

New Hanover County
SR 1175 (North Kerr Avenue)
Bridge Nos. 1 & 2 over
Spring Branch and Smith Creek
State Project 6.503228
B-2059 & B-2156

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CATEGORICAL EXCLUSION
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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1/17/91
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Division Administrator, FHWA

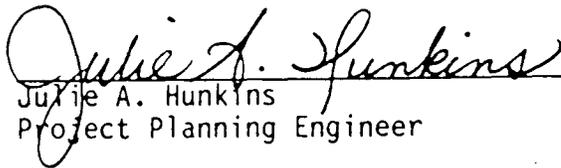
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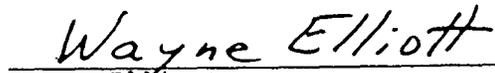
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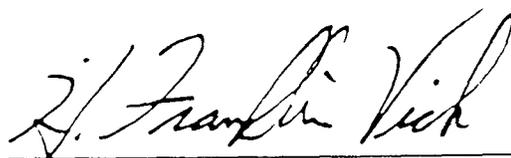
CATEGORICAL EXCLUSION

December, 1990

Documentation Prepared in
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Bridge Nos. 1 and 2 have been included in the 1991-1997 Transportation Improvement Program for replacement. Only minor environmental impacts are anticipated. The project has been classified as a "categorical exclusion".

I. SUMMARY OF RECOMMENDATIONS

Bridge No. 1 over Spring Branch (B-2059) is to be replaced at its existing location with a double barrel 11' x 7' reinforced concrete box culvert as shown in Figure 2. The structure will be of sufficient length to accommodate a 24-foot pavement with 8-foot useable shoulders. Traffic is to be maintained on-site by constructing a temporary detour east of the existing structure. The estimated replacement cost, based on current prices, is \$ 456,000. The cost of the project, as contained in the 1991-1997 Transportation Improvement Program, is \$ 456,000.

Bridge No. 2 over Smith Creek (B-2156) is to be replaced on new location approximately 45 feet west of its present location as shown by Alternate 2 in Figure 2. The recommended replacement structure is a bridge with a length of about 120 feet and a clear roadway width of 40 feet. A 24-foot travelway will be provided throughout the length of the project with 8-foot shoulders on the structure and 8-foot useable shoulders on the approaches. Traffic is to be maintained on the existing structure during the construction period. The existing sharp curvature of the roadway, which has contributed to several accidents in recent years, will be reduced by this new alignment. The estimated replacement cost, based on current prices, is \$ 709,000. The cost of the project, as contained in the 1991-1997 Transportation Improvement Program, is \$305,000.

All standard procedures and measures will be implemented to avoid and minimize environmental impacts. No special or unique environmental commitments are necessary. Approximately 0.15 acre of wetlands will be disrupted by the replacement of Bridge No. 1 (B-2059) and 0.5 acre of wetlands with the replacement of Bridge No. 2 (B-2156). Best Management Practices will be utilized to minimize these impacts.

II. EXISTING CONDITIONS

SR 1175 (North Kerr Avenue) is classified as an urban minor arterial in the Statewide Functional Classification System and is part of the Federal-Aid System (FAS-7196). The route is also designated a major thoroughfare in the Wilmington Thoroughfare Plan (see Figure 5). The route serves an area in New Hanover County north of Wilmington near the

New Hanover County Airport. The bridges are located at the northern city limits of Wilmington. Development in the vicinity of the bridges is scattered residential and primarily wooded. The area south of the project site is becoming suburban in nature.

In the vicinity of the bridges, SR 1175 has a pavement width which varies from 19 to 24 feet with 8-foot to 10-foot shoulders. The approaches to Bridge No. 1 are tangent. Bridge No. 2 is located on a ± 13 -degree curve extends from 200 feet south of the structure to 300 feet north of the bridge (see Figure 2).

