Appendix B

Lists of Plant and Animal Species Found in the Vicinity of the Project Area and/or Referenced in the Report

B. Lists of Plant and Animal Species Found in the Vicinity of the Project Area and/or in the Report

Appendix B-1. Scientific and Common Names of Plants Referenced in the Text.

Common name	Scientific name
American holly	*Ilex opaca*
Arrow arum	*Peltandra virginica*
Arrow-head	*Sagittaria latifolia*
Bald Cypress	*Taxodium distichum*
Bedstraw	*Galium obtusum*
Big cordgrass	*Spartina cynosuroides*
Blackberry	*Rubus argutus*
Broomsedge	*Andropogon virginicus*
Bulrush	*Scirpus tabernaemontani*
Bushy pondweed	*Najas guadalupensis*
Cattail	*Typha angustifolia*
Cattail	*Typha latifolia*
Crabgrass	*Digitaria sanguinalis*
Creeping spikerush	*Eleocharis fallax*
Cudweed	*Gamochaeta purpurea*
Cut grass	*Leersia oryzoides*
Day flower	*Commelina communis*
Dog fennel	*Eupatorium capillifolium*
Duck potato	*Sagittaria lancifolia*
Eastern red cedar	*Juniperus virginiana*
Eurasian water milfoil	*Myriophyllum spicatum*
False nettle	*Boehmeria cylindrica*
Flowering dogwood	*Cornus florida*
Giant cane	*Arundinaria gigantea*
Goldenrod	*Euthamia tenuifolia var. tenuifolia*
Greenbrier	*Smilax bona-nox*
Greenbrier	*Smilax rotundifolia*
Groundsel-tree	*Baccharis halimifolia*
Highbush blueberry	*Vaccinium corymbosum*
Horse sugar	*Symplocus tinctoria*
Ironwood	*Carpinus caroliniana*
Japanese honeysuckle	*Lonicera japonica*
Laurel oak	*Quercus laurifolia*
Live oak	*Quercus virginiana*
Lizard's tail	*Saururus cernuus*
Loblolly bay	*Gordonia lasianthus*
Loblolly pine	*Pinus taeda*

Common name	Scientific name
Longleaf pine	*Pinus palustris*
Marsh fern	*Thelypteris palustris*
Marsh seedbox	*Ludwigia palustris*
Mock bishop's weed	*Ptilimnium capillaceum*
Muscadine	*Vitus rotundifolia*
Nepalese browntop	*Microstegium vimineum*
Netted chainfern	*Woodwardia areolata*
Northern bayberry	*Morella pensylvanica*
Paw paw	*Asimina triloba*
Persimmon	*Diospyros virginiana*
Pineweed	*Hypericum gentianoides*
Plantain	*Plantago lanceolata*
Poison ivy	*Toxicodendron radicans*
Pokeweed	*Phytolacca americana*
Red maple	*Acer rubrum*
Redhead grass	*Potamogeton perfoliatus*
Royal fern	*Osmunda regalis*
Rush	*Juncus acuminatus*
Rush	*Juncus coriaceus*
Rush	*Juncus dichotomus*
Sago pondweed	*Potamogeton pectinatus*
Seabeach amaranth	*Amaranthus pumilus*
Sedge	*Carex albolutescens*
Sedge	*Carex atlantica* ssp. *capillacea*
Sedge	*Carex comosa*
Sedge	*Carex laevivaginata*
Slender spikegrass	*Chasmanthium laxum*
Sourwood	*Oxydendrum arboreum*
Southern lady fern	*Athyrium filix-femina* ssp. *Aspleniodes*
Spadeleaf	*Centella asiatica*
Stoneworts (macroscopic algae)	*Chara* spp.
Swamp chestnut oak	*Quercus michauxii*
Swamp red bay	*Persea palustris*
Swamp tupelo	*Nyssa biflora*
Swamp willow	*Salix caroliniana*
Sweet pepperbush	*Clethera alnifolia*
Sweetbay	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Switchcane	*Panicum virgatum*

Common name	Scientific name
Thoroughwort	*Eupatorium hyssopifolium*
Three-square	*Scirpus americanus*
Toad flax	*Nuttallanthus canadensis*
Tulip tree	*Liriodendron tulipifera*
Venus' looking-glass	*Triodanis perfoliata var. perfoliata*
Virginia chainfern	*Woodwardia virginica*
Virginia creeper	*Parthenocissus quinquefolia*
Virginia willow	*Itea virginica*
Water hemlock	*Cicuta maculata*
Water oak	*Quercus nigra*
Wax myrtle	*Morella cerifera*
Widgeon grass	*Ruppia maritima*
Wild celery	*Vallisneria americana*
Yarrow	*Achillea millefolium*
Yaupon	*Ilex vomitoria*
Yellow Jessamine	*Gelsemium sempervirens*

[a] *Nomenclature follows Kartesz (1994).*

[b] *Common names were obtained from Radford et al. (1968) when available, followed by Schafale and Weakley (1990), Reed (1988) and N.C. Natural Heritage Program database, respectively.*

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Kartesz, J. T. 1994. A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland. Vols. 1 and 2. Timber Press, Portland.

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Reed, P. B., Jr. 1988. National list of Plant Species that Occur in Wetlands; Southeast (Region 2) for National Wetlands Inventory, U.S. Fish and Wildlife Service, U.S. Department of the Interior. Biological Report 88(26.2).

Schafale, M. P. and A. S. Weakley. 1990. Classification of the Natural Communities of North Carolina, 3rd Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, NC Department of Environment, Health, and Natural Resources.

Appendix B-2. Aquatic Macroinvertebrates Referenced in the Text.

Common name	Scientific name
	CRUSTACEA
	Decapoda
Blue crab	*Callinectes sapidus*
Brown Shrimp	*Crangon crangon*
Pink Shrimp	*Penaeus duorarum*
White Shrimp	*Penaeus setiferus*
	MOLLUSCA
Clams	

REFERENCES

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USFWS. 1980. Proposed National Wildlife Refuge on the Currituck Outer Banks, Currituck County, N.C. (FEIS) U.S. Fish and Wildlife Service, Dept. of Interior, Newton Corner, MA

Winslow, S.E., N. S. Sanderlin, G. W. Judy, J. H. Hawkins, B. F. Holland, Jr., C. A. Fischer, and R. A. Rligson. 1983. North Carolina Anadromous Fisheries Management Program. N.C. Dept. of Natural Resources and Community Development. Division of Marine Fisheries. Morehead City, NC. 151 p.

Appendix B-3. Scientific and Common Names of Fish Found Referenced in the Text.

Common name	Scientific name
Alewife	*Alosa pseudoharengus*
American shad	*Alosa sapidissima*
Atlantic croaker	*Micropogonias undulatus*
Banded killifish	*Fundulus diaphanus*
Bay anchovy	*Anchoa mitchilli*
Black sea bass	*Centropristis striata*
Blueback herring	*Alosa aestivalis*
Bluefish	*Pomatomus saltatrix*
Bluegill	*Lepomis macrochirus*
Bluespotted sunfish	*Enneacanthus gloriosus*
Brown bullhead	*Ictalurus nebulosus*
Butterfish	*Peprilius triacanthus*
Common Carp	*Cyprinus carpio*
Channel catfish	*Ictalurus punctatus*
Golden shiner	*Notemigonus crysoleucas*
Killifish	*Fundulus spp.*
Largemouth bass	*Micropterus salmoides*
Pumpkinseed	*Lepomis gibbosus*
Red drum	*Sciaenops ocellatus*
Red grouper	*Epinephelus morio*
Southern flounder	*Paralichthys lethostigma*
Atlantic spadefish	*Chaetodipterus faber*
Spanish mackerel	*Scomberomorus maculatus*
Spot	*Leiostomus xanthurus*
Striped bass	*Morone saxatilis*
Striped mullet	*Mugil cephalus*
Summer flounder	*Paralichthys dematus*
White catfish	*Ictalurus catus*
White perch	*Morone americana*
Yellow bullhead	*Ictalurus natalis*
Yellow perch	*Perca flavescens*

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Kornegay, J. W. 1989. Currituck Sound Fish Population Survey. Final Report. NC Wildlife Res. Comm. Div. of Boating and Inland Fisheries. Coastal Fisheries Invest. Project F-22-14.

Menhinnick, E. F. 1991. Freshwater Fishes of North Carolina. North Carolina Wildlife Resources Commission, Raleigh, NC. 227 p.

NC Wildlife Resources Commission. Unpublished sampling data.

NC Division of Marine Fisheries. Unpublished commercial data.

Winslow, S. E., et al. 1983. North Carolina Anadromous Fisheries Management Program. North Carolina Dept. of Natural Resources and Community Development, Div. of Marine Fisheries, Morehead City, NC. 151 p

Appendix B-4. Scientific and Common Names of Reptiles and Amphibians Referenced in the Text.

Common name	Scientific name
AMPHIBIANS	
Frogs/Toads	
Bull frog*	*Rana catesbeiana*
Fowler's toad	*Bufo woodhousei fowleri*
Green frog*	*Rana clamitans*
Spring peeper	*Hyla crucifer*
Squirrel treefrog	*Hyla squirella*
Salamanders	
REPTILES	
Alligators	
American alligator	*Alligator mississippiensis*
Lizards	
Broad-headed skink	*Eumeces laticeps*
Fence lizard	*Sceloporus undulatas*
Ground skink*	*Scincella lateralis*
Six-lined race runner	*Cnemidophorus sexlineatus*
Snakes	
Black racer*	*Coluber constrictor*
Brown watersnake	*Nerodia taxisplota*
Cottonmouth*	*Agkistrodon piscivorous*
Red-bellied watersnake	*Neroida erythrogaster*
Turtles	
Eastern mud turtle	*Kinosternon subrubrum*
Green sea turtle	*Chelonia mydas*
Hawksbill sea	*Eretmochelys imbricata*
Kemp's ridley sea turtle	*Lepidochelys kempii*
Leatherback sea turtle	*Dermochelys coriacea*
Loggerhead sea turtle	*Caretta caretta*
Snapping turtle	*Chelydra serpentina*
Stinkpot (Eastern musk turtle)	*Sternotherus odoratus*

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Martof, B. S., W. M. Palmer, J. R. Bailey, and J. R. Harrison, III. 1980. Amphibians and Reptiles of the Carolinas and Virginia. Univ. of North Carolina Press, Chapel Hill, NC. 264 p.

Palmer, W. A., A. Braswell. 1995. Reptiles of North Carolina. Univ. of North Carolina Press, Chapel Hill, NC. 412 p.

Parnell, J. F., P. E. Hosier, D. J. Sieren, W. D. Webster, and S. Cooper. September 1987. Ecological Reconnaissance Currituck Shooting Club Property.

Platania, S. P., D. Lee. 1978. Results of a Four-week Herpetological Survey of the Coinjock Region (NC) of the Great Dismal Swamp. N.C. State Museum of Natural History, Raleigh, NC. 34 p.

Appendix B-5. Scientific and Common Names of Birds Referenced in the Text.

