



MEMO

Project: Charleston County SC 41 Corridor Improvements

Subject: Screening of Alternative 5A

To: Cal Oyer, PE – Charleston County
Ivan Fannin III – US Army Corps of Engineers, Charleston District

From: HDR Inc.

Date: Wednesday, February 06, 2019

Introduction

Charleston County proposes improvements to the approximately 4.6-mile-long SC Highway 41 (SC 41) corridor in Charleston and Berkeley Counties, South Carolina from US 17 in Mt. Pleasant, South Carolina across the new Wando River Bridge to Clements Ferry Road. 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 purpose of the proposed project is to accommodate an increase in traffic volume by improving roadway capacity and system continuity throughout the corridor.

Charleston County is evaluating the benefits and impacts from the proposed project, in accordance with the *National Environmental Policy Act* (NEPA). The purpose of this memo is to describe Alternative 5a and the associated screening criteria, and present a recommendation to Charleston County on alternatives that should be carried forward for detailed analysis in the Environmental Assessment (EA). Charleston County and the project team will submit a detailed alternatives analysis as part of the EA, which will be included with a Clean Water Act Section 404 permit application to the U.S. Army Corps of Engineers (USACE). After submittal of the permit application, the USACE will consult with Charleston County, federal and state agencies, and public to provide formal comments on the alternatives analysis process.

Screening Process

In its evaluation of permit applications, the USACE is required to analyze alternatives to the proposed project that achieve its purpose. USACE conducts this analysis pursuant to two main requirements: the 404(b)(1) Guidelines (40 CFR Part 230) and NEPA (33 CFR Part 325 Appendix B and 40 CFR 1508). Complex projects, such as SC 41 Corridor Improvements, usually require several levels of screening. Coarser screens are typically applied at the beginning of a project to eliminate clearly impracticable and unreasonable alternatives. Practicable is defined as meaning the alternative is available, and capable of being done after taking into consideration cost, existing technology, and/or logistics in light of the overall project purpose(s). An alternative needs to fail only one practicability factor to be eliminated during the screening process.

A summary of the screening process for SC 41 Corridor Improvements Project is presented in Figure 1. At the beginning of the project, the project team identified 12 alternatives based on preliminary traffic studies, regional planning documents, community and stakeholder working group meeting, and agency input. During Screening 1, Alternatives 1, 2, and 7 were identified as reasonable alternatives based on their ability to meet purpose and need for improving traffic operations, During Screening 2, the project team refined the reasonable alternatives based on public input and detailed traffic analysis. This refinement process resulted in the addition of modified alternatives 2a, 5a, and 7a. Alternatives 1, 2, 2a, 5a, 7, and 7a were considered during Screening 2.

