residences or other buildings located on family properties in the Phillips Cultural Landscape are expected.

Though four sweetgrass basket stands were identified during the cultural resources survey for the Project (Baluha et al. 2019), this number is dynamic and stands may quickly appear or be taken down depending on the need of basket makers. Aerial imagery, for instance, has identified five sweetgrass basket stands in the Phillips Cultural Landscape (Richardson Seacat 2018). While the majority of these appear to function as basket-selling stands and one may be currently used as a gathering place, both activities are important traditional cultural practices that contribute to the NRHP significance of the Phillips Cultural Landscape. None of the five stands identified with aerial imagery are within the Project's limits of disturbance. Two stands are located 17 feet from the LOD, two are 19 feet from the LOD, and one is 82 feet from the LOD. If relocation is deemed necessary of preferential by basket makers impacts would be minimized by relocating the stands outside the proposed new ROW.

A circular, concrete-topped, terracotta-lined well understood to be associated with the former Phillips School is located on the west side of SC 41, within the proposed ROW of Alternative 1. The two-room Phillips School was an African-American school operating within the community at least by 1918 but likely prior to this time, based on local and state trends (Richardson Seacat 2018). The school was closed in 1953 with the establishment of Jennie Moore Elementary School, an African-American equalization school. The well is located approximately 23 feet west of the existing SC 41 ROW. However, direct impacts to the well would be avoided by the road changes proposed in the Project. A vaulted, English-bond brick tomb, identified as 38CH1752 in the South Carolina State Historic Preservation Office database and important to Phillips community members as a symbol of the community's association with the pre-Civil War era, exists within the proposed ROW of each alternative. However, the tomb would be avoided by the road changes proposed in the Project.

Indirect impacts are also expected to the Phillips Cultural Landscape in relation to each build alternative. Indirect impacts were assessed using qualitative factors developed through interviews with community members and stakeholders as well as background research and researcher insights. Alternative 1 would change the two-lane, reasonably accessible roadway to a larger, multi-lane highway with a wider expanse to cross as pedestrians. Alternative 1 may also affect land use in the Phillips Community, potentially changing the characteristic rural residential uses to commercial and higher density developer-designed residential uses. These changes may alter how community members utilize portions of the Phillips Cultural Landscape and, in turn, affect how community members interact with one another and, more generally, modify how the community associates with the Phillips Cultural Landscape and its associated resources. Thus, Alternative 1 is expected to indirectly alter the traditional culture of the Phillips Community and the traditional cultural identities of community members, both of which are key aspects of the community that are supported by the Phillips Cultural Landscape. As these changes would affect aspects of the Phillips Cultural Landscape that make this historic property eligible for the NRHP, implementation of Alternative 1 would result in an adverse effect to the Phillips Cultural Landscape (see Section 1.2 for discussion regarding the federal agency responsibility to consider adverse effects to NRHP properties).

Alternative 7A and the Compromise Alternative would result in the addition of a two-way left-turn lane through the Phillips Cultural Landscape, and proposed SC 41 would be rerouted outside of the community, thereby reducing the traffic volume on existing SC 41, at least in the short term. While the Project would increase the expanse of the roadway by one lane, this change is not expected to substantially alter how family and community members interact, and community members are expected to continue to cross the roadway to access other portions of the Phillips Cultural Landscape, including portions of family properties on the opposite side of SC 41, community gathering places, and resource harvesting areas. Additionally, the reduction of traffic volume through Phillips associated with Alternative 7A and the Compromise Alternative is expected to indirectly nurture one of the community's core cultural values currently supported by the Phillips Cultural Landscape: the sense that a close-knit community with members who have feelings of security provides "quality of life" (Richardson Seacat 2018). Overall, implementation of Alternative 7A or the Compromise Alternative is not expected to negatively affect the traditional culture of the Phillips Community or the traditional cultural identities of community members and, therefore, would not result in an adverse effect to the Phillips Cultural Landscape. Over the long term (25 years or more), traffic volumes are expected to increase to current volumes; however, that projected change with population growth and personal decisions to travel existing SC 41 rather than realigned SC 41 would not be related to the Project.

Cumulative impacts were assessed using qualitative factors developed through interviews with community stakeholders as well as background research. In the past few decades, the area surrounding the Phillips Cultural Landscape has changed drastically. Since the 1970s, the Town of Mount Pleasant incorporation limits began to expand to the east (Town of Mount Pleasant 2017). By 1990, areas surrounding the Phillips Community incorporated into the Town and were newly developed, and these changes led to drastic alteration of the area's racial composition. While, in 1930, the population was 77 percent African American, by 1960, African Americans composed only 34 percent of the population. Over time, these compounding changes in the study area, including population growth, changing lifestyles, and a subsequent increase in new residential and commercial developments and roadway projects, such as the widening of US 17 to the south of Phillips in 2013, have affected the traditional culture of the Phillips Community and also led to the need for the Project. Thus, implementation of Alternative 1, which would expand the current two-lane roadway through Phillips to five lanes, could contribute to cumulative impacts to the traditional culture of the Phillips Community and the traditional cultural identities of community members and, thus, compound adverse effects to the NRHP-eligible Phillips Cultural Landscape.