The current traffic volume on SR 1175 in the vicinity of the bridges is 7,000 VPD and is expected to increase to approximately 12,600 VPD by the year 2010. The projected volume includes 1% truck-tractor semi-trailer (TTST) and 2% dual-tired vehicles (DTT).

The posted speed limit south of Bridge No. 1 is 45 MPH. The posted speed limit reduces to 35 MPH at the city limits at Bridge No. 1 and continues for a distance of 0.5 mile to just north of Bridge No. 2 where the roadway becomes tangent. The speed limit is 45 MPH north of Bridge No. 2. An ordinance for reduction in the posted speed limit from 45 MPH to 35 MPH was established in November, 1984 as a result of numerous accidents which occurred in the vicinity of the sharp curve over Bridge No. 2.

Bridge No. 1 (see Figure 3) crosses Spring Branch, while Bridge No. 2 (see Figure 4) crosses Smith Creek. The two studied bridges are spaced about 880 feet apart. Each bridge consists of a reinforced concrete floor on I-beams with reinforced concrete caps and timber piles. Characteristics of the bridges are as follows:

	<u>Bridge No. 1</u>	<u>Bridge No. 2</u>
Length (feet)	41	82
Clear Roadway Width (feet)	24.0	24.0
Year Constructed	1950	1950
Weight Limit (tons)		
SV	24	23
TTST	29	27
Sufficiency Rating	13.4	5.0

Fourteen accidents have been reported in the vicinity of the project during a period from January, 1987 to April, 1990. All of these accidents are attributed to the sharp curvature of the roadway at Bridge No. 2 over Smith Creek. One fatality occurred during this period; however, since August, 1984, a total of four fatalities have occurred at this location.

Coordination with the transportation director for New Hanover County school system indicates a total of 42 school buses travel through the project site daily.

III. ALIGNMENT ALTERNATIVES

Bridge No. 1 (B-2059) should be replaced at its present location with a double barrel 11' x 7' reinforced concrete culvert as shown in Figure 2. The culvert should be of sufficient length to accommodate a 24-foot travelway with 8-foot useable shoulders. Traffic should be maintained on-site during the construction period by provision of a temporary detour east of the existing structure. The temporary detour will be comprised of three 72-inch corrugated metal pipes to accommodate the flow of Spring Branch. Consideration was given to providing an extra-length culvert to maintain traffic; however, the cost was determined to be greater than the cost of the recommended permanent structure and on-site detour. No other alternatives for the replacement of Bridge No. 1 were considered since traffic must be maintained on-site during the construction period due to the high traffic volume and the lack of a suitable detour route.

Two alternates were studied for the replacement of Bridge No. 2 over Smith Creek (B-2156). Each of the alternates consist of a replacement structure 40 feet wide and about 120 feet long. These alternates accommodate a 24-foot pavement through the project with 8-foot shoulders on the replacement structure and 8-foot useable shoulders on the approaches. In each case, it was assumed traffic would be maintained on-site during the construction period for the same reasons as sited above. The alternates studied are as follows:

Alternate 1 - Replacement of structure in existing location (see Figure 2). This alternate would retain the existing ± 13 -degree curve and a design speed of about 35 MPH. Traffic would be maintained on-site during the construction period by constructing a temporary detour approximately 45 feet west of the existing structure. The temporary detour would consist of three 102-inch corrugated metal pipes.

Alternate 2 (Recommended) - Replacement of structure on new location approximately 45 feet west of its existing location (see Figure 2). About 900 feet of new approach roadway will be necessary to reduce the existing sharp curvature of the roadway. A design speed of 45 MPH will be provided. Traffic will be maintained on the existing structure during the construction period.

In addition to the alternative alignments that were studied, consideration was given to the "do-nothing" and the "rehabilitation" alternatives. The "do-nothing" alternative would eventually necessitate closure of the bridges. This is not prudent due to the traffic service provided by SR 1175. "Rehabilitation" of the old bridges is not feasible due to their age and deteriorated condition.