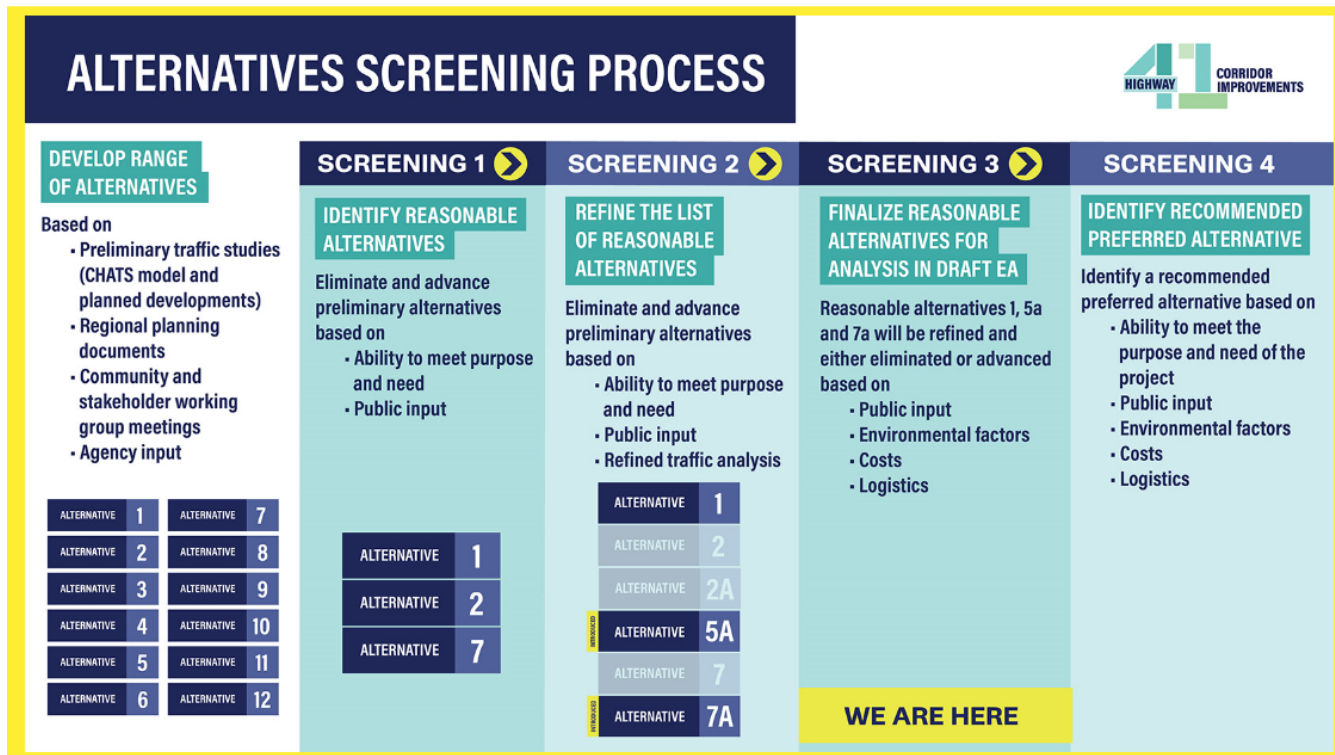


Figure 1. Alternatives Screening Process

While Alternative 5 was determined to not meet the project purpose and need for traffic operations in Screening 1, as a result of public comment received, the project team re-evaluated Alternative 5 in an effort to look at alternate ways to distribute traffic in the area. Alternative 5 had initially considered 2 lanes along a transmission line easement, which did not meet the purpose and need of the project to improve traffic operations along SC 41. During the May 16 to June 16, 2018 public comment period, the County received correspondence from stakeholders, including members from the Phillips Community and the South Carolina Coastal Conservation League that stressed the importance of considering alternatives that minimize impacts to environmental and cultural resources, including the Phillips Community. This correspondence asked about the possibility of a 5-lane alternative along the transmission line easement. Based on stakeholder input, the project team added Alternative 5a to Screening 2 for consideration.

Alternative 5a would create a parallel five-lane roadway primarily along the existing SCE&G power line easement running from Highway 17, through Ivy Hall, Laurel Hill County Park, Dunes West and tying into Highway 41 near Harpers Ferry Way. As shown below, traffic analysis shows that Alternative 5a meets the project purpose and need of improving traffic operations and congestion on SC 41.

The project is currently within the Screening 3 phase. The goal of Screening 3 is to finalize reasonable alternatives for analysis in the draft EA. Reasonable Alternatives 1, 5a, and 7a will be refined and either eliminated or advanced based on public input, environmental factors, cost, and logistics. The purpose of this memo is to describe Alternative 5a and the associated screening criteria.

Alternative 5A Screening

The following presents a summary of Alternative 5a in relation to the following screening criteria: ability to meet purpose and need, public input, environmental factors, cost, and logistics.

Ability to Meet Purpose and Need

In order for a project that requires a federal action to be constructed, the project's design scope must be established in accordance with the NEPA process. The purpose and need statement was developed with the project team and stakeholder agencies and is a required step to help guide the project and set objectives.

- The primary purpose of the proposed SC 41 Corridor Improvements project is to reduce traffic congestion within the SC 41 corridor to accommodate future traffic projections.
- The secondary purposes of the proposed SC 41 Corridor Improvements 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.
- The proposed project is needed to address anticipated local and regional growth, increased traffic congestion, safety and emergency response concerns, and inadequate interconnections of transportation modes, including pedestrian and bicycle facilities.

Alternative 5 modeled a two-lane roadway from US 17 to the Wando River Bridge and did not meet the purpose and need for traffic operations. Following the public meeting in May 2018, stakeholders asked whether the project team had considered Alternative 5 with a five-lane section. Upon modeling Alternative 5 with a five-lane section, it was determined that this alternative would meet the primary purpose and need of improving traffic operations and congestion. As shown in Figure 2, the traffic along existing SC 41 would operate at a Level of Service (LOS) D, and operates at a LOS B along the new parallel roadway. Based on this additional traffic analysis, Alternative 5a was advanced to Level 3 for additional screening for logistics, costs, and environmental impacts.