Common name	Scientific name
American black duck*	*Anas rubripes*
American coot*	*Fulica americana*
American crow*	*Corvus brachyrhynchos*
American white pelican	*Pelecanus erythrorhynchis*
American wigeon*	*Anas americana*
Bald eagle*	*Haliaetus leucocephalus*
Barred owl*	*Strix varia*
Black rail*	*Laterallus jamaicensis*
Black-throated green warbler	*Dendroica virens (wayneii- breeding)*
Brown pelican*	*Pelecanus occidentalis*
Canada goose*	*Branta canadeusis*
Canvasback	*Aythya valisineria*
Carolina chickadee*	*Parus carolinensis*
Carolina wren*	*Thryothorus ludovicianus*
Common yellowthroat*	*Geothlypis trichas*
Field sparrow*	*Spizella pusilla*
Gadwall*	*Anas strepeva*
Glossy ibis	*Plegadis falcinellus*
Golden eagle	*Aquila chrysaetos*
Gray catbird*	*Dumetella carolinensis*
Great blue heron*	*Ardea herodias*
Green-winged teal*	*Anas crecca*
Hooded warbler*	*Wilsonia citrina*
Least tern*	*Sterna antillarum*
Mallard*	*Anas platyrhynchos*
Northern cardinal*	*Cardinalis cardinalis*
Northern parula*	*Parula americana*
Northern pintail*	*Anas acuta*
Osprey*	*Pandian haliaetus*
Ovenbird*	*Seiurus aurocapillus*
Piping plover	*Charadrius melodus*
Prairie warbler*	*Dendroica striata*
Prothonotary warbler*	*Protonotaria citrea*
Red-cockaded woodpecker	*Picoides borealis*
Red-eyed vireo*	*Vireo olivaceus*
Red knot	*Calidris canutus*
Red-shouldered hawk*	*Buteo lineatus*
Ring-necked duck	*Aythya collaris*

Common name	Scientific name
Roseate tern	*Sterna dougallii*
Snow goose*	*Chen caerulescaus*
Tufted titmouse*	*Parus bicolor*
Tundra swan*	*Cygnus columbianus*
White-eyed vireo*	*Vireo griseus*
Wood duck*	*Aix sponsa*
Yellow-billed cuckoo*	*Coccyzux americanus*
Yellow Rail	*Coturnicops noveboracensis*

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Fussell, J. F., III, and M. Lyons. 1990. Birds of the Outer Banks. National Park Service, Dept. of the Interior. (pamphlet)

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Parnell, J. F., P. E. Hosier, D. J. Sieren, W. D. Webster, and S. Cooper. September 1987. Ecological Reconnaissance Currituck Shooting Club Property, Final Report.

Platania, S. P., and D. Lee. 1978. Results of a Four-week Avian Survey of the Coinjock Region (NC) of the Great Dismal Swamp. NC State Museum of Natural History, Raleigh, NC

Appendix B-6. Scientific and Common Names of Mammals Referenced in the Text.

Common name	Scientific name
Beaver	*Castor canadensis*
Black bear*	*Ursus americanus*
Bobcat	*Lynx rufus*
Eastern cottontail*	*Sylvilagus floridanus*
Feral cat*	*Felis catus*
Feral horse	*Equus caballus*
Feral pig	*Sus scrofa*
Gray fox*	*Urocyon cinereoargenteus*
Gray squirrel	*Sciurus carolinensis*
House mouse	*Mus musculus*
Marsh rice rat	*Oryzomys palustris*
Mink	*Mustela vision*
Muskrat*	*Ondatra zibethica*
Norway rat	*Rattus norvegicus*
Nutria*	*Myocaster coypus*
Raccoon*	*Procyon lotor*
West Indian manatee	*Trichechus manatus*
White-footed mouse	*Peromyscus leucopus*
White-tailed deer*	*Odocoileus virginianus*

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Platania, S. P., and D. Lee. 1978. Results of a Five-week Mammal Survey of the Coinjock Region (NC) of the Great Dismal swamp. North Carolina State Museum of Natural History. Raleigh, NC. 79 p.

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Appendix C

Wetland and Stream Forms

RW4-1

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W001

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 14 Nov 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RW4-1 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Smilax rotundifolia*	V	FAC	9. *Arundinaria gigantea*	S	FACW
2. *Saururs cernuus*	H	OBL	10. *Magnolia virginiana*	T	FACW+
3. *Liquidambar styraciflua*	T	FAC+	11.		
4. *Acer rubrum*	T	FAC	12.		
5. *Morella cerifera*	S	FAC+	13.		
6. *Leucothoe axillaris*	H	FACW	14.		
7. *Osmunda regalis*	H	OBL	15.		
8. *Woodwardia areolata*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated In Upper 12"
- X Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

BW4-1

SOILS

W001

Map Unit Name
(Series and Phase): Dorovan mucky peat **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Typic Medisaprists **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3					organic debris
3-12		7.5YR 2.5/1			sandy loam
12-24		7.5YR 2.5/1	10YR 6/1 heavy stripping		clay loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X **No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X **No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X **No** ___		

Remarks:

Great ~~Bismal~~ Swamp – west side of Rt 158 immediately north of ICW

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W002

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 14 Nov 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** RW4-18 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Quercus nigra*	T	FAC	10.		
3. *Persea palustris*	T	FACW	11.		
4. *Vaccinium corymbosum*	H/S	FACW	12.		
5. *Liquidambar styraciflua*	T	FAC+	13.		
6. *Pinus taeda*	T	FAC	14.		
7. *Acer rubrum*	T	FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (In.)

Depth to Saturated Soil: >24 (In.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrolgy present

R-4-18

SOILS

1/1002

Map Unit Name
(Series and Phase): Augusta fine sandy loam **Drainage Class:** somewhat poorly drained

Taxonomy (Subgroup): thermic Aeric Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-23		2.5Y 2.5/1			loamy sand
23-24		10YR 4/2			loamy sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
X Listed On Local Hydric Soils List
X Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

~~Great Dismal~~ Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W003

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 14 Nov 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RE6-1 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Smilax rotundifolia*	V	FAC	9. *Arundinaria gigantea*	S	FACW
2. *Saururs cernuus*	H	OBL	10. *Magnolia virginiana*	T	FACW+
3. *Liquidambar styraciflua*	T	FAC+	11.		
4. *Acer rubrum*	T	FAC	12.		
5. *Morella cerifera*	S	FAC+	13.		
6. *Leucothoe axillaris*	H	FACW	14.		
7. *Osmunda regalis*	H	OBL	15.		
8. *Woodwardia areolata*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- **___ Stream, Lake, or Tide Gauge**
- **_X_ Aerial Photographs**
- **___ Other**

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (In.)

Wetland Hydrology Indicators

Primary Indicators:
- **___ Inundated**
- **___ Saturated in Upper 12"**
- **_X_ Water Marks**
- **___ Drift Lines**
- **___ Sediment Deposits**
- **_X_ Drainage Patterns in Wetlands**

Secondary Indicators:
- **_X_ Oxidized Roots Channels in Upper 12"**
- **_X_ Water-Stained Leaves**
- **___ Local Soil Survey Data**
- **_X_ FAC-Neutral Test**
- **___ Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology present

SOILS

W003

Map Unit Name
(Series and Phase): Portsmouth fine sandy loam **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Typic Umbraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3					organic debris
3-12		7.5YR 2.5/1			sandy loam
12-24		7.5YR 2.5/1	10YR 6/1 heavy stripping		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

Great ~~Bismal~~ Swamp – east side of Rt 158 immediately north of ICW

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 31 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NW97U
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Panicum virgatum*	herb	FAC+	9.		
2. *Festuca arundinacea*	herb	FACU	10.		
3. *Arthraxon hispidus*	herb	UPL	11.		
4. *Digitaria ischaemum*	herb	UPL	12.		
5. *Toxicodendron radicans*	vine	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 40

Remarks: Regularly mowed.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >18 (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NW97U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): State fine sandy loam — Drainage Class: well drained

Taxonomy (Subgroup): thermic Typic Hapludults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-18	B	10YR5/2			sandy silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W009

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 31 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse)	Community ID: NW87W Transect ID: not applicable Plot ID: not applicable

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix caroliniana*	sapling	OBL	9. *Hydrocotyle umbellata*	herb	OBL
2. *Juncus effusus*	herb	FACW+	10. *Toxicodendron radicans*	vine	FAC
3. *Woodwardia areolata*	herb	OBL	11.		
4. *Thelypteris thelypteroides*	herb	FACW+	12.		
5. *Osmunda regalis*	herb	OBL	13.		
6. *Typha angustifolia*	herb	OBL	14.		
7. *Cyperus* sp.	herb	N/A	15.		
8. *Panicum virgatum*	herb	FAC+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 90

Remarks: Regularly mowed.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

__x__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Standing Water in Pit	2	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- __x__ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __x__ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- __x__ Local Soil Survey Data
- __x__ FAC-Neutral Test
- __x__ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NW97W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W004

Map Unit Name
(Series and Phase): Tomolley fine sandy loam Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic clayey silt
3-18	B	10YR3/1			sandy clayey silt

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
_X_ Reducing Conditions
_X_ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
_X_ Listed on Local Hydric Soils List
_X_ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 31 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NW57U
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Festuca arundinacea*	herb	FACU	9.		
2. *Digitaria ischaemum*	herb	UPL	10.		
3. *Arthraxon hispidus*	herb	UPL	11.		
4. *Solidago rugosa*	herb	FAC	12.		
5. *Cynodon dactylon*	herb	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 20

Remarks: Regularly mowed.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Standing Water in Pit:	>18	(in.)
Depth to Saturated Soil:	>18	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NW57U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): State fine sandy loam — Drainage Class: well drained

Taxonomy (Subgroup): thermic Typic Hapludults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-18	n/a	n/a			Poorly sorted fill material

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: Road embankment fill material and colluvium.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual) W010

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 31 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NW67W
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	sapling	FACW	9.		
2. *Liquidambar styraciflua*	sapling	FAC+	10.		
3. *Pinus taeda*	sapling	FAC	11.		
4. *Juncus effusus*	herb	FACW+	12.		
5. *Typha latifolia*	herb	OBL	13.		
6. *Eupatorium perfoliatum*	herb	FACW+	14.		
7. *Bidens frondosa*	herb	FACW	15.		
8. *Solidago rugosa*	herb	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water:	0 (in.)
Depth to Standing Water in Pit:	n/a (in.)
Depth to Saturated Soil:	10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- x Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaf Litter
- x Local Soil Survey Data
- x FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NW57W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W/D 10

Map Unit Name
(Series and Phase): Tomolley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic clayey silt
3-20	B	10YR3/1			sandy clayey silt

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed on Local Hydric Soils List
X Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No			
Hydric Soils Present?	Yes	No			

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 30 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NW19U
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9.		
2. *Liquidambar styraciflua*	tree	FAC+	10.		
3. *Nyssa sylvatica*	tree	FAC	11.		
4. *Quercus nigra*	sapling	FAC	12.		
5. *Symplocus tinctorium*	sapling	FAC	13.		
6. *Ligustrum sinense*	shrub	FACU	14.		
7. *Eupatorium capillifolium*	herb	FACU	15.		
8. *Liriodendron tulipifera*	sapling	FACU	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 63

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NW19U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): State fine sandy loam — Drainage Class: well drained

Taxonomy (Subgroup): thermic Typic Hapludults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-24	B	10YR4/4			sandy silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

WOI6

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 30 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NW19W
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Saururus cernuus*	herb	OBL
2. *Liquidambar styraciflua*	tree	FAC+	10. *Juncus effusus*	herb	FACW+
3. *Nyssa sylvatica*	tree	FAC	11. *Woodwardia areolata*	herb	OBL
4. *Carpinus caroliniana*	sapling	FAC	12. *Thelypteris thelypteroides*	herb	FACW+
5. *Symplocus tinctorium*	sapling	FAC	13. *Polygonum sagittatum*	herb	OBL
6. *Quercus nigra*	sapling	FAC	14. *Polygonum hydropiperoides*	herb	OBL
7. *Vaccinium corymbosum*	shrub	FAC	15. *Sparganium americanum*	herb	OBL
8. *Arundinaria gigantea*	shrub	FACW	16. *Boehmeria cylindricata*	herb	FACW+

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

__x__ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: n/a (in.)

Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- __x__ Saturated in Upper 12 Inches
- __x__ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __x__ Oxidized Root Channels in Upper 12 Inches
- __x__ Water-Stained Leaf Litter
- __x__ Local Soil Survey Data
- __x__ FAC-Neutral Test
- __x__ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions). Slight buttressing of tree trunks.