IV. ESTIMATED COSTS

The estimated costs of the studied alternates for the replacement of Bridge No. 1 (B-2059) and Bridge No. 2 (B-2156) are as follows:

	<u>B-2059</u> <u>Bridge No. 1</u>	<u>B-2156</u> <u>Bridge No. 2</u>	
		<u>Alternate 1</u>	<u>Recommended</u> <u>Alternate 2</u>
Structure	\$ 75,000	\$309,000	\$309,000
Roadway Approaches	47,700	31,500	266,500
Structure Removal	6,300	12,500	12,500
Detour Structure & Approaches	246,000	321,000	--
Engineering & Contingencies	56,000	101,000	88,000
Right of Way	<u>25,000</u>	<u>28,000</u>	<u>33,000</u>
	\$456,000	\$803,000	\$709,000

V. DISCUSSION OF RECOMMENDED IMPROVEMENTS

Bridge No. 1 will be replaced at its existing location while Bridge No. 2 will be relocated about 45 feet west of its existing location as shown in Figure 2. The design speed provided by the improvements to these structures is 45 MPH. In each case, traffic will be maintained on-site due to the high traffic volumes and the lack of a suitable detour route.

Bridge No. 1 (B-2059) will be replaced at its present location with a double barrel 11' x 7' reinforced concrete culvert as shown in Figure 2. The culvert will be of sufficient length to accommodate a 24-foot travelway with 8-foot shoulders across the structure. Traffic will be maintained on-site during the construction period by provision of a temporary detour. Three 72-inch corrugated metal pipes will be used for the temporary detour to accommodate the flow of Spring Branch at this point.

Bridge No. 2 (B-2156) will be relocated approximately 45 feet west of its existing location (see Figure 2). The new structure will have a length of about 120 feet and a clear roadway width of 40 feet. The width will accommodate a 24-foot pavement and eight feet of lateral clearance on each side of the travelway. The recommended 40-foot structure width is in accordance with AASHTO's 1990 "A Policy on Geometric Design of Highways and Streets" and is generally commensurate with the existing roadway typical section.

Approximately 900 feet of new approach roadway for the replacement of Bridge No. 2 will provide an improved horizontal alignment and a design speed of 45 MPH. From a safety standpoint, retention of the existing sharp curvature is not acceptable. A 24-foot pavement with 8-foot useable shoulders should be provided on the approaches.

The Hydrographics Unit recommends the grade elevation of the replacement structures be approximately the same as the existing structures. These dimensions may be increased or decreased as necessary to accommodate peak flows as determined by further hydrologic studies.

Access and adequate sight distance should be maintained during the construction period for vehicles entering SR 1175 from the mobile home park north of Bridge No. 1 and from Grathwol Drive south of Bridge No. 2 (see Figure 2).

Coordination with and approval from the Federal Aviation Administration will be required during the design phase since this project is located in proximity to the New Hanover County Airport. Approval is required for all Federal-Aid projects located within two miles of a public use airport.

The division engineer concurs with the recommended bridge replacement alternatives and indicates traffic must be maintained on-site during the construction period. In addition, the relocation of Bridge No. 2 over Smith Creek reduces the sharp curvature of the roadway and is necessary from a safety standpoint in light of the high accident rate at this location.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of these two inadequate bridges will result in safer traffic operations.

These projects are considered to be Federal "categorical exclusions" due to their limited scopes and insignificant environmental consequences.

The bridge replacements will not have an adverse effect on the quality of the human and natural environment with the use of current NCDOT standards and specifications.

No businesses or homes are to be relocated. Therefore, no adverse impact on families or communities is anticipated.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

There are no properties of historic or cultural significance in the vicinity of these projects. No properties eligible for inclusion in the National Register of Historic Places are present. The structures are not historically significant. Therefore, the projects will not conflict with

historic or cultural resources. The State Historic Preservation Officer will be given an opportunity to review these projects and determine whether archaeological surveys will be required. If necessary, any surveys will be undertaken prior to construction.