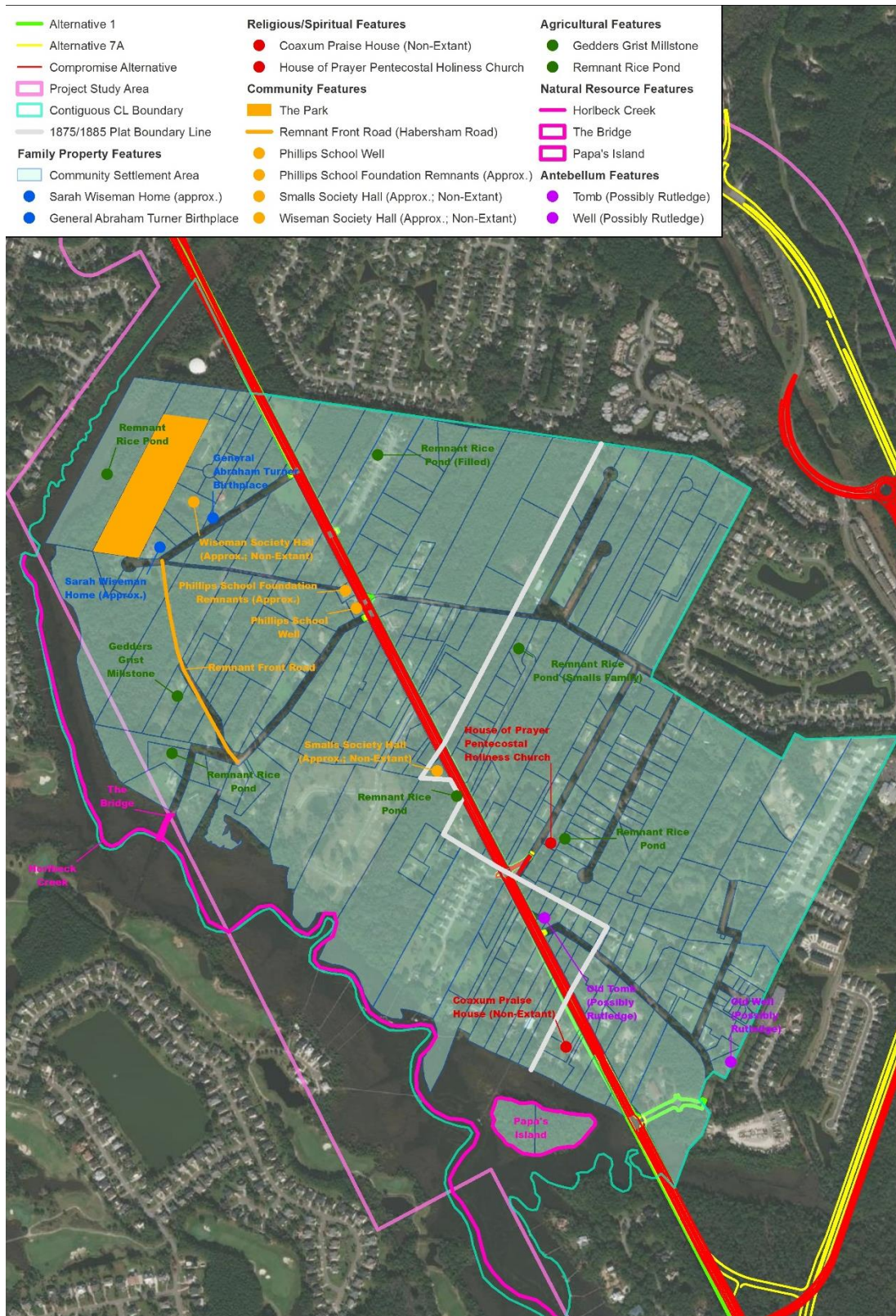


Figure 13. Phillips Community Cultural Landscape

4.9.2 Community Resources

Alternatives 1, 7A, and the Compromise Alternative would affect small portions of one approximate 0.2-acre parcel indicated as undevelopable in the Charleston County parcel data. This parcel is located adjacent to marsh associated with an unnamed tributary of Horlbeck Creek, across SC 41 from the southern extent of Joe Rouse Road. Alternative 1 would affect approximately 0.008 acre of this parcel, while Alternative 7A and the Compromise Alternative would affect approximately 0.04 acre of this parcel.

Alternative 1 would result in losses to an additional six parcels associated with POAs or indicated as undevelopable in the Charleston County parcel data: together these parcels, in their entirety, total 2.3 acres. Two of these Alternative 1-impacted parcels are associated with two developer-designed residential developments within the Phillips Community: Phillips Manor and Sunchaser. These developments are located in the northern and central portions of the Phillips Community, respectively. The parcel in Phillips Manor currently functions as stormwater drainage and a vegetative buffer between Phillips Manor and SC 41, while the parcel in Sunchaser functions as a roadway through the neighborhood. Two other Alternative 1-impacted parcels are associated with the private roadways of Phillips community members; these consist of parcels associated with Virginia Rouse Road and Elijah Smalls Road. The remaining two Alternative 1-impacted parcels fitting this description are owned by individuals or the Phillip Community Association, a nonprofit associated with generational Phillips community members and may be deemed undevelopable due to their small size along existing roadway. Together, Alternative 1 would impact approximately 0.3 acre associated with these parcels. There are no impacts to the Phillips Cultural Landscape with the implementation of Alternative 7A.

Overall, impacts to these seven parcels are expected to be permanent and minor. For the most part, the majority of these parcels would not be lost to community use, and for those not functioning as road ROW or some POA use, they are already deemed undevelopable.

In addition to the undevelopable parcel mentioned above, the Compromise Alternative would result in losses to an additional two parcels associated with POAs or indicated as undevelopable in the Charleston County parcel data. Together these parcels, in their entirety, total 1.15 acres. One of these parcels functions as a roadway through the Sunchaser neighborhood within the Phillips Community. The other parcel is owned by the Phillips Community Association and may be deemed undevelopable due to its small size along the existing roadway. Together, the Compromise Alternative would impact approximately 0.04 acre associated with these parcels.

4.9.3 Economic and Business Conditions

Alternative 1 would affect portions of three commercial parcels in the Phillips Community. One of these parcels currently functions as combined commercial and residential space for Phillips community members, containing an adult daycare. The other two parcels are undeveloped portions of known family properties. Impacts to these commercial properties would be less than one acre each and are expected to be permanent and minor since the property owners would be able to maintain use of the majority of these parcels. Offsetting beneficial impacts are also expected to occur to these commercial resources, as increased traffic through the community associated with Alternative 1 could potentially benefit these individual businesses or commercial development acreages.

The Compromise Alternative would affect portions of three commercial parcels in the Phillips Community. One of these parcels is a vacant commercial property that currently functions as a vegetative buffer between residential portions of the community and SC 41, another currently functions as a Circle K gas station and convenience store, and the third parcel currently functions as a ground storage tank for Mount

Pleasant Waterworks. Together, the Compromise Alternative would impact approximately 0.7 acre associated with these parcels.

4.9.4 Mobility and Access

Mobility within the study area and access to individual properties and developments in the study area is expected to be improved with implementation of the Project, as discussed in Section 4.1. However, these effects would differ by build alternative in the Phillips Community. Alternative 1 would result in the widening of two-lane SC 41 to a five-lane roadway. Turning left into individual properties would likely be more difficult with two traffic lanes to cross. Alternative 7A, on the other hand, would allow turning into individual properties by crossing one opposing lane of traffic. Moreover, Alternative 7A would reduce the traffic volume on existing SC 41 and, subsequently, make turning left across one lane of traffic easier than in current conditions. The Compromise Alternative would have similar impacts to the area as Alternative 7A. Because this build would only increase SC 41 by one additional lane, the ability to turn would be easier than with three additional lanes as is proposed for Alternative 1. Furthermore, the development of Laurel Hill Boulevard would divert some vehicles from SC 41 thereby reducing traffic time.

Overall, while Alternative 1, 7A, and the Compromise Alternative would each result in beneficial effects to mobility and access across the study area, the Alternative 1-related effects of increased traffic volume and the addition of one lane of opposing traffic are expected to partially offset these beneficial effects in the Phillips Community and, thus, result in minor negative impacts.

4.9.5 Public Health and Safety

Each build alternative is expected to improve public health and safety in the Phillips Community. The addition of a central two-way turn lane would help improve pedestrian safety as well as crossing the turning left resident's driveways or access roads. However, these beneficial effects of the Project would be offset by the aforementioned negative effects associated with developing family parcels with the implementation of Alternative 1. Alternative 1 would increase the existing two-lane SC 41 to a five-lane highway, resulting in a wider expanse to cross. Alternative 1 would also increase the traffic volume on existing SC 41.

Overall, while Alternatives 1, 7A, and the Compromise Alternative would each result in some beneficial effects to public health and safety across the study area, the Alternative 1-related effects of a much wider roadway to cross combined with increased traffic volume are expected to offset these beneficial effects in the Phillips Community and, thus, result in mostly negative effects.