DATA FORM (Community "NW19W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

~~010~~

Map Unit Name
(Series and Phase): Tomotley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic clayey silt
3-18	B	10YR3/1			sandy clayey silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

- Northwest Maple Swamp
- Southeast of NWET 1

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W013

Project/Site: Audlett Rd, SR 1140 Mid-Currituck	Date: 10-16-07
Applicant/Owner: NC Turnpike Authority Bridges	County: Currituck
Investigator: CZR, Inc-Kelly Charnock, Steve Black	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: NWET 1
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Smilax rotundifolia	V	FAC	9. Lyonia lucida	S	FACW
2. Liquidambar styraciflua	T	FAC+	10. Ilex glabra	S	FACW
3. Liriodendron tulipifera	T	FAC	11. Morella cerifera	S	FAC+
4. Nyssa sylvatica var. biflora	T	OBL	12. Clethra alnifolia	S	FACW
5. Arundinaria gigantea	S	FACW	13. Gelsemium sempervirens	V	FAC
6. Vaccinium corymbosum	S	FACW	14. Euonymus americanus	S/T	FAC-
7. Woodwardia aereolata	H	OBL	15. Acer rubrum	H/S/T	FAC
8. Decumaria barbara	V	FACW	16. Persea borbonia	S/T	FACW

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). > 75%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (In.)
- Depth to Free Water in Pit: NA (In.)
- Depth to Saturated Soil: 13 (In.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

NWET1

SOILS

W013

Map Unit Name (Series and Phase): Ws - Wasda muck Drainage Class: very poorly drained

Field Observations

Taxonomy (Subgroup): thermic Histic Humaquepts Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-22		10YR 2/1	10YR 3/1	Few/small	LOAM
22-24"		10YR 4/1			silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Few, small mottles in 0-22". Larger, more frequent mottles and streaking observed in 22-24"

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: Meets all three wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W013

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 16 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** D wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Clethra alnifolia*	S	FACW	9. *Arundinaria gigantea*	S	FACW
2. *Morella cerifera*	S	FAC+	10. *Dichanthelium* sp.	H	
3. *Vaccinium corymbosum*	S	FACW	11. *Osmunda cinnomoea*	H	FACW+
4. *Liquidambar styraciflua*	T	FAC+	12. *Rubus* sp.	S	
5. *Liriodendron tulipifera*	T	FAC	13. *Sphagnum* sp.	H	NL
6. *Acer rubrum*	T	FAC	14.		
7. *Osmunda regalis*	H	OBL	15.		
8. *Juncus effusus*	H	FACW+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation Present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):** ____ **Stream, Lake, or Tide Gauge** __X__ **Aerial Photographs** ____ **Other** ____ **No Recorded Data Available** **Field Observations:** **Depth of Surface Water:** N/A (in.) **Depth to Free Water in Pit:** >24 (in.) **Depth to Saturated Soil:** ~10 (in.)	**Wetland Hydrology Indicators** **Primary Indicators:** ____ **Inundated** ____ **Saturated in Upper 12"** ____ **Water Marks** ____ **Drift Lines** ____ **Sediment Deposits** __X__ **Drainage Patterns in Wetlands** **Secondary Indicators:** __X__ **Oxidized Roots Channels in Upper 12"** __X__ **Water-Stained Leaves** ____ **Local Soil Survey Data** __X__ **FAC-Neutral Test** ____ **Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology Present

0 wet

SOILS

W013

Map Unit Name
(Series and Phase): Wasda muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		10YR 2/1			Sandy Loam
10-24		10YR 2/1			Clay Loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

NW Maple Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS
Applicant / Owner: North Carolina Turnpike Authority
Investigator: S. Beck (CZR Inc. Environmental Consultants)

Date: 18 Dec 2007
County: Currituck
State: North Carolina

Do normal circumstances exist on the site? Yes X No ____
Is the site significantly disturbed (Atypical situation)? Yes ____ No X
Is the area a potential problem area? Yes ____ No X
(explain on reverse if needed)

Comm ID: D up
Transect ID: N/A
Plot ID: N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Pinus taeda*	T	FAC
2. *Liriodendron tulipifera*	T	FAC
3. *Acer rubrum*	T/S	FAC
4. *Quercus alba*	T	FACU
5. *Quercus nigra*	T	FAC
6. *Fagus grandifolia*	T	FACU
7.	T	FAC
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >70%

Remarks:

Wetland Vegetation Present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology Not Present

D up

SOILS

Map Unit Name
(Series and Phase): Munden loamy sand **Drainage Class:** moderately well drained

Taxonomy (Subgroup): thermic Aquic Hapludults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		10YR 2/1			Sandy Loam
6-24		10YR 4/4			Sandy Loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil Not Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

NW Maple Swamp

~ NW MAPLE SWAMP
~ 1000' East of "A"

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W013

Project/Site: Aydlett Rd. SR 1140 Mid-Currituck Bridge	Date: 10-16-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc. Kelly Chandler, Steve Bic	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: 1A wet
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID:

VEGETATION

fern
aster

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Woodwardia areolata	H	OBL	9. Pinus taeda	T	FAC
2. Aster racemosus	H	OBL	10. Nyssa sylvatica var. biflora	S/T	OBL
3. Bacopa monnieri	H	OBL	11. Juncus effusus	H	FACW+
4. Scirpus cyperinus	S	OBL	12. Vaccinium corymbosum	S	FACW
5. Eleocharis tuberculosa	H	FACW+	13. Liquidambar styraciflua	T	FAC+
6. Morella cerifera	S	FAC+	14.		
7. Acer rubrum	T	FAC	15.		
8. Arundinaria gigantea	S	FACW	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). >75%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: NA (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

A wet

SOILS

WOI3

Map Unit Name (Series and Phase): Ws - Wasda muck Drainage Class: very poorly drained

Taxonomy (Subgroup): Typic Histic Humaquepts Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3"		10YR 2/1			LOAM
3-24"		10YR 3/1			SIL-TYLOAM

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: soil texture became silty clay loam in 18-24" Has hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)	Is this Sampling Point Within a Wetland?	(Circle) (Yes) No
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No		

Remarks: Meets all three wetland criteria

- NW MAPLE SWAMP - Power lines
- ~100' E of NWET 114

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Avdlett Rd, SR 1140 Mid-Currituck Applicant/Owner: NC Turnpike Authority Bridge Investigator: CZR Inc. - Kelly Church, Steve Beck	Date: 10-17-07 County: Currituck State: NC
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: NWET 114 Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus cyperinus	S	OBL	9. Andropogon virginicus	S	FAC-
2. Arundinaria gigantea	S	FACW	10. Eleocharis tuberculosa	H	FACW+
3. Juncus effusus	S	FACW+	11. Erianthus giganteus	S	FACW
4. Eupatorium capillifolium	S	FAC	12.		
5. Liquidambar styraciflua	S	FAC+	13.		
6. Acer rubrum	S	FAC	14.		
7. Polygala lutea	H	FACW+	15.		
8. Juncus biflorus	S	FACW	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). > 60%

Remarks:
Has wetland plants.

HYDROLOGY

__ Recorded Data (Describe in Remarks):
__ Stream, Lake, or Tide Gauge
__ Aerial Photographs
__ Other
__ No Recorded Data Available

Field Observations:
Depth of Surface Water: NA (in.)
Depth to Free Water in Pit: NA (in.)
Depth to Saturated Soil: 6-8 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
__ Inundated
X Saturated in Upper 12 Inches
__ Water Marks
__ Drift Lines
__ Sediment Deposits
__ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
__ Water-Stained Leaves
__ Local Soil Survey Data
__ FAC-Neutral Test
__ Other (Explain in Remarks)

Remarks:
Has wetland hydrology

SOILS

W013

Map Unit Name (Series and Phase): Ws-Wasda muck — Drainage Class: very poorly drained

Taxonomy (Subgroup): Typic Histic Humaquepts — Field Observations: Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10 YR 2/1			silty clay loam

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: 0-4" has many fibrous roots 6-24" had OR's present and small mottles. 20-24" exhibited heavy stripping. Has hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

Meets all three wetland criteria

-NW MAPLE SWAMP
Powerlines
- 100' WEST OF NWETH2

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Audlett Rd SR 1140 Mid-Currituck Bridge Applicant/Owner: NC Turnpike Authority Investigator: CZR, Inc - Kelly Chance, Steve Beck	Date: 10-17-07 County: Currituck State: NC
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: NWET 112 Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Pinus taeda	S	FAC	9.		
2. Rubus flagellaris	H	UPL	10.		
3. Eupatorium capilliifolium	H	FAC-	11.		
4. Solidago fistulosa	H	FAC+	12.		
5. Dichanthelium SP.	H	—	13.		
6. Andropogon virginicus	H	FAC-	14.		
7. Lonicera japonica	V/H	FAC-	15.		
8. Rhus copallinum	S	NI	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). < 50%

Remarks: Vegetation is maintained and/or cut by humans. Site is located under powerlines.

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (in.)
- Depth to Free Water in Pit: NA (in.)
- Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Does not have wetland hydrology

SOILS

Map Unit Name (Series and Phase): Ws - Wasda muck — Drainage Class: very poorly drained

Taxonomy (Subgroup): Thermic Histic Humaquepts — Field Observations: Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		2.5Y 5/3			Loamy Sand
16-24"		2.5Y 5/4			Loamy Sand

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- __ Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: Does not exhibit hydric soil characteristics

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)		(Circle)
Wetland Hydrology Present?	Yes (No)		
Hydric Soils Present?	Yes (No)	Is this Sampling Point Within a Wetland?	Yes (No)

Remarks: Does not meet wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W013

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** P10 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Saururus cernuus*	H	OBL	9. *Nyssa biflora*	T	OBL
2. *Woodwardia areolata*	H	OBL	10. *Persea palustris*	T	FACW
3. *Smilax rotundifolia*	V	FAC	11. *Cornus foemina*	T	FACW-
4. *Woodwardia virginica*	H	OBL	12. *Arundinaria gigantea*	S	FACW
5. *Osmunda regalis*	H	OBL	13.		
6. *Acer rubrum*	T	FAC	14.		
7. *Liriodendron tulipifera*	T	FAC	15.		
8. *Quercus phellos*	T	FACW-	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12"**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- X **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology Present

SOILS

WD13

Map Unit Name
(Series and Phase): Wasda muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		10YR 2/1			Loamy Sand/Muck mix
8-24		10YR 2/1	10YR 4/2	moderate distinct stripping	Clay Loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	X Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator

Wetland Soil Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___		

Remarks:

200' ~~west~~ East of P10

-50' west between Flags X and W

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Aydlett Rd. SR 1140 Mid-Currituck Bridge	Date: 10-17-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc - Kelly Chance, Steve Brown	State: NC
Do Normal Circumstances exist on the site? **(Yes)** No	Community ID: W/X
Is the site significantly disturbed (Atypical Situation)? Yes **(No)**	Transect ID:
Is the area a potential Problem Area? Yes **(No)** (If needed, explain on reverse.)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Hamamelis virginiana	S	FACU	9. Liriodendron tulipifera	T	FAC
2. Bignonia capreolata	V/H	FAC	10. Symplocus tinctoria	S/T	FAC
3. Lonicera japonica	V/H	FAC-	11.		
4. Liquidambar styraciflua	T	FAC+	12.		
5. Acer rubrum	T	FAC	13.		
6. Arundinaria gigantea	S	FACW	14.		
7. Quercus laurifolia	S	FACW	15.		
8. Carya glabra	S	FACU	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ≈ 50%