These projects have been coordinated with the Soil Conservation Service as required by the Farmland Protection Policy Act. No prime or unique farmland will be impacted by the proposed projects and are, therefore, exempt from the Farmland Protection Policy Act.

New Hanover County is a participant in the National Flood Insurance Regular Program. The approximate 100-year floodplain in the project area is shown in Figure 6. These projects lie within the floodplain zone.

The project area is located in New Hanover County on the northeastern outskirts of Wilmington. Topography in the area ranges from nearly level to gentle slopes which are typical of floodplains.

The quality of Spring Branch and Smith Creek may be affected temporarily by the construction of these projects. Any erosion or siltation during construction will be minimized by standard sedimentation and erosion control measures.

"Best Management Practices" will be followed during construction. Erosion should be prevented to reduce siltation downstream. Roadbed fill should be minimized in wetland areas, especially along the temporary detour proposed for Bridge No. 1 over Spring Branch (B-2059). Vegetation removal should be restricted along the detour, and rapid revegetation should be encouraged after project completion. Impacted Blackwater Cypress-Gum Swamp and Coastal Plain Bottomland Hardwood Swamp Forest wetland communities should be restored to original condition after removal of the temporary detour, including restoration of substrate porosity.

Stream surveys, which were conducted by researchers twice a year from 1979 to 1986, indicate the following species commonly inhabit Smith Creek and Spring Branch: banded killifish (Fundulus diaphanus), freshwater goby (Gobionellus shufledti), tidewater silverside (Menidia beryllinia), mosquito fish (Gambusia affinis), least killifish (Heterandria formosa), mummichog (Fundulus heteroclitus), red-breasted sunfish (Lepomis auritis), fat sleeper (Dormitator maculatus), American eel (Anquilla rostrata), Pirate Perch (Aphredoderus sayanus), fresh water grass shrimp (Paleomonetes sp.), redfin pickerel (Esox americanus), tadpole madtom (Noturus gyrinus), swamp darter (Etheostoma fusiforme), and tessalated darter (Etheostoma olmsteadi). The blue gill (Lepomis macrochirus) and pumpkin seed (L. gibbosus) were not found in the stream surveys but are common in similar locations nearby. Anadromous fish are not expected to occur in Spring Branch or Smith Creek due to the shallow depths of these waters.

Mammals that inhabit swamp forests include gray squirrel (Sciurus carolinensis), cotton mouse (Peromyscus gossypinus), beaver (Castor canadensis), raccoon (Procyon lotor), and gray fox (Urocyon cinereoargenteus). Opossum (Didelphis virginiana), Southeastern shrew (Sorex longirostris), star-nosed mole (Condylura cristata), Rafinesques'

big-eared bat (Plecotus rafinesquii), marsh rabbit (Sylvilagus palustris), golden mouse (Ochrotomys nuttalli), rice rat (Oryzomys palustris), black bear (Ursus americanus), and white-tailed deer (Odocoileus virginianus) may also be found in the area.

One might expect the following amphibians and reptiles to occur in the project area: spotted turtle (Clemmys guttata), rat snake (Elaphe obsoleta), mud snake (Farancia abacura), rainbow snake (F. etyrogramma), brown water snake (Nerodia taxispilota), black swamp snake (Seminatrix pygaea), and cottonmouth (Agkistrodon piscivorus). A number of salamanders are likely to inhabit this area, including lesser siren (Siren intermedia), greater siren (Siren lacertina), two-toed amphiuma (Amphiuma means), Mabee's salamander (Ambystoma mabeei), marbled salamander (Ambystoma opacum), Southern dusky salamander (Desmognathus auriculatus), two and three-lined salamanders (Eurycea bislineata and E. guttolineata), dwarf salamander (Eurycea quadridigitata), mud salamander (Pseudotriton montanus), and many-lined salamander (Stereochilus marginatus). One could also expect a variety of frogs to inhabit the project area, including gray treefrog (Hyla versicolor), green treefrog (H. cinerea), barking treefrog (H. gratiosa), little grass frog (Limnaeodius ocularis), Brimley's chorus frog (Pseudacris brimleyi), ornate chorus frog (P. ornata), river frog (Rana heckscheri), and Southern leopard frog (R. sphenoccephala).