4.9.6 Sensory Aspects

Some sensory effects, such as increased noise, vibration, dust, and vehicular smells, would occur in the immediate corridor of the proposed widened and realigned SC 41, as discussed in Section 4.1. However, in the Phillips Community, these effects would be more impactful due to the lack of vegetative buffers between existing SC 41 and developed portions of the community and the relatively short distance between SC 41 and existing buildings.

Overall, while increased sensory effects would occur in the Phillips Community with each build alternative, these effects would be intensified with implementation of Alternative 1, which would result in a wider roadway through the community and an increased volume of traffic compared with current conditions.

4.9.7 Residential Aspects

Alternative 1 would result in the acquisition of small portions of approximately 69 residential parcels within the Phillips Community; together, these parcels total 79.9 acres in their entirety. These changes would

result in the loss of approximately 4.1 acres associated with these parcels. Two of these residential parcels are associated with residents of Sunchaser, while the vast majority are associated with intact family properties of generational Phillips community members. Thirteen residences or other buildings appearing like residences that are located on the affected residential parcels and one additional residential parcel would be within 30 feet of the proposed Alternative 1 ROW. While each parcel would lose less than 0.3 acre, overall, residential impacts associated with Alternative 1 in the Phillips Community are expected to be permanent and moderate. While the majority of these residential parcels would remain intact, few trees are present between the residences and the roadway to help buffer the effects of the Project. Further, the proximity of the proposed Alternative 1 ROW to 13 residences on affected parcels would result in effects to a large number of family properties scattered across the community, as shown in Figure ; thus, Alternative 1 effects would be felt among a substantial portion of the community and, based on the assessment factors outlined in Section 2.4, would be considered moderate.

Alternative 7A would affect a small portion of one approximate 0.9-acre residential parcel within the Phillips Community. These changes would result in the loss of approximately 0.2 acre of this parcel, which contains a residence with a substantial setback and some vegetative buffer from existing SC 41. As such, residential impacts associated with Alternative 7A in the Phillips Community are expected to be permanent but minor.

The Compromise Alternative would affect five residential parcels within the Phillips Community; together in their entirety, these parcels total 3.82 acres. Two of these residential parcels each contain a residence and the third residential parcel is deemed undevelopable due to its small size along the existing roadway. Few trees are present between one residence and existing SC 41 to help buffer the effects of the Project while the other parcel contains a residence with a substantial setback and some vegetative buffer from existing SC 41. Together, the affected areas of these three parcels total 0.23 acre.

Negative effects to residential parcels in the Phillips Community would be exacerbated by the prominence of heirs' property in the community. If any of the affected parcels are legally heirs' properties, meaning that they are owned in common among the heirs of earlier owners of the properties, compensation for the loss of portions of these parcels would be shared among all the heirs. This could result in a very small portion of the overall compensation amount going to each heir. For these properties, which has been estimated by community members to be the majority of family properties still held in the Phillips Community (Richardson Seacat 2018), impacts are anticipated to be permanent and major, as heirs living near the road who may self-elect to relocate due to the expanded roadway (rather than being forced to relocate due to the Project) would potentially not receive enough individual compensation to be able to relocate elsewhere, and other portions of the properties may be occupied by other family members.

4.10 Planter's Pointe

Planter's Pointe is an approximate 221-acre developer-designed neighborhood located in the northern portion of the study area, to the west of SC 41 (Figure). The neighborhood can be accessed via Planter's Pointe Boulevard and contains single-family homes. Planter's Pointe is bordered to the west and south by the Rivertowne community.

Planter's Pointe Clubhouse is located in the northern portion of the neighborhood, to the west of SC 41 and to the south of Planter's Pointe Boulevard. This private recreational complex includes a clubhouse, a swimming pool, and four tennis courts. Generally, developed residential portions of the community are substantially set back from existing SC 41, and substantial forested buffers are present between the community and this roadway.

Build Alternatives 1 and 7A would change the existing two-lane SC 41 in the vicinity of Planter's Pointe to a five-lane roadway with a center raised island or two-way left-turn lane. These changes would require approximately 1.6 acre on the west side of SC 41, adjacent to Planter's Pointe. This would result in a more expansive roadway closer to the neighborhood than the existing roadway. The Compromise Alternative would change the existing two-lane SC 41 into a four-lane roadway with a planted median in the vicinity of Planter's Pointe.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Planter's Pointe would experience specific impacts to community resources. These impacts would be minor and permanent, as discussed in the following section. Appendix A presents acreage impacts to individual parcels by build alternative.

4.10.1 Community Resources

Build Alternatives 1 and 7A would affect small portions of eight parcels in the community that are owned by the Planter's Pointe Homeowners' Association and/or indicated as undevelopable in the Charleston County parcel data; together these parcels total in their entirety 32.3 acres. Impacted portions of these properties would be small (less than 1 acre) for each individual parcel, and together the impacted portions total 1.6 acre. The Compromise Alternative would affect portions of six parcels that are either undevelopable or Planter's Pointe Homeowners' Association-owned properties, together totaling in their entirety 20.55 acres. Generally, the individual acreage loss would be less than 0.2 acre. The affected areas of the parcels total approximately 1.14 acres. The portions of these properties that would be affected by the Project are adjacent to existing ROW along SC 41 and currently serve as undeveloped forested buffers between the existing roadway and developed portions of the community; thus, the impacts are expected to be permanent but minor.



Figure 14. Planter's Pointe Community Resources and the Build Alternatives

4.11 Rivertowne

Rivertowne is an approximate 1,333-acre developer-designed neighborhood located in the central portion of the study area, to the west of SC 41 (Figure). The neighborhood can be accessed via Rivertowne Parkway from SC 41. The neighborhood is located to the south and west of the Planter's Pointe neighborhood and to the west of the Phillips Community. Rivertowne is made up of single-family homes and contains two separate communities, each with its own private recreational resources. Rivertowne Country Club is a golfing community and has an 18-hole semi-private golf course, swimming pool, and tennis courts. Rivertowne on the Wando is a waterfront community located along the Wando River. Both communities within Rivertowne are made up of single-family homes and have private multimodal resources in the form of bicycle and pedestrian trails. A grocery store is located in the northern portion of the neighborhood along SC 41. Only a small portion of Rivertowne is adjacent to existing SC 41, and this portion is substantially set back from SC 41 and is shielded from this roadway by relatively wide forested buffers.

Alternative 1 would change the existing two-lane SC 41 in the vicinity of Rivertowne to a five-lane roadway with a center raised island or two-way left-turn lane. These changes would require approximately 1.0 acre on the west side of SC 41, adjacent to Rivertowne. This would result in a more expansive roadway closer to the neighborhood than the existing roadway. Alternative 7A would widen SC 41 to a three-lane roadway with a center two-way left-turn lane south of Dunes West Boulevard and would widen SC 41 to a five-lane roadway with a center raised island or two-way left-turn lane north of Dunes West Boulevard. Additionally, Alternative 7A would result in an improved realigned intersection at SC 41 and Rivertowne Parkway. These changes would require approximately 1.1 acre on the west side of SC 41, adjacent to Rivertowne. The Compromise Alternative would widen SC 41 to a three-lane roadway with a center two-way left-turn lane south of Dunes West Boulevard and would widen SC 41 to a four-lane roadway with a planted median north of Dunes West Boulevard in the vicinity of Rivertowne. These changes would require approximately 1.1 acres on the west side of SC 41, adjacent to Rivertowne.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Rivertowne would experience specific impacts to economic and business conditions. These impacts would be minor and permanent, as discussed in the following section. Additionally, Rivertowne would experience improved mobility and access due to intersection improvements associated with each build alternative. Both alternatives would also improve Rivertowne's access to the sidewalk and new multi-use path. Appendix A presents acreage impacts to individual parcels by build alternative.