Remarks: Does not have wetland vegetation

HYDROLOGY

__ Recorded Data (Describe in Remarks): __ Stream, Lake, or Tide Gauge __ Aerial Photographs __ Other __ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: __ Inundated __ Saturated in Upper 12 Inches __ Water Marks __ Drift Lines __ Sediment Deposits __ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: NA (in.) Depth to Free Water in Pit: NA (in.) Depth to Saturated Soil: NA (in.)	Secondary Indicators (2 or more required): __ Oxidized Root Channels in Upper 12 Inches __ Water-Stained Leaves __ Local Soil Survey Data __ FAC-Neutral Test __ Other (Explain in Remarks)

Remarks: Does not have wetland hydrology

W/X

SOILS

Map Unit Name (Series and Phase): Ws - Wasda muck Drainage Class: very poorly drained

Taxonomy (Subgroup): Haplic Histic Humaquepts Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 3/4			loamy sand

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- __ Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: 0-2" had many small, fibrous roots. Entire profile lacked mottling, streaking.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)		(Circle)
Wetland Hydrology Present?	Yes (No)		
Hydric Soils Present?	Yes (No)	Is this Sampling Point Within a Wetland?	Yes (No)

Remarks:

Does not meet wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W013

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** BB **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL	9. *Smilax rotundifolia*	V	FAC
2. *Clethra alnifolia*	H	FACW	10.		
3. *Arundinaria gigantea*	S	FACW	11.		
4. *Acer rubrum*	T	FAC	12.		
5. *Liriodendron tulipifera*	T	FAC	13.		
6. *Quercus nigra*	T	FAC	14.		
7. *Vaccinium corymbosum*	S	FACW	15.		
8. *Symplocos tinctoria*	T	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation Present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12"**
- ____ **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology Present

BB wet

SOILS

WDB

Map Unit Name
(Series and Phase): Wasda muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		7.5YR 2/1			loamy sand
10-14		7.5YR 2/1	10YR 4/2 moderate distinct stripping		loamy sand
14-24		10Y/R 4/2			silty clay loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
_X_ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
_X_ Listed On Local Hydric Soils List
_X_ Listed on National Hydric Soils List
_X_ Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes _X_ No ___
Wetland Hydrology Present? Yes _X_ No ___
Hydric Soils Present? Yes _X_ No ___

Is the Sampling Point Within a Wetland? Yes _X_ No ___

Remarks:

150' North of BB

- Wooded "Island" in Field ~300' west of Point #9 west of Maple Swamp North of Aydlett Rd.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Aydlett Rd, SR 1140 Mid-Currituck	Date: 10-15-07
Applicant/Owner: NC Turnpike Authority Bridge	County: Currituck
Investigator: CZR, Inc - Kelly Chance, Steve Beck	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: A/A 1
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Arundanaria gigantea	S	FACW	9. Alnus lyrata	S	OBL
2. Nyssa sylvatica var biflora	T	OBL	10. Clethra alnifolia	S	FACW
3. Acer rubrum	S/T	FAC	11. Toxicodendron radicans	H/V	FAC
4. Liriodendron tulipifera	T	FAC	12. Woodwardia areolata	H	OBL
5. Liquidambar styraciflua	T	FAC+	13. Smilax rotundifolia	V	FAC
6. Persea borbonia	S/T	FACW	14.		
7. Vitis rotundifolia	V	FAC	15.		
8. Lonicera japonica	H/V	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). >50%

Remarks: Has some wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (in.)
- Depth to Free Water in Pit: NA (in.)
- Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Does not exhibit wetland hydrology

AA 2

SOILS

Map Unit Name (Series and Phase): At - Augusta fine sandy loam Drainage Class: somewhat poorly drained

Field Observations

Taxonomy (Subgroup): Thermic Aeric Ochraqualfs Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 2/1			SANDY LOAM

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: Dry, many fine roots in 0-8".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)		(Circle)
Wetland Hydrology Present?	Yes (No)	Is this Sampling Point Within a Wetland?	Yes (No)
Hydric Soils Present?	(Yes) No		

Remarks:

Does not meet all three wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W013

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** nwet164 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL
2. *Magnolia virginiana*	T	FACW+
3. *Vaccinium corymbosum*	S	FACW
4. *Smilax rotundifolia*	V	FAC
5. *Acer rubrum*	T	FAC
6. *Liquidambar styraciflua*	T	FAC+
7. *Liriodendron tulipifera*	T	FAC
8. *Symplocus tinctoria*	T/S	FAC
9. *Vitis* sp.	V	
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

nwet 164

SOILS

W013

Map Unit Name (Series and Phase): Wasda muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** **No**

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24		7.5 YR 2.5/1			loamy sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	X Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampling Point**		
Wetland Hydrology Present?	Yes X	No ___	**Within a Wetland?**	Yes X	No ___
Hydric Soils Present?	Yes X	No ___			

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W012

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** nwet185 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL	9.		
2. *Persea palustris*	T	FACW	10.		
3. *Clethra alnifolia*	S	FACW	11.		
4. *Ilex opaca*	T	FAC-	12.		
5. *Vaccinium corymbosum*	S	FACW	13.		
6. *Liquidambar styraciflua*	T	FAC+	14.		
7. *Acer rubrum*	T	FAC	15.		
8. *Asimina triloba*	T/S	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >87%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):**
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

NWET 185

SOILS

1005

Map Unit Name
(Series and Phase): Ponzer muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Terric Medisaprists **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12					organic debris/peat
12-24		10YR 2/2			silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- X Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W03

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** nwet200 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL
2. *Leucothoe axillaris*	H/S	FACW
3. *Perseus palustris*	T/S	FACW
4. *Ilex opaca*	T	FAC-
5. *Symplocos tinctoria*	T	FAC
6. *Clethra alnifolia*	S	FACW
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >83%

Remarks:

Wetland Vegetation present

HYDROLOGY

Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (In.)

Depth to Free Water In Pit: >24 (In.)

Depth to Saturated Soil: >24 (In.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

NWET 2400

SOILS

W03

Map Unit Name
(Series and Phase): Wasda muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes___ No___**

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20		10YR 2/1			Sandy Loam
20-24		10YR 2/1	10YR 4/2 moderate distinct stripping		Sandy Loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampling Point**
Wetland Hydrology Present?	Yes X	No ___	**Within a Wetland?** Yes X No___
Hydric Soils Present?	Yes X	No ___	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual) W03

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 17 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NE12W
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Ligustrum sinense*	shrub	FACW
2. *Liquidambar styraciflua*	tree	FAC+	10. *Vaccinium corymbosum*	shrub	FAC
3. *Quercus nigra*	tree	FAC	11. *Woodwardia areolata*	herb	OBL
4. *Pinus taeda*	tree	FAC	12. *Osmunda cinnamomea*	herb	FACW+
5. *Oxydendron arboreum*	tree	FACU	13.		
6. *Prunus serotina*	sapling	FACU	14.		
7. *Persia borbonia*	shrub	FACW	15.		
8. *Magnolia virginiana*	sapling	FACW+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 83

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water:	0 (in.)
Depth to Standing Water in Pit:	>10 (in.)
Depth to Saturated Soil:	>10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- x Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaf Litter
- x Local Soil Survey Data
- x FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NE12W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W012

Map Unit Name
(Series and Phase): Tomotley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic loam
2-18	B	10YR3/1.5			fine sandy loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	_X_ Listed on Local Hydric Soils List
___ Reducing Conditions	_X_ Listed on National Hydric Soils List
_X_ Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 17 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NE12U
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Ligustrum sinense*	shrub	FACW
2. *Liquidambar styraciflua*	tree	FAC+	10. *Vaccinium corymbosum*	shrub	FAC
3. *Quercus nigra*	tree	FAC	11.		
4. *Pinus taeda*	tree	FAC	12.		
5. *Oxydendron arboreum*	tree	FACU	13.		
6. *Prunus serotina*	sapling	FACU	14.		
7. *Persia borbonia*	shrub	FACW	15.		
8. *Quercus falcata*	tree	FACU-	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 70

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

DATA FORM (Community "NE12U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Tomolley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic loam
2-18	B	10YR3/2		none	fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Chroma greater than 2 with no mottles.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual) 1/08

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 17 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.) / S. Bee	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: NE60W
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Solidago* sp.	herb	N/A
2. *Liquidamber styraciflua*	tree	FAC+	10.		
3. *Quercus nigra*	tree	FAC	11.		
4. *Myrica cerifera*	shrub	FAC+	12.		
5. *Clethra alnifolia*	shrub	FACW	13.		
6. *Arundinaria gigantea*	shrub	FACW	14.		
7. *Eupatorium perfoliatum*	herb	FACW+	15.		
8. *Thelypteris thelypteroides*	herb	FACW+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks: Within tree line abutting power line easement.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Standing Water in Pit: n/a (in.)
- Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- x Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- x Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NE50W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W013

Map Unit Name
(Series and Phese): Ponzer muck — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Terric Haplosaprists — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic loam
3-18	B	10YR4/1.5	10YR5/3	weak	fine sandy loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed on Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks: >70% Coated Sand Grains

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No			
Hydric Soils Present?	Yes	No			

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS Applicant/Owner: North Carolina Turnpike Authority Investigator: M. Mitchell (PB Americas, Inc.) /S. BECK	Date: 17 October 2007 Co./City: Currituck County State: North Carolina
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse)	Community ID: NE50U Transect ID: not applicable Plot ID: not applicable

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9.		
2. *Liquidamber styraciflua*	tree	FAC+	10.		
3. *Pinus taeda*	tree	FAC	11.		
4. *Liriodendraon tulipifera*	tree	FACU	12.		
5. *Myrica cerifera*	shrub	FAC+	13.		
6. *Arundinaria gigantea*	shrub	FACW	14.		
7. *Solidago* sp.	herb	N/A	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 83

Remarks: Within tree line abutting power line easement.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water:	0 (in.)
Depth to Standing Water in Pit:	>14 (in.)
Depth to Saturated Soil:	14 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "NE60U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Ponzer muck — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Terric Haplosaprists — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-18	B	10YR6/3			fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Non-hydric sandy inclusion. "Sand ridges" of local terminology.
~50% Coated Sand Grains

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W013

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 19 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.) / S. Beck	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: ~~NEG4W~~ X24
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	sapling	FACW	9. *Mikania scandens*	herb	FACW+
2. *Liquidambar styraciflua*	sapling	FAC+	10. *Thelypteris thelypteroides*	herb	FACW+
3. *Pinus taeda*	sapling	FAC	11. *Cinna arundinacea*	herb	FACW
4. *Myrica cerifera*	shrub	FAC+	12. *Solidago sp.*	herb	N/A
5. *Baccharis halimifolia*	shrub	FAC	13. *Eleocharis sp.*	herb	N/A
6. *Scirpus cyperinus*	herb	OBL	14.		
7. *Eupatoriadelphus maculatus*	herb	FACW-	15.		
8. *Eupatorium perfoliatum*	herb	FACW+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks: PEM/SS

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

X No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Standing Water in Pit: n/a (in.)
- Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- X Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions). Desiccation cracks.

x24w

DATA FORM (Community "~~NE64W~~" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

w014

Map Unit Name
(Series and Phase): Tomotley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-2	A				organic loam
2-18	B	10YR4/1.5	10YR5/3	weak	fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 19 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.) / S. BECK	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: ~~NCSWWS~~ X24 UP
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	sapling	FACW	9.		
2. ~~*Liquidambar styraciflua*~~	sapling	~~FAC+~~	10.		
3. *Pinus taeda*	tree / sapling	FAC	11.		
4. *Myrica cerifera*	shrub	FAC+	12.		
5. *Baccharis halimifolia*	shrub	FAC	13.		
6. *Solidago sp.*	herb	N/A	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks: PEM/SS

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

__x__ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: > 24 (in.)

Depth to Saturated Soil: > 24 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

X24 vp

DATA FORM (Community "~~HE64B~~" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Tomotley fine sandy loam — Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-24	B	10YR4/2			fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Chroma greater than 2 with no mottles. / Sand grains mostly uncoated (<50% coated)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual) W013

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 15 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: SWBW
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Thelypterus thelypteroides*	herb	FACW+
2. *Liquidambar styraciflua*	tree	FAC+	10. *Smilax rotundifolia*	vine	FAC
3. *Quercus nigra*	sapling	FAC	11. *Toxicodendron radicans*	vine	FAC
4. *Magnolia virginiana*	sapling	FACW+	12.		
5. *Carpinus caroliniana*	sapling	FAC	13.		
6. *Viburnum nudum*	shrub	FACW+	14.		
7. *Chasmanthium laxum*	herb	FACW-	15.		
8. *Woodwardia areolata*	herb	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

__x__ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >12 (in.)

Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- __x__ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- __x__ Water-Stained Leaf Litter
- __x__ Local Soil Survey Data
- __x__ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "SW8W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W013

Map Unit Name
(Series and Phase): Portsmouth fine sandy loam — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Typic Umbraquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-18	B	2.5Y6/1	10YR6/4	prominent	clayey silty sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	_X_ Listed on Local Hydric Soils List
___ Reducing Conditions	_X_ Listed on National Hydric Soils List
_X_ Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W015

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 15 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse)	Community ID: SW1W Transect ID: not applicable Plot ID: not applicable

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW
2. *Liquidambar styraciflua*	tree	FAC+
3. *Nyssa sylvatica*	tree	FAC
4. *Magnolia virginiana*	sapling	FACW+
5. *Arundinaria gigantea*	shrub	FACW
6. *Myrica cerifera*	shrub	FAC+
7. *Chasmanthium laxum*	herb	FACW-
8. *Woodwardia areolata*	herb	OBL
9. *Toxicodendron radicans*	herb	FAC
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >10 (in.)