Avian fauna common to swamp forests include the great blue heron (Ardea herodias), wood duck (Aix sponsa), turkey vulture (Cathartes aura), red-shouldered hawk (Buteo lineatus), barred owl (Strix varia), pileated woodpecker (Dryocopus pileatus), red-bellied woodpecker (Melanerpes carolinus), Northern parula (Parula americana), and prothonary and yellow throated warblers (Protonotaria citrea and Dendroica dominica).

The American alligator (Alligator mississippiensis), which has a state and federal status of "Threatened", is listed in the Natural Heritage Program files as occurring downstream of the project area. It is classified as "Threatened due to similarity of appearance" to other reptiles such as the American crocodile, which makes it prone to exploitation and therefore, extinction. This status was assigned as a means of protecting the American crocodile in areas where the two species' ranges overlap. The American crocodile does not occur in North Carolina, but the alligator's range extends into the state and is afforded legal protection throughout its range. The American alligator was not observed during field observations.

No impacts to rare or endangered flora or fauna are anticipated. Of the species listed as threatened and/or endangered by the U. S. Fish and Wildlife Service, none have been observed during field investigations in the immediate study area. The Natural Heritage Program files, which were consulted on June 28, 1990, indicate no protected plant or animal species are located in the area of the proposed project.

Benthic information is not available for the area. No sampling sites are established near the project site.

Construction along Spring Branch and Smith Creek may temporarily disturb aquatic communities in the project area. Siltation is a potential affect of construction on the aquatic system. Siltation can affect water chemistry, resulting in changes to the pH and oxygen demand. Potential impacts to sessile, benthic communities and fish species can be anticipated. Immobile organisms, such as mollusks, could also be affected. In general, heavy siltation could effect the diversity of the aquatic biota in these waters. Strict coherence to "Best Management Practices" and sediment control policies will minimize such impacts.

Dorovan soils are mapped in the vicinity of Spring Branch and Smith Creek, according to the New Hanover Soil Survey. These soils are classified as hydric, according to the Soil Conservation Service. The Dorovan series consists of very poorly drained, very slowly permeable soils which are typically found in stream floodplains. Slopes are less than one percent. These soils are frequently flooded for long periods.

Seagate fine sands are mapped between Bridge No. 1 and Bridge No. 2, in the vicinity of the trailer park. Seagate fine sands are classified as soils with hydric inclusions. The Seagate series is a poorly drained, moderately permeable soil located on nearly level uplands. Slopes are generally less than two percent.

Spring Branch and Smith Creek are classified as having "C Sw" waters. Class C waters are suitable for aquatic life propagation and survival, fishing, secondary recreation, and agriculture. Swamp Waters (Sw) typically have low velocities, low pH levels, and low dissolved oxygen levels that often differ from non-swamp streams.

The Division of Coastal Management has designated Smith Creek and Spring Branch as a "Public Trust Area of Environmental Concern" (AEC) under "Inland" jurisdiction, and provisions of the Coastal Area Management Act (CAMA) are applicable. Public Trust AEC's are critical areas that fall under CAMA developmental guidelines. These areas include waters and submerged lands where the public has the right of use and/or ownership, including right of navigation and recreation.

Bridge No. 1 (B-2059)

The lowland forested area adjacent to Spring Branch in the vicinity of the project may be described as a Blackwater Cypress-Gum Swamp community (BC-GSC). This community type is typically located on floodplains of blackwater rivers which experience seasonal to semi-permanent flooding. Due to the influence of flooding on water chemistry and on allochthonous inputs of organic and inorganic materials, canopy species diversity tends to be low.