4.11.1 Economic and Business Conditions

Each of the build alternatives would affect small portions (less than 1 acre each) of five commercial parcels adjacent to existing SC 41. Three of these parcels currently function as vegetative buffers between commercial and residential properties and SC 41. One of the remaining two commercial parcels functions primarily as a relatively wide vegetative buffer between residential portions of the community and SC 41 but also contains a veterinary clinic and a two-lane access road between Rivertowne Parkway and a grocery store parking lot. The remaining commercial parcel is the location of a grocery store and an associated parking lot.

Overall, Alternative 1, 7A, and the Compromise Alternative's impacts to commercial parcels in Rivertowne are expected to be permanent and minor since the property owners will be able to maintain use of the majority of these commercial parcels and because the impacts would concentrate immediately adjacent to the existing roadway.



Figure 19. Rivertowne Community Resources and the Build Alternatives

4.12 Seven Mile

The Gullah African-American community of Seven Mile is an approximate 973-acre community located to the north and south of US 17 at the southern extent of the study area (Figure 0). Several small roads to the south of US 17 provide access to largely family-held tracts containing single-family homes. Many of the homes and commercial properties fronting US 17 have associated sweetgrass basket stands; a total of 36 are currently extant in the community. The Kingdom Hall of Jehovah's Witnesses church is located within the community, along Dingle Road. The Greater Goodwill AME Church and associated cemetery and the Lighthouse Church Worship Center are two other churches located within the community, to the north of US 17 and west and east of SC 41, respectively. Commercial properties are located at the intersection of US 17 and SC 41 and on either side of US 17, through the northern portion of the community. While not specifically identified by the South Carolina State Historic Preservation Office (SC SHPO) as a traditional cultural property (TCP) due to lack of direct study, Seven Mile consists of several natural and cultural resources to which community members ascribe traditional cultural value. Therefore, HDR assumes NRHP-eligibility of the Seven Mile community.

Both Alternatives 1 and 7A would change the existing two-lane SC 41 in the vicinity of Seven Mile to a five-lane roadway with a center raised island or two-way left-turn lane while the Compromise Alternative would change the existing two-lane SC 41 to a four-lane roadway with a planted median in the vicinity of Seven Mile. Changes to the intersection of SC 41 and US 17 would also occur in the vicinity of Seven Mile. Each build alternative would widen US 17 from a six- to seven-lane roadway with occasional turn lanes to an eight- to ten-lane roadway with occasional turn lanes through the northern portion of the community. The changes would also warrant changes along Hamlin Road and Brickyard Parkway near their intersections with US 17. With Alternatives 1 and 7A, left turns onto Hamlin Road would not be allowed; motorists would be required to make a U-turn at US 17 and Old Georgetown Road. These changes would require approximately 3.8 acres across Seven Mile. Changes associated with the Compromise Alternative would require approximately 4.4 acres across Seven Mile. This would result in a more expansive roadway and larger intersections than currently exist in the community.

In addition to the impacts shared across the study area, as discussed in Section 4.1, Seven Mile would experience specific impacts to economic and business conditions; land use; residential aspects; social, cultural, and psychological aspects, as well as some cumulative effects. These impacts would either be minimized or would be permanent and minor to moderate, as discussed in the following sections. Appendix A presents acreage impacts to individual parcels by build alternative. Overall, the effects of the Project would be made more minimal due to the distance of residences from proposed new ROW, the presence of some vegetative buffers, and the current existence of large roadways within the community. However, the Project is expected to contribute to cumulative effects to the traditional culture of the Seven Mile community. The potential for adverse effects to the NRHP-eligible Sweetgrass Basket Corridor traditional cultural property, a portion of which extends through Seven Mile, is evaluated in the cultural resources report for the Project (Baluha et al. 2019).