Depth to Saturated Soil: >10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaf Litter
- X Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "SW1W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W015

Map Unit Name
(Series and Phase): Portsmouth fine sandy loam — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Typic Umbraquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic loam
3-18	B	10YR7/1.5			fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 15 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes / No	Community ID: SW8U
Is the site significantly disturbed (Atypical Situation)? Yes / No	Transect ID: not applicable
Is the area a potential Problem Area? Yes / No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Smilax bona-nox*	herb	FAC
2. *Liquidambar styraciflua*	tree	FAC+	10. *Toxicodendron radicans*	vine	FAC
3. *Quercus nigra*	tree	FAC	11.		
4. *Pinus taeda*	tree	FAC	12.		
5. *Liriodendron tulipifera*	tree	FACU	13.		
6. *Magnolia virginiana*	sapling	FACW+	14.		
7. *Woodwardia areolata*	herb	OBL	15.		
8. *Smilax rotundifolia*	vine	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 90

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Standing Water in Pit:	>16	(in.)
Depth to Saturated Soil:	>16	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "SW8U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Portsmouth fine sandy loam — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Typic Umbraquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-18	B	2.5Y6/3	10YR6/4	moderate	silty sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: Non-hydric inclusion.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 15 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse)	Community ID: SW1U Transect ID: not applicable Plot ID: not applicable

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Liquidambar styraciflua*	sapling	FAC+	9.		
2. *Arundinaria gigantea*	shrub	FACW	10.		
3. *Myrica cerifera*	shrub	FAC+	11.		
4. *Toxicodendron radicans*	herb	FAC	12.		
5. *Vicia sativa*	herb	FACU-	13.		
6. *Setaria italica*	herb	FACU	14.		
7. *Zea mays*	herb	U	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 57

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: >18 (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

DATA FORM (Community "SW1U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Portsmouth fine sandy loam, drained Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Typic Umbraquults Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				organic loam
3-18	B	10YR4/2			fine sandy loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
_X_ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: Higher chroma than typical Portsmouth loam.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W015

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 17 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** se26w **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sphagnum sp.*	H	NL	9. *Triadenum virginicum*	H	OBL
2. *Woodwardia virginica*	H	OBL	10.		
3. *Smilax laurifolia*	V	FACW+	11.		
4. *Acer rubrum*	T/S	FAC	12.		
5. *Magnolia virginiana*	T	FACW+	13.		
6. *Nyssa sylvatica*	T	FAC	14.		
7. *Persea palustris*	T	FACW	15.		
8. *Dulichium arundinaceum*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ **Inundated**
- X **Saturated in Upper 12"**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ____ **Oxidized Roots Channels in Upper 12"**
- X **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology Present

JE26W

SOILS

WO15

Map Unit Name
(Series and Phase): Ponzer muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Terric Medisaprists **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		7.5YR 2/1			mucky peat
12-24		7.5YR 2/1			silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- X Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?** **Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

WDI5

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 18 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: SE3W
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Magnolia tripetala*	sapling	FAC
2. *Pinus taeda*	tree	FAC	10. *Woodwardia areolata*	herb	OBL
3. *Quercus nigra*	tree	FAC	11. *Thelypteris thelypteroides*	herb	FACW+
4. *Magnolia virginiana*	sapling	FACW+	12. *Toxicodendron radicans*	vine	FAC
5. *Arundinaria gigantea*	shrub	FACW	13. *Smilax laurifolia*	vine	FACW+
6. *Clethra alnifolia*	shrub	FACW	14. *Smilax bona-nox*	vine	FAC
7. *Symplocus tinctoria*	sapling	FAC	15. *Vitis rotundifolia*	vine	FAC
8. *Persea borbonia*	sapling	FACW	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Standing Water in Pit:	>10	(in.)
Depth to Saturated Soil:	10	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- x Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaf Litter
- x Local Soil Survey Data
- x FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "SE3W" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

U015

Map Unit Name
(Series and Phase): Wasda muck — Drainage Class: very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-3	A				loam
3-18	B	10YR3/1			fine sandy loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
x Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
x Listed on Local Hydric Soils List
x Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No			
Hydric Soils Present?	Yes	No			

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 16 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: SE3U
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9.		
2. *Pinus taeda*	tree	FAC	10.		
3. *Quercus nigra*	tree	FAC	11.		
4. *Liriodendron tulipifera*	sapling	FACU	12.		
5. *Liquidambar styraciflua*	tree	FAC	13.		
6. *Clethra alnifolia*	shrub	FACW	14.		
7. *Kalmia latifolia*	shrub	FACU	15.		
8. *Smilax rotundifolia*	vine	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 75

Remarks: Kalmia latifolia appears to be escaped cultivar.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0 (in.)
Depth to Standing Water in Pit:	>18 (in.)
Depth to Saturated Soil:	>18 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Much drier-than-normal year (drought conditions).

DATA FORM (Community "SE3U" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name
(Series and Phase): Dragston loamy fine sand — Drainage Class: somewhat poorly drained

Taxonomy (Subgroup): thermic Aeric Endoaquults — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-2	A				sandy loam
2-18	B	10YR4/2			silty fine sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Chroma of 2 with no mottles.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W010

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 13 Nov 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RW3-95 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL	9. *Quercus nigra*	T	FAC
2. *Persea palustris*	T/S	FACW	10. *Clethra alnifolia*	H/S	FACW
3. *Carpinus caroliniana*	T	FAC	11.		
4. *Arundinaria gigantea*	S	FACW	12.		
5. *Taxodium distichum*	T	OBL	13.		
6. *Acer rubrum*	T	FAC	14.		
7. *Osmunda cinnomomea*	H	FACW+	15.		
8. *Morella cerifera*	S	FAC+	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: -8 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

SW3-15

SOILS

Map Unit Name
(Series and Phase): Tomotely fine sandy loam **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2					organic debris
2-24		7.5YR 2.5/1		slightly stripped	sandy loam/muck

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	X Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?** **Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___	

Remarks:

Great ~~Dismal~~ Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W018

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 31 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RW3-47 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda regalis*	H	OBL	9.		
2. *Saururus cernuus*	H	OBL	10.		
3. *Acer rubrum*	T/S	FAC	11.		
4. *Carpinus caroliniana*	T	FAC	12.		
5. *Woodwardia areolata*	H	OBL	13.		
6. *Pinus taeda*	T	FAC	14.		
7. *Ilex opaca*	T	FAC-	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >85%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):** ____ **Stream, Lake, or Tide Gauge** X **Aerial Photographs** ____ **Other** ____ **No Recorded Data Available** **Field Observations:** **Depth of Surface Water:** N/A (in.) **Depth to Free Water in Pit:** >24 (in.) **Depth to Saturated Soil:** >24 (in.)	**Wetland Hydrology Indicators** **Primary Indicators:** ____ Inundated ____ Saturated In Upper 12" ____ Water Marks ____ Drift Lines ____ Sediment Deposits X Drainage Patterns in Wetlands **Secondary Indicators:** X Oxidized Roots Channels in Upper 12" X Water-Stained Leaves ____ Local Soil Survey Data X FAC-Neutral Test ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

SOILS

W018

Map Unit Name
(Series and Phase): Tomotely fine sandy loam **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24		10YR 3/1			silty clay loam

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	X Other (Explain in Remarks)

Remarks:
S7: Dark surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X **No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X **No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X **No** ___		

Remarks:

Great ~~Dismal~~ Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W019

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 12 Nov 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RE5 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Toxicodendron radicans*	V	FAC	9.		
2. *Woodwardia areolata*	H	OBL	10.		
3. *Arundinaria gigantea*	S	FACW	11.		
4. *Carpinus caroliniana*	T	FAC	12.		
5. *Smilax rotundifolia*	V	FAC	13.		
6. *Acer rubrum*	T	FAC	14.		
7. *Quercus michauxii*	T	FACW-	15.		
8. *Quercus nigra*	T	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (In.)

Depth to Free Water in Pit: >24 (In.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated In Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns In Wetlands

Secondary Indicators:
- X Oxidized Roots Channels In Upper 12"
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

RES WET

SOILS

W019

Map Unit Name
(Series and Phase): Dragston fine sandy loam **Drainage Class:** somewhat poorly drained

Taxonomy (Subgroup): Thermic Aeric Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1					organic debris
1-24		10YR 3/2			loamy sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	X Listed On Local Hydric Soils List
___ Reducing Conditions	X Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	X Other (Explain in Remarks)

Remarks:
Wetland located adjacent to streambed
Soil contrasts strongly compared to upland soil
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X **No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X **No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X **No** ___		

Remarks:

Wetland on east side of Rt 158 and connects to Great Dismal Swamp on west side via culvert

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS
Applicant / Owner: North Carolina Turnpike Authority
Investigator: S. Beck (CZR Inc. Environmental Consultants)

Date: 12 Nov 2007
County: Currituck
State: North Carolina

Do normal circumstances exist on the site? Yes X No ____
Is the site significantly disturbed (Atypical situation)? Yes ____ No X
Is the area a potential problem area? Yes ____ No X
(explain on reverse if needed)

Comm ID: RE5 up
Transect ID: N/A
Plot ID: N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Ligustrum sinense*	H	FAC
2. *Asimina triloba*	S	FAC
3. *Campsis radicans*	V	FAC
4. *Acer rubrum*	T	FAC
5. *Celtis occidentalis*	T	FACU
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 80%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (In.)