Figure 2. Level of Service for Alternative 5a

Logistics

SCE&G: The project team consulted with South Carolina Electric & Gas (SCE&G) about the possibility of positioning Alternative 5a within/adjacent to their power line easement. The easement contains three SCE&G owned utilities (8" pressurized gas line, electrical transmission, and electrical distribution) and a Mount Pleasant Waterworks 12" force main. SCE&G will not allow a road in their transmission line right-of-way (ROW) and does not allow parallel encroachments within 10-feet of their pressurized gas line. Alternatives may cross the SCE&G ROW. If Alternative 5a was constructed within the easement, or parallel to the easement, the County would be responsible for utility relocation, which would have adverse impacts to the overall project cost and schedule.

CCPRC: The proposed route of Alternative 5a passes through Charleston County Parks and Recreation Commission's (CCPRC) Laurel Hill County Park. Information on Alternative 5a was presented to CCPRC in a meeting on December 19, 2018. CCPRC has a 100-year lease on the Laurel Hill property that has been paid in full. CCPRC has an agreement with the property owner trust, with the trust's intent to have the land remain a natural area. Current park use is passive and master plans have not been finalized for the park, although preliminary plans exist. Based on the initial meeting with CCPRC, Alternative 5a would bisect the park and prevent CCPRC from using the property for its intended use as a park. CCPRC indicated a preference to minimize impacts to Laurel Hill County Park by aligning the road with park boundaries or along existing roadways. CCPRC submitted an official response letter on January 28, 2019, reiterating their preference of Alternative 7a over Alternative 5a. CCPRC stated that Alternative 5a would fragment the contiguous wildlife habitat the park provides and it would potentially jeopardize archaeological resources in the area, including artifacts from Laurel Hill Plantation slave row and a cemetery where enslaved persons and ancestors of Phillips Community residents are known to be buried. Alternative 7a; however, would allow CCPRC to operate the park as the public have become accustomed to and it would minimize impacts to natural and cultural resources.

Costs

Utility relocations for Alternative 5a are expected to cost approximately \$27 million, which is substantially greater than utility relocation costs associated with Alternative 1 at \$6,275,000 and Alternative 7A at \$5,275,000. The increased utility relocation costs for Alternative 5a are a result of this alignment's location within a SCE&G utility easement, and would include the purchase of new easement for the relocated utilities. Because of increased wetland impacts, Alternative 5a would also result in greater mitigation costs.

Environmental Factors

The project team used publically available, Geographic Information System (GIS) data to evaluate potential environmental impacts of the reasonable alternatives. Environmental impacts consider project effects to both the natural environment and communities. Table 1 provides a summary of the environmental screening for Alternatives 1, 5a, and 7a. The project team also evaluated shifts in the Alternative 5a alignment to avoid and minimize impacts to the SCE&G power line easement; however, these shifts resulted in greater impacts than Alternative 5a.

Of the three remaining alternatives, Alternative 5a has the greatest amount of possible full property acquisitions, acres of impact to tidal and non-tidal wetlands, fragmentation of contiguous forest and wetland habitats, and impacts to Laurel Hill County Park. Alternative 5a has the least amount of possible partial acquisitions, impacts to parcels within the Phillips Community and National Register of Historic Places (NRHP) structures, floodplains, and hazardous materials sites.

Table 1. Environmental Screening Table

Environmental Screening Criteria	Units	Alternative 1	Alternative 5a	Alternative 7a
Total Property Impacts (includes Phillips Community)				
Possible Full Acquisitions (impacts >50%)	Number of Parcels	7	13	4
Possible Partial Acquisitions (impacts <50%)	Number of Parcels	175	72	195
Phillips Community				
Possible Full Acquisitions (impacts >50%)	Number of Parcels	3	0	0
Possible Partial Acquisitions (impacts <50%)	Number of Parcels	82	0	75
Cultural and Historic Sites				
NRHP Archaeological Sites	Number of Sites	1	2	1
NRHP Historic Structures	Number of Sites	6	0	3
Sweetgrass Basket Stands	Number of Sites	12	4	12
Wetland Impacts				
Estuarine (Tidal)	Acres	1.2	4.5	1.2
Freshwater (Non-Tidal)	Acres	3.4	5.9	5.9
Floodplain Impacts	Acres	63.2	43.8	71.1
Laurel Hill County Park	Acres	1	16.8	13.6
Hazardous Materials Sites	Number of Sites	4	1	4