Canopy dominants include bald cypress (*Taxodium distichum*), pond cypress (*Taxodium ascendens*), and black gum (*Nyssa biflora*). The canopy is dense and transmits very little sunlight at the approximate location of the temporary detour. Several large trees of loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), and tulip poplar (*Liriodendron tulipifera*) are located on the road shoulder southeast of the existing bridge. The

understory shrub layer is dense in spots and sparse in other areas. Predominant species include red bay (Persea borbonia), white bay (Magnolia virginiana), wax myrtle (Myrica cerifera), water ash (Fraxinus caroliniana), tag alder (Alnus serrulata), fetter-bush (Leucothoe racemosa), titi (Cyrilla racemiflora), and loblolly bay (Gordonia lasianthus). The ground cover is dominated by a few soft stem aquatic plants, such as pickerelweed (Pontederia cordata), arrowhead (Sagittaria sp.), and lizard's tail (Saururus cernuus). Cattail (Typha sp.) and royal fern (Osmunda regalis) are also present. The obedient plant (Dracocephalum purpureum) can be found growing at the edge of the stream in standing water.

A slight elevation in the northeast corner of the project gives rise to another wetland community classified as Coastal Plain Bottomland Hardwoods. This community type is located on slightly higher, drier areas of the floodplain, away from the main channel. Canopy diversity is usually greater than the Blackwater Cypress-Gum Swamp. This community tends to have a highly variable flood regime. No surface water was noted, except that which is associated with small active stream channels. Sweetgum (Liquidambar styraciflua), willow oak (Quercus phellos), loblolly pine (Pinus taeda), and tulip poplar (Liriodendron tulipifera) dominate the canopy. A dense lower strata, the shrub layer, includes red maple (Acer rubrum), privet (Ligustrum sinense), tag alder, water ash, and wax myrtle. Netted chainfern (Woodwardia areolata), cane (Arundinaria gigantea), cow itch (Campsis radicans), poison ivy, and catbrier (Smilax sp.) dominate the ground cover.

Two types of wetlands will be affected by project construction. "Permanent" impacts are expected from construction activities in the immediate vicinity of the existing bridge. Spring Branch and the surrounding plant communities will be impacted from bridge replacement activities and approach work. The approach work associated with the culvert will impact a narrow strip along the existing roadway.

"Temporary" impacts are anticipated from the placement and subsequent removal of the temporary detour. Grubbing of existing vegetation and excavation of native hydric soils are anticipated prior to placement of roadbed fill. Subsoil compaction from construction equipment can also be anticipated.

Anticipated wetland impacts, based on a 60-foot corridor width, are 0.15 acre for permanent wetland impacts and 0.58 acre for temporary wetland impacts. Since less than a total of one acre of wetlands will be impacted, the Nationwide Permit Provisions of 33 CFR 330.5(a) are applicable. Permitting in wetlands will fall under the jurisdiction of the U. S. Army Corps of Engineers and State Division of Coastal Management (DCM).

Spring Branch, a tributary of Smith Creek, is under minimal tidal influence. Tide flow can result in the introduction of inorganic salts, but, perhaps more importantly, can bring about water level variations of several feet, especially during special lunar tides and heavy rains.

If stream rechannelization of Spring Branch is necessary, NCDOT will need to consult with the N. C. Wildlife Resources Commission and the Division of Environmental Management (DEM); however, preliminary design indicates stream rechannelization is not necessary.

Bridge No. 2 (B-2156)

A Blackwater Cypress-Gum Swamp is found in the Smith Creek project area. This community occurs along floodplains of blackwater rivers and has a highly variable flow regime. The water tends to be very acidic, low in mineral sediment and nutrients, and colored by tannins.

Smith Creek is under irregular freshwater tidal influence, which can cause the waters to become brackish at times. The water level can change a few feet or more during high tides (especially lunar tides) and heavy rains.