Depth to Saturated Soil: >24 (In.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated In Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology Not present

RE5 up

SOILS

Map Unit Name
(Series and Phase): Dragston fine sandy loam **Drainage Class:** somewhat poorly drained

Taxonomy (Subgroup): thermic Aeric Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2			loamy sand
12-24		2.5Y 5/6			loamy sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
_X_ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
_X_ Listed On Local Hydric Soils List
_x_ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil Not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes _X_ No ___
Wetland Hydrology Present? Yes ___ No _X_
Hydric Soils Present? Yes ___ No _X_

Is the Sampling Point Within a Wetland? Yes _X_ No ___

Remarks:

Upland woods just north of RE5 wetland on east side of Rt 158

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

WD18

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 31-Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RW3-44 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix nigra*	T	OBL	9. *Andropogon* sp.	H	
2. *Acer rubrum*	S/T	FAC	10.		
3. *Typha* sp.	H/S	OBL	11.		
4. *Juncus effusus*	H	FACW+	12.		
5. *Boehmeria cylindrica*	H	FACW+	13.		
6. *Morella cerifera*	S	FAC+	14.		
7. *Woodwardia areolata*	H	OBL	15.		
8. *Woodwardia virginica*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):**
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

RW3-44

SOILS

W018

Map Unit Name
(Series and Phase): Tomotely fine sandy loam **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Ochraquults **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20					muck
20-24		10YR 2/1			sandy loam

Hydric Soil Indicators:

- X Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks:
S7: Dark Surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

Wetland meadow beneath powerlines between Rt 158 and Great ~~Dismal~~ Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W018

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 31 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** RW3-35 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Woodwardia areolata*	H	OBL	9.		
2. *Juncus effusus*	H	FACW+	10.		
3. *Arundinaria gingantea*	S	FACW	11.		
4. *Liriodendron tulipifera*	T	FAC	12.		
5. *Acer rubrum*	T	FAC	13.		
6. *Smilax rotundifolia*	V	FAC	14.		
7. *Clethra alnifolia*	H/S	FACW	15.		
8. *Persea palustris*	T/S	FACW	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:
Drought Conditions
Wetland Hydrology present

SOILS

Map Unit Name
(Series and Phase): Tomotely fine sandy loam Drainage Class: poorly drained

Taxonomy (Subgroup): thermic Typic Ochraquults Confirm Mapped Type? Yes ___ No ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1					organic debris
1-6		10YR 2/1		slightly stripped	loamy sand/muck
6-20		10YR 2/1			loamy sand/muck
20-24		10YR 3/2			sandy loam/muck

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	_X_ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	_X_ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	_X_ Listed On Local Hydric Soils List
___ Reducing Conditions	_X_ Listed on National Hydric Soils List
_X_ Gleyed or Low-Chroma Colors	_X_ Other (Explain in Remarks)

Remarks:
S1: Sandy Mucky Mineral Indicator
S7: Dark Surface Indicator
Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes _X_ No ___
Wetland Hydrology Present? Yes _X_ No ___
Hydric Soils Present? Yes _X_ No ___

Is the Sampling Point Within a Wetland? Yes _X_ No ___

Remarks:

Great ~~Bisreal~~ Swamp

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W027/29

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 10 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** EMW-A **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix nigra*	S/T	OBL	9. *Woodwardia areolata*	H	OBL
2. *Magnolia virginiana*	T	FACW+	10. *Liquidambar styraciflua*	T	FAC+
3. *Morella cerifera*	S	FAC+	11. *Carpinus caroliniana*	S/T	FAC
4. *Nyssa biflora*	T	OBL	12. *Juncus roemeranus*	H	OBL
5. *Smilax rotundifolia*	V	FAC	13.		
6. *Arundinaria gigantea*	H	FACW	14.		
7. *Acer rubrum*	T	FAC	15.		
8. *Saururus cernuus*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: -10" (in.)

Depth to Saturated Soil: 0" (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

-Wetland Hydrology present

SOILS

WD27/29

Map Unit Name(Series and Phase): Connaby muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Hystic Humaquepts **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		7.5YR 2/1			loamy sand/muck

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___		

Remarks:

-Wet hardwood forest bordering intermittent stream (EMS-C)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 10 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** EMWAup **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Ilex opaca*	T	FAC-	10.		
3. *Liquidambar styraciflua*	T	FAC	11.		
4. *Quercus nigra*	T	FAC	12.		
5. *Toxicodendron radicans*	V	FAC	13.		
6. *Aralia spinosa*	S/T	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >83%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24" (in.)

Depth to Saturated Soil: >-24" (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- ___ **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology not present

SOILS

Map Unit Name(Series and Phase): Connaby muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Hystic Humaquepts **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20"		10YR 2/2			sand
20-24"		10YR 2/2	2.5Y 5/4	frequent/large	sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

-Wetland Soils not present
-Most likely a Dragston transitional area, although map shows all Connaby muck

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

-Mixed pine/hardwood forest

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

~032/33

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** EMW-F **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda regalis*	H	OBL	9. *Woodwardia areolata*	H	OBL
2. *Magnolia virginiana*	T	FACW+	10.		
3. *Woodwardia virginica*	H	OBL	11.		
4. *Nyssa biflora*	T	OBL	12.		
5. *Morella cerifera*	T	FAC+	13.		
6. *Arundinaria gigantea*	H	FACW	14.		
7. *Acer rubrum*	T	FAC	15.		
8. *Saururus cernuus*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24" **(in.)**

Depth to Saturated Soil: -10" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- X **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- X **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- X **Other (Explain in Remarks)**

Remarks:

-Tapered Trunks

-Wetland Hydrology present

SOILS

W032/33

Map Unit Name(Series and Phase): Munden fine sand **Drainage Class:** moderately well drained

Taxonomy (Subgroup): thermic Aquic Hapludults **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 2/1			loamy sand/muck

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present
-Most likely within Portsmouth area, although map shows Munden

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**		
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?**	**Yes** X	**No** ___
Hydric Soils Present?	**Yes** X	**No** ___			

Remarks:

-Wet hardwood forest
-Upland boundary defined by development

Dare County

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W029/40

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 7 May 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** DCB wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	S	FAC	9. *Parthenocissus quinquefolia*	V	FAC
2. *Arundinaria gigantea*	H	FACW	10. *Pteridium aquilinum*	H	FACU
3. *Juncus effusus*	H	FACW+	11. *Quercus falcata*	S	FAC+
4. *Juncus roemeranus*	H	OBL	12. *Fraxinus pennsylvanica*	S	FACW
5. *Juncus gerardii*	H	OBL	13.		
6. *Smilax bona-nox*	V	FAC	14.		
7. *Morella cerifera*	S	FAC+	15.		
8. *Lonicera japonica*	V	FAC-	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >83%

Remarks:

Wetland Vegetation Present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A **(in.)**

Depth to Free Water in Pit: -5" **(in.)**

Depth to Saturated Soil: -18" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- X **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology Present

SOILS

w03a/40

Map Unit Name
(Series and Phase): Conaby muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"		10YR 2/1			loamy sand
2-20"		10YR 4/2			loamy sand
20-24"		10YR 4/2			loamy sand/ large woody debris

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed On Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

Previously filled with wetland soils, exists under maintained powerlines.

Dare County

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 7 May 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** DCB up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	S	FAC
2. *Quercus falcata*	S	FAC+
3. *Pteridium aquilinum*	H	FACU
4. *Parthenocissus quinquefolia*	V	FAC
5. *Lonicera japonica*	V	FAC-
6. *Smilax bona-nox*	V	FAC
7. *Morella cerifera*	S	FAC+
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >71%

Remarks:

Wetland Vegetation Present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A **(in.)**

Depth to Free Water in Pit: >-24" **(in.)**

Depth to Saturated Soil: >-24" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

Wetland Hydrology Not Present

SOILS

Map Unit Name
(Series and Phase): Conaby muck **Drainage Class:** very poorly drained

Taxonomy (Subgroup): thermic Histic Humaquepts **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"		10YR 2/1			loamy sand
2-24"		10YR 4/3			loamy sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

-High proportion of uncoated sand grains
-Wetland Soil Not Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

-Previously filled with wetland soils, exists under maintained powerlines.
-Large pile of fill

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W035-3Ra/41-45

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 22 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** DC-D **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix nigra*	T	OBL	9. *Woodwardia areolata*	H	OBL
2. *Persea borbonia*	T	FACW	10. *Liquidambar styraciflua*	T	FAC+
3. *Morella cerifera*	S	FAC+	11. *Carpinus caroliniana*	T	FAC
4. *Osmunda regalis*	H	OBL	12. *Juncus roemeranus*	H	OBL
5. *Smilax rotundifolia*	V	FAC	13.		
6. *Arundinaria gigantea*	H	FACW	14.		
7. *Acer rubrum*	T	FAC	15.		
8. *Saururus cernuus*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: -10" **(in.)**

Depth to Saturated Soil: -5" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ____ **Inundated**
- X **Saturated in Upper 12"**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- X **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology present

SOILS

~25-38a/41-45

Map Unit Name(Series and Phase): Osier fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		10YR 2/1			muck
6-24		10YR 3/2			sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?** **Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___	

Remarks:

-Wet Maritime Forest and Swamp located in large parallel interdunal swales

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 22 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** DC-up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	T	FAC	9.		
2. *Pinus taeda*	T	FAC	10.		
3. *Liquidambar styraciflua*	T	FAC	11.		
4. *Illex opaca*	T	FAC-	12.		
5. *Smilax bona-nox*	V	FAC	13.		
6. *Morella cerifera*	S	FAC+	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >83%

Remarks:

Wetland Vegetation Present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A **(in.)**

Depth to Free Water in Pit: >-24" **(in.)**

Depth to Saturated Soil: >-24" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

Wetland Hydrology Not Present

SOILS

Map Unit Name
(Series and Phase): Fripp fine sand **Drainage Class:** excessively drained

Taxonomy (Subgroup): uncoated Typic Quartzipsamments **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"		10YR 2/1			loamy sand
2-24"		10YR 4/3			loamy sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

-High proportion of uncoated sand grains
-Wetland Soil Not Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

-Forested parallel dune ridge series

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W046-47

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 20 Oct 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** NOW-E **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Persea borbonia*	S/T	FACW	10.		
3. *Phragmites australis*	H/S	FACW	11.		
4. *Juncus* sp.	H		12.		
5. *Spartina cynosuroides*	H	OBL	13.		
6. *Arundinaria gigantea*	H	FACW	14.		
7. *Vaccinium corybosum*	S	FACW	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):** ___ **Stream, Lake, or Tide Gauge** _X_ **Aerial Photographs** ___ **Other** ___ **No Recorded Data Available** **Field Observations:** **Depth of Surface Water:** NA (in.) **Depth to Free Water in Pit:** -5" (in.) **Depth to Saturated Soil:** 0" (in.)	**Wetland Hydrology Indicators** **Primary Indicators:** ___ **Inundated** _X_ **Saturated in Upper 12"** ___ **Water Marks** ___ **Drift Lines** ___ **Sediment Deposits** ___ **Drainage Patterns in Wetlands** **Secondary Indicators:** _X_ **Oxidized Roots Channels in Upper 12"** ___ **Water-Stained Leaves** ___ **Local Soil Survey Data** _X_ **FAC-Neutral Test** ___ **Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology present

SOILS

wv046-47

Map Unit Name(Series and Phase): Corolla fine sand **Drainage Class:** moderately well drained to somewhat poorly drained

Taxonomy (Subgroup): uncoated Aquic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"		10YR 3/2			sand
6-20"		10YR 4/3			sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**		
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?**	**Yes** X	**No** ___
Hydric Soils Present?	**Yes** X	**No** ___			

Remarks:

-Currituck Sound eastern shore, including marsh transitioning to wetland shrub

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 8 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** NOWE up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	S/T	FACU+	9.		
2. *Diospyros virginiana*	S/T	FAC	10.		
3. *Smilax bona-nox*	V	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >50%

Remarks:

-Wetland Vegetation not present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24"(in.)