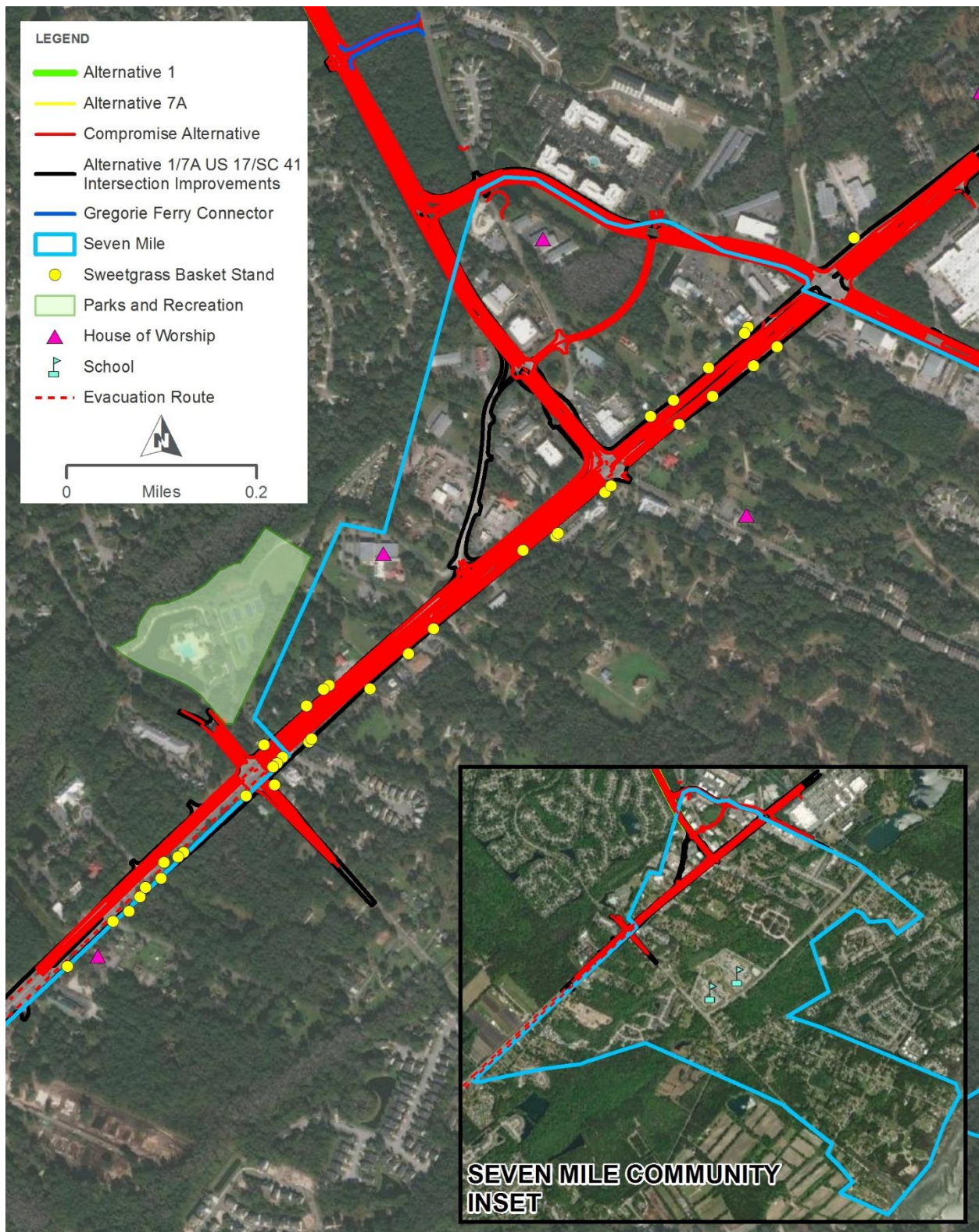


Figure 15. Seven Mile Community Resources and the Build Alternatives

4.12.1 Seven Mile Cultural Landscape

The Seven Mile Cultural Landscape is an NRHP-eligible historic district encompassing the Seven Mile Community, also considered the community settlement area, and several associated community resources (i.e., the Seven Mile Community), including the Sweetgrass Basket Stand Corridor present on US 17, Greater Goodwill AME Church (Figure 21), Garden of Prayer Pentecostal Holiness Church, and Old Cook's Cemetery. Though historical properties such as Cook's Old Field cemetery are important to the history and identity of Seven Mile, this resource lies outside of the Project Area and is not impacted by Project activities. With mitigation measures in place, the overall impacts to community resources within Seven Mile are expected to be minor. Goodwill AME Church is directly on US 17 near the intersection with SC 41. Although not officially recognized as a TCP due to lack of detailed study, Seven Mile consists of several natural and cultural resources to which community members ascribe traditional cultural value. The Seven Mile Cultural Landscape meets NRHP criteria due to its historical and cultural significance as well as its potential to expand our knowledge of local and regional Gullah material culture. Because of the cultural significance of the Seven Mile Cultural Landscape, for the Seven Mile Community, social, cultural, and psychological effects and recurring and cumulative effects are addressed in this section.



Figure 21. Greater Goodwill AME Church

Under the No-Build Alternative, there would be no impacts to the Seven Mile Cultural Landscape. Currently, SC 41 is a reasonably accessible, two-lane highway with an associated approximate 37.5-foot

ROW on either side. SC 41 extends north-south through the Seven Mile Cultural Landscape and associated settlement area composed of family properties. Seven Mile community members would be expected to continue the generations-long cultural practice of crossing SC 41 as pedestrians to access other portions of the Seven Mile Cultural Landscape, including portions of family properties, community gathering places, and natural resource harvesting areas. The cultural practices associated with these community resources would continue to help maintain the traditional culture of the Seven Mile Community and the traditional cultural identities of community members, both of which are key aspects of the community that are supported by the Seven Mile Cultural Landscape.

Direct impacts are expected to the Seven Mile Cultural Landscape in relation to each build alternative. Alternative 1 would require approximately 4.7 acres of ROW from the community due to the addition of two traffic lanes and a center raised island or two-way left-turn lane. Alternative 7A would require approximately 0.6 acre of ROW from the addition of a two-way left-turn lane through the Phillips Cultural Landscape. The Compromise Alternative would require approximately 0.95 acre of ROW from the addition of a two-way left-turn lane through the Phillips Cultural Landscape. The acreage associated with each build alternative ROW would be located adjacent to the existing ROW currently associated with SC 41. The portions of the Seven Mile Cultural Landscape that could be directly affected by the build alternatives include several community resources that contribute to the NRHP significance of the Seven Mile Cultural Landscape including fourteen sweetgrass basket stands on US 17. Overall, direct physical impacts to these community resources associated with the Seven Mile Cultural Landscape located within the proposed new ROW would be avoided or minimized by the Project, as detailed below. The updates associated with the Compromise Alternative would bring construction near 12 residences and 23 commercial properties in Seven Mile. With implementation of the Project, no commercial or residential relocations are expected to be necessary. Thus, no direct physical impacts to residences or other buildings located on family properties in the Seven Mile Cultural Landscape are expected.

Fourteen sweetgrass basket stands were identified during the cultural resources survey for the Project (Baluha et al. 2019) and considered part of the Seven Mile Cultural Landscape (Richardson Seacat 2018). While some of these function as basket-selling stands some may also be used as a gathering place. Both the monetary value of the basket stands and their importance as gathering places are relevant to the traditional cultural landscape that contributes to the NRHP significance of Seven Mile. Impacts to the basket stands would be minimized by relocating the stands outside the proposed new ROW. The city of Mount Pleasant also requires businesses on US 17 to leave room for basket stands outside of their establishment in an effort to create space for this traditional subsistence activity. This requirement aids in the minimization of negative impacts to basket stands. The importance Greater Goodwill AME Church has in the Seven Mile community cannot be overstated. Greater Goodwill was founded in 1836, when African American churches were outlawed in the area. Since then, the church has been a gathering place, a house of worship, and a historical connection to community members' ancestry. Seven Mile community members have expressed concern over an increase in lanes near the Greater Goodwill AME Church which may make turning into the parking lot more difficult, thus resulting in small to moderate impacts to the Seven Mile Cultural Landscape by the Project.

Indirect impacts are also expected to the Seven Mile Cultural Landscape in relation to each build alternative. Indirect impacts were assessed using qualitative factors developed through interviews with community members and stakeholders as well as background research and researcher insights. Alternative 1 would change the two-lane, reasonably accessible roadway to a larger, multi-lane highway with a wider expanse to cross as pedestrians. Alternative 1 may also affect land use in the Seven Mile Community, potentially changing the characteristic rural residential uses to commercial and higher density

developer-designed residential uses. These changes may alter how community members utilize portions of the Seven Mile Cultural Landscape and, in turn, affect how community members interact with one another and, more generally, modify how the community associates with the Seven Mile Cultural Landscape and its associated resources. Thus, Alternative 1 is expected to indirectly alter the traditional culture of the Seven Mile Community and the traditional cultural identities of community members, both of which are key aspects of the community that are supported by the Seven Mile Cultural Landscape. As these changes would affect aspects of the Seven Mile Cultural Landscape that make this historic property eligible for the NRHP, implementation of Alternative 1 would result in an adverse effect to the Seven Mile Cultural Landscape (see Section 1.2 for discussion regarding the federal agency responsibility to consider adverse effects to NRHP properties).

Alternative 7A and the Compromise Alternative would result in the addition of a two-way left-turn lane through the Phillips community, and proposed SC 41 would be rerouted outside of the community, thereby reducing the traffic volume on existing SC 41, at least in the short term. While the Project would increase the expanse of the roadway by one lane, this change is not expected to substantially alter how family and community members interact, and community members are expected to continue to cross the roadway to access other portions of the Seven Mile Cultural Landscape, including portions of family properties, community gathering places, and resource harvesting areas. Additionally, the reduction of traffic volume associated with Alternative 7A and the Compromise Alternative is expected to indirectly nurture one of the community's core cultural values currently supported by the Seven Mile Cultural Landscape: the sense that a close-knit community with members who have feelings of security provides "quality of life" (Richardson Seacat 2018). Overall, implementation of Alternative 7A or the Compromise Alternative is not expected to negatively affect the traditional culture of the Seven Mile Community or the traditional cultural identities of community members and, therefore, would not result in an adverse effect to the Seven Mile Cultural Landscape. Over the long term (25 years or more), traffic volumes are expected to increase to current volumes; however, that projected change with population growth and personal decisions to travel existing SC 41 rather than realigned SC 41 would not be related to the Project.