A few disturbances are noted in the project area. A utility line crosses the Cypress-Gum Swamp community west of SR 1175 (North Kerr Avenue). Vegetation is dense in areas outside the utility corridor, in contrast with the maintained, low growing vegetation along the utility line. The canopy is not full along the new roadway due largely to the presence of stream channels and small tributaries that meander through the area and dissect the canopy. Canopy dominants include bald cypress (Taxodium distichum), water oak (Quercus nigra), water ash (Fraxinus caroliniana), and sweetgum (Liquidambar styraciflua). The sapling/shrub layer is dense with privet (Ligustrum sinense), tag alder (Alnus serrulata), red maple (Acer rubrum), wax myrtle (Myrica cerifera), and marsh elder (Iva frutescens). Wisteria (Wisteria sp.) and woody grape (Vitis sp.) vines are common. Ground cover species includes ludwigia (Ludwigia sp.), rush (Juncus sp.), water hemlock (Cicuta maculata), and dodder (Cuscuta sp.).

A disturbed hardwood/pine community exists on a small wetland "island" between the utility line and the existing roadway on the south side of Smith Creek. This community has attributes of a Coastal Plain Bottomland Hardwoods community, but plant composition has been influenced by disturbance. Canopy dominants include loblolly pine (Pinus taeda), sycamore (Platanus occidentalis), sweetgum (Liquidambar styraciflua), and red maple. Privet and tulip poplar (Liriodendron tulipifera) are major elements of the understory. The ground cover is composed of a mixture of plants, including ebony spleenwort (Asplenium platyneuron), bedstraw (Galium sp.), and clover. Vines such as wisteria, honeysuckle (Lonicera japonica), and grape (Vitis sp.) are very prolific.

Several herbaceous plants are typically found along the north side of Smith Creek in areas with little elevation change. These plants occur in full sun at breaks in the canopy. Pickerel weed (Pontederia cordata), arrowhead (Sagittaria sp.), pigweed (Amaranthus sp.), cattail (Typha sp.), sensitive fern (Onoclea sensibilis), and alligator weed (Alternanthera philoxeroides) dominate these areas.

Upland communities occur in scattered locations along the proposed alignment. South of Smith Creek is a small upland site with sparse vegetation due to patterns of heavy vehicular and foot traffic. The second upland site lies north of the creek on a small mound at the site of a utility pole. Both sites have been disturbed by man. Dominant plant species in these locations are sweetgum, tulip poplar, loblolly pine, beauty berry (Callicarpa americana), and cane (Arundinaria gigantea).

Removal of the existing Bridge No. 2 upon construction of the new structure should, in effect, open up new terrestrial and aquatic habitat at Smith Creek. Removal of the old structure and its approaches will mitigate the loss of habitat from construction of the new facility.

Impacts to wetlands are anticipated from construction on new location. Grubbing of existing vegetation and excavation of native hydric soils are anticipated prior to placement of roadbed fill. Subsoil compaction from construction equipment is also anticipated.

Wetland impacts associated with Bridge No. 2 over Smith Creek are anticipated from bridge construction on new location. The amount of wetland which will be impacted from the construction on new location is 0.5 acre. This acreage is based on a 60-foot right of way corridor width. Since less than one acre of wetlands will be impacted, the Nationwide Permit Provisions of 33 CFR 330.5(a) are applicable. Permitting in wetlands will fall under the jurisdiction of the U. S. Army Corps of Engineers and State Division of Coastal Management (DCM).

The Coastal Area Management Act also has jurisdiction in areas which are dominated by one or more plants in CAMA's list of plant species common to wetland areas. The presence of cattail at the location of the proposed project clearly defines this area as a Coastal Wetland Area of Environmental Concern. "Cattail" is listed as one of the plants that fall in CAMA's jurisdiction. As such, wetland development in this area requires a permit from the Division of Coastal Management (DCM). Permitting for wetland development along Smith Creek will fall under the jurisdiction of the U.S. Army Corps of Engineers and the State Division of Coastal Management.

On the basis of the above discussion, it is concluded that no adverse environmental effects will result from implementation of these projects.

JH/plr