Depth to Saturated Soil: >-24"(in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

Wetland Hydrology not present

SOILS

Map Unit Name
(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained

Taxonomy (Subgroup): thermic Typic Udipsamments **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 5/3			sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

Upland boundaries for Extended Project Area Outer Banks Wetlands (EOW/P, NOW/P) defined by sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

WD48

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** AP3wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Persea borbonia*	S/T	FACW	10.		
3. *Baccharis halmifolia*	S	FAC	11.		
4. *Juncus* sp.	H		12.		
5. *Spartina cynosuroides*	H	OBL	13.		
6. *Salix nigra*	S/T	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: 0" **(in.)**

Depth to Saturated Soil: 0" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- X **Inundated**
- ___ **Saturated in Upper 12"**
- X **Water Marks**
- X **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology present

SOILS

W048

Map Unit Name(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained
Taxonomy (Subgroup): uncoated Typic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 4/1			sand

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
____ Reducing Conditions
X Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed On Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Hydric Soils Present? Yes X No ____
Is the Sampling Point Within a Wetland? Yes X No ____

Remarks:

-Currituck Sound eastern shore, including marsh transitioning to wetland shrub

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** AP3 up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	S/T	FACU+	9.		
2. *Baccharis halmifolia*	S	FAC	10.		
3. *Smilax bona-nox*	V	FAC	11.		
4. *Persea borbonia*	S/T	FACW	12.		
5. Morella cerifera	S	FAC+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >50%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24"**(in.)**

Depth to Saturated Soil: >-24"**(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- ___ **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology not present

SOILS

Map Unit Name
(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained
Taxonomy (Subgroup): uncoated Typic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 6/4			sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed On Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ____
Wetland Hydrology Present? Yes ____ No X
Hydric Soils Present? Yes ____ No X
Is the Sampling Point Within a Wetland? Yes ____ No X

Remarks:

Upland boundaries for shoreline wetlands defined by OHWM, sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W04Q

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** AP2wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Persea borbonia*	S/T	FACW	10.		
3. *Baccharis halmifolia*	S	FAC	11.		
4. *Juncus* sp.	H		12.		
5. *Spartina cynosuroides*	H	OBL	13.		
6. *Salix nigra*	S/T	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: 0" **(in.)**

Depth to Saturated Soil: 0" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- X **Inundated**
- ___ **Saturated in Upper 12"**
- X **Water Marks**
- X **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology present

SOILS

w049

Map Unit Name(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained
Taxonomy (Subgroup): uncoated Typic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 4/1			sand

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
____ Reducing Conditions
X Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed On Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Hydric Soils Present? Yes X No ____

Is the Sampling Point Within a Wetland? Yes X No ____

Remarks:

-Currituck Sound eastern shore, including marsh transitioning to wetland shrub

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** AP2 up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Diospyros virginica*	S	FAC	9.		
2. *Ilex vomitoria*	S	FAC	10.		
3. *Smilax rotundifolia*	V	FAC	11.		
4. *Persea borbonia*	S/T	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24"**(in.)**

Depth to Saturated Soil: >-24"**(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- ___ **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology not present

SOILS

Map Unit Name
(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained
Taxonomy (Subgroup): uncoated Typic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 6/4			sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed On Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes** X **No** ____
Wetland Hydrology Present? **Yes** ____ **No** X
Hydric Soils Present? **Yes** ____ **No** X

Is the Sampling Point Within a Wetland? **Yes** ____ **No** X

Remarks:

Upland boundaries for shoreline wetlands defined by OHWM, sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W050

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** AP1wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morella cerifera*	S	FAC+	9.		
2. *Persea borbonia*	S/T	FACW	10.		
3. *Baccharis halmifolia*	S	FAC	11.		
4. *Juncus* sp.	H		12.		
5. *Spartina cynosuroides*	H	OBL	13.		
6. *Salix nigra*	S/T	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- **___ Stream, Lake, or Tide Gauge**
- **_X_ Aerial Photographs**
- **___ Other**

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: 0" **(in.)**

Depth to Saturated Soil: 0" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- **_X_ Inundated**
- **___ Saturated in Upper 12"**
- **_X_ Water Marks**
- **_X_ Drift Lines**
- **___ Sediment Deposits**
- **___ Drainage Patterns in Wetlands**

Secondary Indicators:
- **___ Oxidized Roots Channels in Upper 12"**
- **___ Water-Stained Leaves**
- **___ Local Soil Survey Data**
- **_X_ FAC-Neutral Test**
- **___ Other (Explain in Remarks)**

Remarks:

-Wetland Hydrology present

SOILS

w050

Map Unit Name(Series and Phase): Corolla fine sand **Drainage Class:** moderately well drained to somewhat poorly drained

Taxonomy (Subgroup): uncoated Aquic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 4/1			sand

Hydric Soil Indicators:

____ Histosol	____ Concretions
____ Histic Epipedon	____ High Organic Content in Surface Layer in Sandy Soils
____ Sulfidic Odor	____ Organic Streaking in Sandy Soils
____ Aquic Moisture Regime	____ Listed On Local Hydric Soils List
____ Reducing Conditions	____ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	____ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ____	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X	**No** ____	**Within a Wetland?**	**Yes** X **No** ____
Hydric Soils Present?	**Yes** X	**No** ____		

Remarks:

-Currituck Sound eastern shore, including marsh transitioning to wetland shrub

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 15 Jan 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** AP1 up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	S/T	FACU+	9.		
2. *Ilex vomitoria*	S	FAC	10.		
3. *Smilax rotundifolia*	V	FAC	11.		
4. *Persea borbonia*	S/T	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >50%

Remarks:

-Wetland Vegetation not present

HYDROLOGY

Recorded Data (Describe in Remarks):
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24"**(in.)**

Depth to Saturated Soil: >-24"**(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- ___ **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology not present, ORs present > -20"

SOILS

Map Unit Name
(Series and Phase): Corolla fine sand **Drainage Class:** moderately well drained to somewhat poorly drained
Taxonomy (Subgroup): uncoated Aquic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		10YR 3/2			loamy sand
18-20		10YR 5/3			sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed On Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

Wetland Soil not present, > 50% uncoated sand grains throughout

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Hydric Soils Present? Yes ____ No X

Is the Sampling Point Within a Wetland? Yes ____ No X

Remarks:

Upland boundaries for shoreline wetlands defined by OHWM sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W05le/E

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 16 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** EOW-S **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Taxodium distichum*	T	OBL	9.		
2. *Persea borbonia*	T	FACW	10.		
3. *Morella cerifera*	S	FAC+	11.		
4. *Osmunda regalis*	H	OBL	12.		
5. *Smilax rotundifolia*	V	FAC	13.		
6. *Lonicera japonica*	V	FAC-	14.		
7. *Toxicoendron radicans*	V	FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >85%

Remarks:

-Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24" (in.)

Depth to Saturated Soil: >-15" (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

-Wetland Hydrology present

SOILS

wosle/e

Map Unit Name(Series and Phase): Duckston fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** _____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		10YR 2/1			loamy sand
3-20		2.5Y 5/2			sand
20-24		GLEY 1.5/10Y			sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X **No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X **No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X **No** ___		

Remarks:

-Maritime Swamp surrounding inlet to Currituck Sound

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W057-58a

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 16 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** EOW-J **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix nigra*	S/T	OBL	9.		
2. *Persea borbonia*	S/T	FACW	10.		
3. *Baccharis* sp.	H/S		11.		
4. *Phragmites australis*	H/S	FACW	12.		
5. *Smilax rotundifolia*	V	FAC	13.		
6. *Morella cerifera*	S	FAC+	14.		
7. *Juncus* sp.	H		15.		
8. *Spartina cynosuroides*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24" **(in.)**

Depth to Saturated Soil: >-24" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns In Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

-Wetland Hydrology present

SOILS

W057-58a

Map Unit Name(Series and Phase): Corolla fine sand **Drainage Class:** moderately well drained to somewhat poorly drained

Taxonomy (Subgroup): uncoated Aquic Quartzipsamments **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13"		2.5Y 6/3			sand
13-24"		10YR 6/2	7.5YR 5/8	many, small, distinct	sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	X Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** X	**No** ___	**Within a Wetland?**	**Yes** X **No** ___
Hydric Soils Present?	**Yes** X	**No** ___		

Remarks:

-Currituck Sound eastern shore, including marsh transitioning to wetland shrub
-Upland boundary defined by developement

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W060

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 16 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** EOW-E **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda cinnamomea*	H	FACW+	9.		
2. *Toxicodendron radicans*	V	FAC	10.		
3. *Osmunda regalis*	H	OBL	11.		
4. *Acer rubrum*	S/T	FAC	12.		
5. *Smilax bona nox*	V	FAC	13.		
6. *Morella cerifera*	S	FAC+	14.		
7. *Pinus taeda*	T	FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24" (in.)

Depth to Saturated Soil: >-24" (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

-Wetland Hydrology present

SOILS

W060

Map Unit Name(Series and Phase): Duckston fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ____ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13"		2.5Y 6/3			sand
13-24"		10YR 6/2	7.5YR 5/8	many, small, distinct	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed On Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___

Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

-Roadside interdunal swale/depressional wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 8 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** EOW up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	S/T	FACU+	9.		
2. *Toxicodendron radicans*	V	FAC	10.		
3. *Smilax bona-nox*	V	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >50%

Remarks:

-Wetland Vegetation not present

HYDROLOGY

___ **Recorded Data (Describe In Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA **(in.)**

Depth to Free Water in Pit: >-24"**(in.)**

Depth to Saturated Soil: >-24"**(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- ___ **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ___ **Oxidized Roots Channels in Upper 12"**
- ___ **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- ___ **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology not present

SOILS

Map Unit Name
(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained

Taxonomy (Subgroup): thermic Typic Udipsamments **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 5/3			sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

Upland boundaries for Extended Project Area Outer Banks Wetlands (EOW/P, NOW/P) defined by sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W061

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 16 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** EOW-D **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda cinnamomea*	H	FACW+	9.		
2. *Toxicodendron radicans*	V	FAC	10.		
3. *Osmunda regalis*	H	OBL	11.		
4. *Acer rubrum*	S/T	FAC	12.		
5. *Smilax bona nox*	V	FAC	13.		
6. *Morella cerifera*	S	FAC+	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

-Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24" (in.)

Depth to Saturated Soil: >-24" (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

-Wetland Hydrology present

SOILS

w061

Map Unit Name
(Series and Phase): Newhan -Corolla complex — **Drainage Class:** excessively drained to somewhat poorly drained
N: thermic Typic Udipsamments
Taxonomy (Subgroup): C: uncoated Aquic Quartzipsamments **Confirm Mapped Type? Yes**_____ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13"		2.5Y 6/3			sand
13-24"		10YR 6/2	7.5YR 5/8	many, small, distinct	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed On Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

-Wetland Soils present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___
Hydric Soils Present? Yes X No ___
Is the Sampling Point Within a Wetland? Yes X No ___

Remarks:

-Roadside interdunal swale/depressional wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 8 July 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** EOW-A-up **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	S/T	FACU+	9.		
2. *Toxicodendron radicans*	V	FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). <50%

Remarks:

-Wetland Vegetation not present

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- **___ Stream, Lake, or Tide Gauge**
- **_X_ Aerial Photographs**
- **___ Other**

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (in.)

Depth to Free Water in Pit: >-24"(in.)

Depth to Saturated Soil: >-24"(in.)