Cumulative impacts were assessed using qualitative factors developed through interviews with community stakeholders as well as background research. In the past few decades, the area surrounding the Seven Mile Cultural Landscape has changed drastically. Since the 1970s, the Town of Mount Pleasant incorporation limits began to expand to the east (Town of Mount Pleasant 2017). By 1990, areas surrounding the Phillips Community incorporated into the Town and were newly developed, and these changes led to drastic alteration of the area's racial composition. While, in 1930, the population was 77 percent African American, by 1960, African Americans composed only 34 percent of the population. Over time, these compounding changes in the study area, including population growth, changing lifestyles, and a subsequent increase in new residential and commercial developments and roadway projects, such as the widening of US 17 to the south of Phillips in 2013, have affected the traditional culture of the Mount Pleasant area and have also led to the need for the Project. Thus, implementation of Alternative 1, which would expand SC 41 from the current two-lane roadway to five lanes, could contribute to cumulative impacts to the traditional culture and, thus, compound adverse effects to the NRHP-eligible Seven Mile Cultural Landscape.

4.12.2 Economic and Business Conditions

Alternatives 1 and 7A would affect small portions of 30 commercial properties; together these properties total approximately 68.6 acres. Some of these parcels are currently forested or partially cleared undeveloped parcels, while others are developed as commercial properties. Impacted portions of these properties

associated with Alternatives 1 and 7A would be small for each individual parcel (less than 1 acre); together the affected areas of the parcels total 3.8 acres. The Project is not expected to affect the function or potential function of these parcels as commercial properties.

The Compromise Alternative would affect small portions of 23 commercial properties, together totaling approximately 38.2 acres. Some of these parcels are currently forested or partially cleared undeveloped parcels, while others are developed as commercial properties. Impacted portions of these properties associated with the Compromise Alternative would be small for each individual parcel (less than one acre); together the affected areas of the parcels total 3.4 acres. The Project is not expected to affect the function or potential function of these parcels as commercial properties.

An estimated 14 sweetgrass basket stands near the existing sidewalk along US 17 would be either within the proposed new ROW or in close enough proximity to warrant minimization measures. Impacts to the sweetgrass basket stands would be minimized by relocating the stands outside the proposed new ROW. The increased traffic volume along US 17 is expected to increase commercial opportunities for sweetgrass basket stand owners and other business owners in the community.



Sweetgrass Basket Stand 32 (facing northeast)

Overall, Project impacts to commercial parcels in Seven Mile are expected to be permanent and minor because the impacts would concentrate immediately adjacent to the existing roadway and would not affect their function. In addition, offsetting beneficial impacts would occur to these commercial resources, as increased traffic through the community could benefit existing businesses and potential commercial properties.

4.12.3 Community Resources

Alternatives 1, 7A, and the Compromise Alternative would affect access to Greater Goodwill AME Church and Garden of Prayer Pentecostal Holiness Church. Both of these are important gathering places to the people of Seven Mile.

Goodwill AME Church is directly on US 17 near the intersection with SC 41. Turning into the church parking lot is currently difficult due to fast moving traffic on US 17. An increase in lanes may make access to the Church more difficult, though a turning lane may mitigate some of these impacts. Similar impacts are anticipated to the Garden of Prayer Pentecostal Holiness Church, which is also situated on US 17, further east of the intersection with SC 41 than Greater Goodwill. Without turn lanes the impacts to these community resources are anticipated to be moderate, though turning lanes may result in minor to negligible impacts to these resources.

4.12.4 Land Use

Alternatives 1, 7A, and the Compromise Alternative would alter land uses along existing Winoing Way, in the extreme northeast portion of Seven Mile. In one location, existing Winoing Way would be straightened and would change land use in that location from undeveloped commercial to transportation uses. This impact to land use is expected to be permanent and minor, as the affected area is surrounded by commercial properties.

4.12.5 Residential Aspects

Alternatives 1 and 7A would affect small portions of 20 residential parcels; together these developed or vacant residential parcels total in their entirety 13.5 acres. Impacts to these parcels would be along existing roadways, and individual parcel impacts would be less than 0.2 acre; all together, changes associated with Alternatives 1 and 7A would impact a total of 0.6 acre associated with these parcels. The Compromise Alternative would affect small portions of 12 residential parcels. Together, these developed or vacant residential parcels total in their entirety 12.7 acres. Impacts to these parcels would be along existing roadways, and individual parcel impacts would be less than 0.1 acre; all together, changes associated with the Compromise Alternative would impact a total of 0.9 acre associated with these parcels. Based on modern aerial and street views, residences in Seven Mile are typically setback from existing roadways, and generally, some trees exist between the residences and the roadway to help buffer the effects of the Project.

Overall, while Project effects would occur to a large number of community members scattered across the community, these effects would generally be minor due to the distance of residences to the proposed new ROW, the presence of vegetative buffers, and the current existence of large roadways throughout the community. Where these conditions differ and substantial setbacks or vegetative buffers do not exist, the effects to residential parcels would be moderate. Unlike the Phillips Community, some parcels associated with Seven Mile families appear to be subdivided already meaning that residences in Seven Mile are likely a mix of heir's property and formally divided lots. Negative effects to residential parcels in Seven Mile are not expected to be exacerbated by the prominence of heirs' property in the community due to the effects from the Project being more minimal and unlikely warranting self-elected relocations.

4.12.6 Social, Cultural, and Psychological Aspects

The relocation of an estimated 14 sweetgrass basket stands as a result of the Project is expected to indirectly alter the traditional culture of the Seven Mile community and the traditional cultural identities and individual psychologies of community members. These effects are expected to result in moderate impacts in Seven Mile.

4.12.7 Recurring and Cumulative Effects

The widening of US 17 in the vicinity of the Project, completed in 2013, improved accessibility and led to altered residential and commercial development in the area. In particular, more commercial and planned residential development was spurred by the widening project. That project also resulted in the loss of portions of family properties in Seven Mile and the loss or relocation of some associated sweetgrass basket stands. The currently proposed Project would widen SC 41 and improve the intersection of SC 41 and US 17. These changes from the Project could stimulate more commercial and developer-designed residential development in the vicinity of Seven Mile and contribute to the displacement of long-term community members.