Public Input

In a letter dated June 8, 2018, the Coastal Conservation League (CCL) urged the County to pursue an alternative that has the most minimal impact to environmental and cultural resources and the greatest ability to provide multi-modal transportation opportunities. The CCL supports Alternative 7 as “...the most equitable solution that enables the highest level of traffic dispersion without negatively impacting only one single community.” Largely due to the response letter from the Coastal Conservation League and comments from stakeholders, the team re-evaluated Alternative 5 in an effort to look at alternate ways to distribute traffic in the area, which resulted in the creation of Alternative 5a.

A stakeholder meeting was held on November 14, 2018 to provide an update on the alternatives analysis. During this meeting, Alternatives 1, 2, 5a, and 7a were discussed, and the refined reasonable alternatives 1, 5a, and 7a were identified as the alternatives that would be moved forward.

Since the November 14, 2018 stakeholder meeting, a total of 255 comments have been received. As shown in Figure 3, a total of 143 of these comments (56 percent) pertain to Alternative 5a.

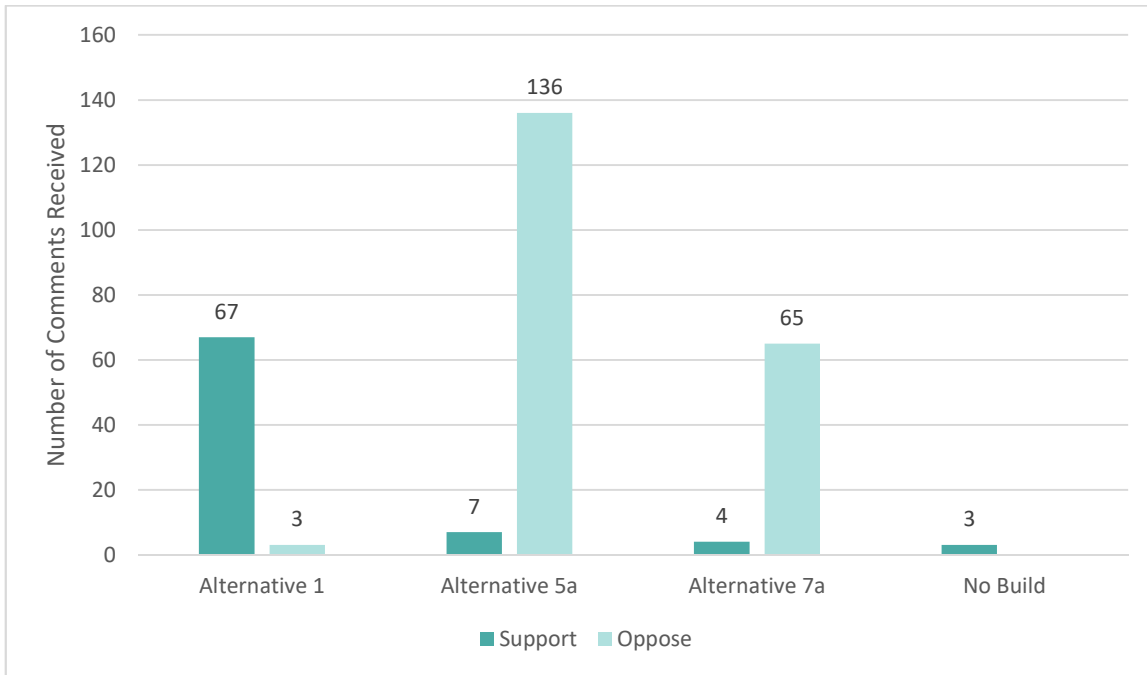


Figure 3. Comment Stances on Alternatives

Conclusion

Based on the results of the environmental factors, costs, logistics, and public input, the project team recommends the elimination of Alternative 5a from the SC 41 Corridor Improvements project. The project team recommends the continued evaluation of Alternative 1 and 7a in the EA. The public will continue to have opportunities to provide feedback on the alternatives at stakeholder and community meetings in early 2019, and public meetings in summer 2019.