4.13 Cainhoy

The Cainhoy community is an approximate 1,033-acre community located to the north of the Wando River at the northern extent of the study area in Berkeley County (Figure 16). As discussed previously, portions of Cainhoy were settled by freed African Americans following the Civil War. Larger roads that pass through the community include SC 41, Clements Ferry Road, Cainhoy Road, and Reflectance Road. Several smaller roads branching off of these roads provide access to single-family homes. A large townhouse neighborhood is located to the north of Clements Ferry Road and southeast of Reflectance Road. Several commercial developments are present within the community, most notably at the intersection of Clements Ferry Road and Cainhoy Road. Saint Peters African Methodist Episcopal Church is located in the western portion of Cainhoy, along Fogarty Lane. Wando Baptist Church is located in the eastern portion of Cainhoy, along Reflectance Road. Two fire stations are extant in the community along Cainhoy Road, north of Clements Ferry Road. The Cainhoy Historic District, composed of nine mid-eighteenth century to early twentieth century buildings that were part of an early river port and ferry community that connected Berkeley County and Charleston, is extant in the southern portions of Cainhoy, along the northern banks of the Wando River. The Francis Marion National Forest is located to the north and east of the Cainhoy community. A 9,000-acre master-planned, mixed-use development known as Cainhoy Plantation is proposed near the study area on Clements Ferry Road in Berkeley County. Two schools have been constructed as part of the development.

Alternative 1, 7A, and the Compromise Alternative would tie into Clements Ferry Road within the Cainhoy community. As the community is located to the north of expected changes, no direct impacts to Cainhoy or its resources are expected to result from the Project. However, like the other communities in the study area, Cainhoy would experience the impacts shared across the study area, discussed in Section 4.1.

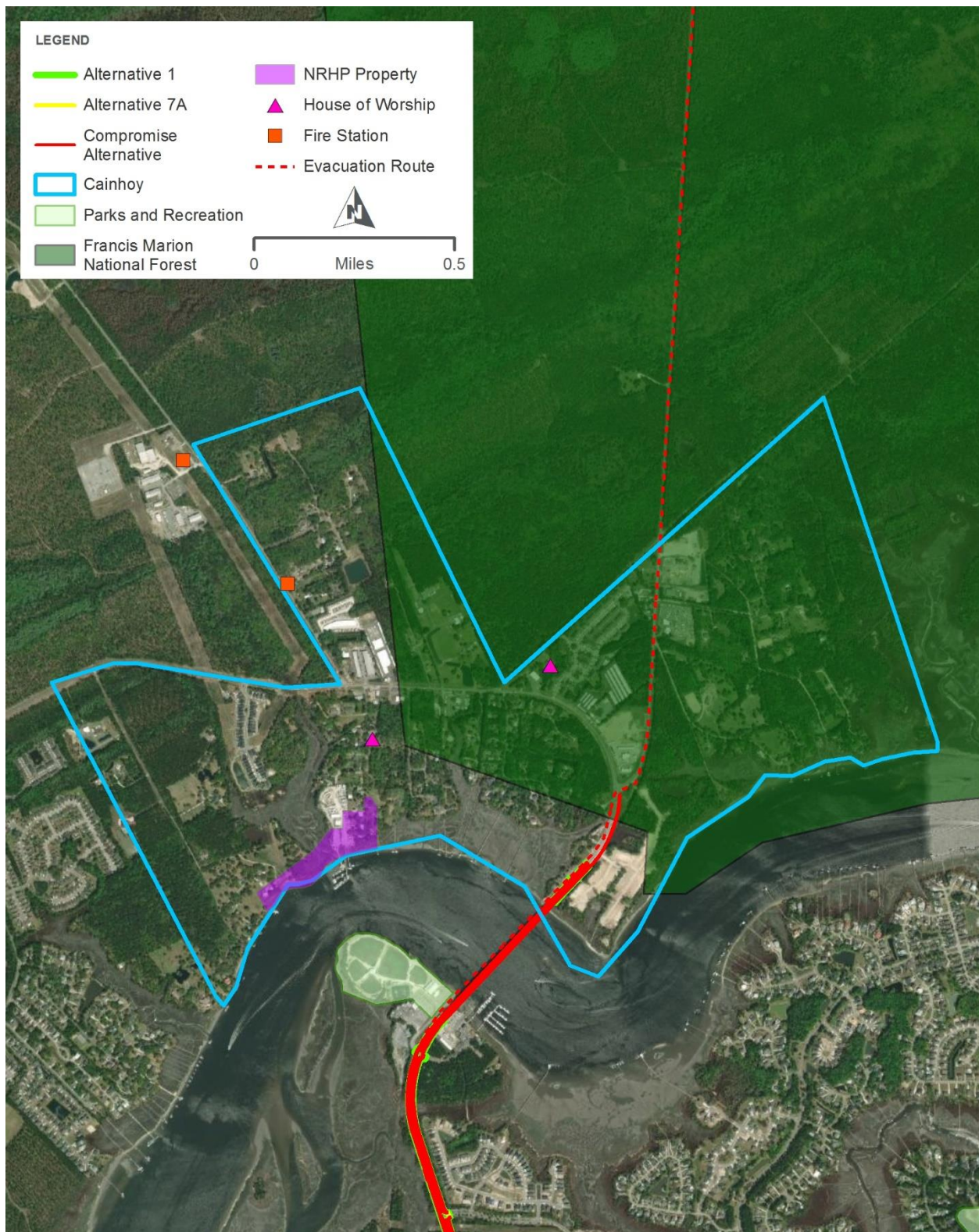


Figure 16. Cainhoy Community Resources and the Build Alternatives

5.0 Synthesis and Conclusions

5.1 Summary of Impacts

Table 2 provides a comparison of impacts across all communities in the study area and per build alternative. The table highlights that, depending on alternative, minor to major impacts are expected in the Phillips Community, and minor to moderate impacts are expected in Dunes West, Park West, and Seven Mile. All other communities except Cainhoy would experience minor effects. Cainhoy is not expected to experience any direct effects from the Project. While Table (presented in Section 4.0) shows that Dunes West would experience the highest acreage losses of any community, these effects are made more minimal due to the substantial setback of residential portions of this community and the wide vegetative buffers that were retained by developers.

Table 2. Comparison of Overall Community Impacts by Build Alternative

| Community | Alt 1 | Alt 7A | Compromise Alt |
|------------------------------|-------------------|-------------------|-------------------|
| Brickyard / Colonnade | Minor | Minor | Minor |
| Cardinal Hill | Minor | Minor | Minor |
| Dunes West | Minor | Minor to Moderate | Minor |
| Gregorie Ferry | Minor | Minor | Minor |
| Horlbeck Creek | Minor | Minor | Minor |
| Ivy Hall | Minor | Minor | Minor |
| Park West | Minor | Minor to Moderate | Minor to Moderate |
| Phillips Community | Moderate to Major | Minor | Minor to Moderate |
| Planter's Pointe | Minor | Minor | Minor |
| Rivertowne | Minor | Minor | Minor |
| Seven Mile | Minor to Moderate | Minor to Moderate | Minor to Moderate |
| Cainhoy | No direct effects | No direct effects | No direct effects |

Based on the assessment factors outlined in Section 2.4, impact severity ratings range from minor to moderate in Dunes West due to some moderate effects occurring at “the pastures” and one residential parcel in association with Alternative 7A, while minor effects would be felt in other portions of the community near the Project. Impact severity ratings likewise range from minor to moderate in Park West due to some moderate effects occurring at townhome complexes situated near existing roadways in association with Alternative 7A and the Compromise Alternative, while minor effects would be felt in other portions of the community near its western extent. In the Phillips Community, the impact severity ratings range from moderate to major in association with Alternative 1 and minor to moderate in association with

the Compromise Alternative, due to the numbers of impacted residential parcels and their wide distribution across the community and, thus, family properties; the lack of distance of many residences on affected parcels from the proposed new ROW; and depending on the legal status of affected parcels as heirs' properties. In Seven Mile, the impact severity ratings range from minor to moderate with each build alternative, due to a potentially increased difficulty in turning into the Greater Goodwill AME Church as a result of lane additions. The numbers of impacted residential parcels, and their wide distribution across the community must also be considered; however, these effects are generally made more minimal in Seven Mile due to substantial setback of residences from existing roadways, the presence of some vegetative buffers, and the current existence of large roadways within the community.

5.2 Offsetting Benefits of the Alternatives

The purpose of the Project is to accommodate an increase in traffic volume and system continuity throughout the Project limits. SC 41 from US 17 to Clements Ferry Road serves as a minor arterial that has experienced an increase in traffic due to regional growth and currently sustains operations that exceed capacity and are projected to worsen over time (see the Environmental Report for the Project).

Overall, Project implementation would potentially cause a positive impact to economic and business conditions in the study area, with concentrated effects in areas surrounding the selected build alternative. Within the study area, general mobility and access to individual commercial and residential properties and residential developments would be improved with implementation of each build alternative. Generally, Alternative 1 would positively affect mobility and access along existing SC 41, while Alternative 7A and the Compromise Alternative would positively affect mobility and access along existing SC 41 as well as along existing Dunes West Boulevard, Park West Boulevard, and Bessemer Road. These changes are expected to, in turn, increase patronage of businesses in the vicinity of the selected build alternative. The Project is also expected to improve public health and safety across the study area. Public health and safety are expected to be improved due to emergency vehicles being able to navigate the study area more efficiently and effectively, and emergency facilities and recreational resources would be accessed more efficiently and safely. In addition, the Project has the potential to generally improve public health in the study area with the addition of bicycle and pedestrian pathways along the selected corridor.

5.3 Next Steps

Next, potential measures to address direct community impacts will be identified. Potential mitigation measures will be developed through data collected during public engagement opportunities and/or direct community contact, such as through phone and in-person meetings and/or focused interviews. Four primary methods to address direct impacts will be considered, including avoidance, minimization, mitigation, and enhancement. If appropriate, HDR will make recommendations regarding mitigation measures that would help alleviate or offset an impact or replace an affected community resource. Project enhancements that would add a desirable or attractive feature and thus result in the Project being more fitting with the community will also be considered and developed, as appropriate. Throughout this process, HDR will take into account the potential for additional adverse impacts to emerge through the mitigation process. If additional impacts are identified, HDR will address these by engaging the same process.

Mitigation measures will be addressed in the community mitigation plan, to be appended in future drafts of this report. Developing strategies for community mitigation will initially involve working with the Project engineers to alter the design to avoid or minimize impacts and/or to identify enhancement opportunities to make the Project fit better with existing communities. Once the design is finalized and the most affected

communities are identified, the Project community analysts will meet with representatives of the affected communities to identify avoidance and minimization options and to develop effective solutions to address adverse impacts.

6.0 References

Baluha, David, Sheldon Owens, Lannie Kittrell, and Charles Philips, Jr. 2019. Cultural Resources Survey of the SC 41 Corridor Improvements Project, Berkeley and Charleston Counties, South Carolina, Revised Draft Report, April 2019. Prepared by Brockington and Associates, Inc. for HDR.

BCDCOG. 2017. BCDCOG Travel Demand Model for the SC Highway 41 Corridor Improvements Project. Prepared by Stantec, North Charleston.

_____. 2020. Updates to BCDCOG Travel Demand Model for the SC Highway 41 Corridor Improvements Project. Prepared by Stantec, North Charleston.

Charleston County Park & Recreation Commission. 2017. Laurel Hill County Park. Accessed September 13, 2017. <https://www.ccprc.com/2005/Laurel-Hill-County-Park>.

Dunes West Golf Club. 2019. Non-Resident Memberships at Dunes West Golf & River Club. Retrieved from <http://www.duneswestgolfclub.com/-non-resident-memberships>

Dunes West Property Owners Association. 2015. Third Quarter Newsletter. Accessed June 14, 2019. <http://www.dunes-west.com/ResourceCenter/Download/25531~1614842?view=1>

Environmental Protection Agency (EPA). 2017. Environmental Justice Screening and Mapping Tool. Accessed November 29, 2017. <https://ejscreen.epa.gov/mapper/>

ESRI World Imagery. 2017. Accessed Fall 2017.

Federal Emergency Management Agency (FEMA). 2007. Definitions of NFIP Terms. Retrieved from 44 CFR Section 59.1 of the NFIP Regulations: https://www.fema.gov/media-library-data/20130726-1622-20490-9635/section59_1.pdf

Federal Highway Administration (FHWA). 2018. Community Impact Assessment: A Quick Reference for Transportation, 2018 Update. Office of Environment and Planning. Prepared by North Carolina DOT, California DOT, Florida DOT, Maine DOT, Columbus, GA Department of Community & Economic Development, Maryland State Highway Administration, Arkansas State Highway & Transportation Department, and Illinois DOT in consultation with Apogee Research, Inc. and Parsons Brinckerhoff Quade Douglas, Inc.

Google. 2017. Maps. Accessed Fall 2017. <http://www.google.com>.

HDR. 2022. Environmental Report: SC Highway 41 Corridor Improvements Project, Charleston and Berkeley Counties, South Carolina. Prepared by HDR for Charleston County.

HDR. 2020. Community Characterization: SC Highway 41 Corridor Improvements Project, Charleston and Berkeley Counties, South Carolina. Prepared by HDR for Charleston County.

Richardson Seacat, Harriet L. 2018. "Quality of Life": A Traditional Cultural Property Study of the Phillips Community, Mount Pleasant Vicinity, Charleston County, South Carolina. Prepared by HDR for Charleston County.

Thomas & Hutton. 2016. Design Review for Phillips Community Drainage Improvements, Charleston County, South Carolina. Prepared by Thomas & Hutton for Charleston County.

Town of Mount Pleasant. 2017. A Brief History of Mount Pleasant. Retrieved from <https://www.tompsc.com/236/A-Brief-History-of-Mount-Pleasant>

_____. 2019. Park West Recreation Complex. Retrieved from <https://www.tompsc.com/Facilities/Facility/Details/29>

U.S. Census Bureau (USCB). 2021. Income and Poverty in the United States: 2020. Report Number P60-273. Accessed July 2022. <https://www.census.gov/library/publications/2021/demo/p60-273.html>.

_____. 2022. Explore Census Data. [Online Database]. Accessed July 2022. <https://data.census.gov/cedsci/>.

_____. 2015. "2011-2015 American Community Survey 5-Year Estimates". American FactFinder. Accessed Fall 2017. <http://www.census.gov/>.

_____. 2016. Income and Poverty in the United States: 2015. Report Number P60-263. <https://www.census.gov/content/dam/Census/library/publications/2016/demo/p60-256.pdf>.



Appendix A – Affected Parcels



This page intentionally left blank





Charleston County
Transportation Development

4045 Bridge View Drive, Suite C204, North Charleston, SC 29405

www.hwy41sc.com