Wetland Hydrology Indicators

Primary Indicators:
- **___ Inundated**
- **___ Saturated in Upper 12"**
- **___ Water Marks**
- **___ Drift Lines**
- **___ Sediment Deposits**
- **___ Drainage Patterns in Wetlands**

Secondary Indicators:
- **___ Oxidized Roots Channels in Upper 12"**
- **___ Water-Stained Leaves**
- **___ Local Soil Survey Data**
- **___ FAC-Neutral Test**
- **___ Other (Explain in Remarks)**

Remarks:

Wetland Hydrology not present

SOILS

Map Unit Name
(Series and Phase): Newhan fine sand **Drainage Class:** excessively drained

Taxonomy (Subgroup): thermic Typic Udipsamments **Confirm Mapped Type? Yes___ No___**

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		10YR 5/3			sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed On Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes___ No X

Remarks:

Upland boundaries defined by sandy ridges, dunes and/or development

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W066/67

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 6 May 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No **Is the site significantly disturbed (Atypical situation)?** Yes No X **Is the area a potential problem area?** Yes No X **(explain on reverse if needed)**	**Comm ID:** SE12E-wet **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda regalis*	H	OBL	9.		
2. *Juncus effusus*	H	FACW+	10.		
3. *Osmunda cinnomomea*	H	FACW+	11.		
4. *Acer rubrum*	S/T	FAC	12.		
5. *Liquidambar styraciflua*	S/T	FAC+	13.		
6. *Pinus taeda*	T	FAC	14.		
7. *Salix nigra*	S/T	OBL	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation Present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):**
- ___ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ___ **Other**

___ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A **(in.)**

Depth to Free Water in Pit: -10" **(in.)**

Depth to Saturated Soil: -2" **(in.)**

Wetland Hydrology Indicators

Primary Indicators:
- ___ **Inundated**
- X **Saturated in Upper 12"**
- ___ **Water Marks**
- ___ **Drift Lines**
- ___ **Sediment Deposits**
- ___ **Drainage Patterns in Wetlands**

Secondary Indicators:
- X **Oxidized Roots Channels in Upper 12"**
- X **Water-Stained Leaves**
- ___ **Local Soil Survey Data**
- X **FAC-Neutral Test**
- ___ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology Present

SOILS

W066/67

Map Unit Name
(Series and Phase): Duckston fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"		10YR 2/2			loamy sand/organic
2-24"		2.5Y 5/2			loamy sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	X High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
X Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

Wetland Soil Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point Within a Wetland?** **Yes** X **No** ___
Wetland Hydrology Present?	**Yes** X	**No** ___	
Hydric Soils Present?	**Yes** X	**No** ___	

Remarks:

Inter-dunal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 6 May 2008 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** SE13E-UP **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	T/S	FACU+
2. *Smilax rotundifolia*	V	FAC
3. *Campsis radicans*	V	FACU
4. *Opuntia stricta*	S	FACU-
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 25%

Remarks:

Wetland Vegetation Not Present

HYDROLOGY

____ **Recorded Data (Describe In Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >-24"(in.)

Depth to Saturated Soil: >-24"(in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12"**
- ____ **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators:
- ____ **Oxidized Roots Channels in Upper 12"**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks:

Wetland Hydrology Not Present

SOILS

Map Unit Name
(Series and Phase): Duckston fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ___ **No** X

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5Y 6/4			Sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil Not Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X
Hydric Soils Present? Yes ___ No X

Is the Sampling Point Within a Wetland? Yes ___ No X

Remarks:

Sandy Ridge/Dune

RI-W
West side of Rt. 12

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W068

Project/Site: NC 12 Mid-Currituck Bridge	Date: 10-23-07
Applicant/Owner: NC Turnpike Authority U	County: Currituck
Investigator: CZR, TNC - Kelly Chance, Steve Keck	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: RI
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: W
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix caroliniana	T	OBL	9.		
2. Morella cerifera	S	FAC+	10.		
3. Andropogon virginicus	SH	FAC-	11.		
4. Juncus effusus	H	FACW+	12.		
5. Juncus canadensis	H	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). >80%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NA	(in.)
Depth to Free Water in Pit:	NA	(in.)
Depth to Saturated Soil:	NA	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- X Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Used water mark as primary indicator for wetland hydrology

SOILS

W065

Map Unit Name (Series and Phase): Du - Dune land Drainage Class: _____

Field Observations

Taxonomy (Subgroup): Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5 Y 6/3			SAND

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- __ Listed on Local Hydric Soils List
- __ Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: 6-24" had OR's throughout

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)	
Wetland Hydrology Present?	Yes No		
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland?	Yes No

Remarks:

Meets all three wetland criteria

R1-UP

northwest of R1-W

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: NC 12 - Mid-Currituck Bridge	Date: 10-23-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc - Kelly Shannon, Steve Berk	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: R1
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: UP
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Eremochloa ophiuroides	H	NI	9.		
2. Chrysopsis gossypina	H	NI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Does not have wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (in.)
- Depth to Free Water in Pit: NA (in.)
- Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Does not have wetland hydrology

SOILS

Map Unit Name (Series and Phase): Du - Dunelland Drainage Class: _____

Field Observations

Taxonomy (Subgroup): Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24"		2.5 Y 5/3			Sand

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- __ Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- __ Listed on Local Hydric Soils List
- __ Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks:

Does not have hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)		(Circle)
Wetland Hydrology Present?	Yes (No)		
Hydric Soils Present?	Yes (No)	Is this Sampling Point Within a Wetland?	Yes (No)

Remarks:

Does not meet all wetland criteria

RZ-W
Point taken between flags RZ-2, RZ-3

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W069.

Project/Site: NC 12 Mid-Currituck Bridge	Date: 10-24-01
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc - Kelly Chance Stevenson	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: RZ-2
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix caroliniana	T	OBL	9.		
2. Acer rubrum	T/H	FAC	10.		
3. Morella cerifera	S/H	FAC+	11.		
4. Vaccinium corymbosum	S	FACW	12.		
5. Polygonum hydropiperoides	H	OBL	13.		
6. Smilax rotundifolia	V/H	FAC	14.		
7. Nyssa sylvatica var. biflora	H	OBL	15.		
8. Toxicodendron radicans	V/H	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). >75%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
__ Stream, Lake, or Tide Gauge	Primary Indicators:
__ Aerial Photographs	__ Inundated
__ Other	X Saturated in Upper 12 Inches
__ No Recorded Data Available	__ Water Marks
	__ Drift Lines
	__ Sediment Deposits
	__ Drainage Patterns in Wetlands
Field Observations:	Secondary Indicators (2 or more required):
Depth of Surface Water: NA (in.)	X Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: NA (in.)	__ Water-Stained Leaves
Depth to Saturated Soil: 3" (in.)	__ Local Soil Survey Data
	__ FAC-Neutral Test
	__ Other (Explain in Remarks)

Remarks: Has wetland hydrology

W06A

SOILS 0 to 6% slopes

Map Unit Name (Series and Phase): CrB - Corolla-Duckston complex Drainage Class: moderately well-drained and somewhat poorly-well-drained

Taxonomy (Subgroup): Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5"		10 YR 2/2			SANDY CLAYLOAM
5-20"		2.5Y 6/3			SANDY LOAM
20-24"		2.5Y 6/1			SAND

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Has hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)	(Circle)	
Wetland Hydrology Present?	(Yes) No	Is this Sampling Point Within a Wetland?	(Yes) No
Hydric Soils Present?	(Yes) No		

Remarks:

Meets all three wetland criteria

R4-W
between flag #s
R4-6, R4-7

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Edge of POW.

Project/Site: NC 12 - Mid Currituck Bridge	Date: 10-24-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc - Kelly Channell, Steve Peck	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: R4-6
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Toxicodendron radicans	V/H	FAC	9. Morella cerifera	S	FAC+
2. Parthenocissus quinquefolia	V/H	FAC	10. Baccharis halimifolia	S	FACW
3. Aster racemosus	H	OBL	11. Polygonum hydropiperoides	H	OBL
4. Mikania scandens	H	FACW+	12.		
5. Juncus canadensis	H	OBL	13.		
6. Hydrocotyle umbellata	H	OBL	14.		
7. Andropogon virginicus	H	FAC-	15.		
8. Salix caroliniana	T	OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). > 75%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (in.)
- Depth to Free Water in Pit: -6 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

SOILS

dlx 2-40% slopes

Edge of 8014

Map Unit Name (Series and Phase): DwD - Dune land, Newhan com Drainage Class: excessively drained

Taxonomy (Subgroup): Dune land / thermic typic Udipsamments Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"		2.5YR 2/1			
1-4"		10YR 4/1			Loamy sand
4-24"		5Y 5/2			Loamy Sand

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- (X) Reducing Conditions
- (X) Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- (X) Organic Streaking in Sandy Soils
- __ Listed on Local Hydric Soils List
- __ Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks:

Has hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes) No	Is this Sampling Point Within a Wetland?	(Yes) No
Hydric Soils Present?	(Yes) No		

Remarks:

Meets all three wetland criteria

near flag B-26

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W070

Project/Site: NC 12 Mid-Currituck Brj	Date: 10-23-07
Applicant/Owner:	County: Currituck
Investigator: CZR, Inc-Kelly Clarice, Steve Bick	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: B-26
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC+	9. Vitis rotundifolia	V/H	FAC
2. Acer rubrum	T	FAC	10. Juncus effusus	H	FACW+
3. Typha angustifolia	S	OBL	11. Berchemia cylindrica	H	FACW+
4. Morella cerifera	S	FAC+	12. Woodwardia areolata	H	OBL
5. Pinus taeda	S	FAC	13. Osmunda cinnamomea	H	FACW+
6. Vaccinium corymbosum	S	FACW	14.		
7. Mikania scandens	H	FACW+	15.		
8. Rhexia nashii	H	FACW+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). >75%

Remarks: Has wetland plants.

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NA	(in.)
Depth to Free Water in Pit:	NA	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

SOILS W070

Map Unit Name (Series and Phase): Os - Osier fine sand Drainage Class: poorly drained

Field Observations

Taxonomy (Subgroup): Hyperthermic Typic Psammaquents Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5"		10 YR 3/2			SAND
5-15"		2.5 YR 5/2			SAND
15-24"		5Y 5/1			SAND

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: many OR's in 5-15".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No	Is this Sampling Point Within a Wetland?	(Yes) No

Remarks:

Meets all three wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 22 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** b-24 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	T/S	FACU+	9.		
2. *Vitis* sp.	V		10.		
3. *Acer rubrum*	T	FAC	11.		
4. *Prunus serotina*	T	FACU	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). <33%

Remarks:

Wetland Vegetation Not Present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >18 (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology Not Present

SOILS

Map Unit Name
(Series and Phase): Dune land-Newhan complex 0-40% slopes **Drainage Class:** excessively drained

Taxonomy (Subgroup): themic Typic Udipsamments (NeC) **Confirm Mapped Type? Yes** ____ **No** ____

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18		2.5Y 5/3			sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil Not Present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** ____	**No** X	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** ____	**No** X	**Within a Wetland?**	**Yes** ____ **No** X
Hydric Soils Present?	**Yes** ____	**No** X		

Remarks:

Dunes

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

WO72

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 24 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** b d-9 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Osmunda cinnomomea*	H	FACW+	9.		
2. *Morella cerifera*	S	FAC+	10.		
3. *Acer rubrum*	T	FAC	11.		
4. *Salix caroliniana*	T	OBL	12.		
5. *Persea palustris*	T	FACW	13.		
6. *Boehmeria cylindrica*	H	FACW+	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (In.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12"
- X Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

B-D-9

SOILS

W070

Map Unit Name
(Series and Phase): Osier fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 2/1			muck
2-24		GLEY1 5/10Y			sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point Within a Wetland?** **Yes** X **No** ___
Wetland Hydrology Present?	**Yes** X	**No** ___	
Hydric Soils Present?	**Yes** X	**No** ___	

Remarks:

SW of Timbuck II
W of Stream Flag D-9

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

WO70.

Project/Site: Mid-Currituck Bridge - Section B	Date: 10-24-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc. - Kelly Chance, Steve Beck	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: bn-7
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Persea borbonia	T/S	FACW	9. Smilax rotundifolia	V	FAC
2. Acer rubrum	T	FAC	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Vaccinium corymbosum	S/H	FACW	12.		
5. Osmunda cinnamomea	H	FACW+	13.		
6. Glyceria striata	H	OBL	14.		
7. Woodwardia areolata	H	OBL	15.		
8. Woodwardia virginica	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NA	(in.)
Depth to Free Water in Pit:	NA	(in.)
Depth to Saturated Soil:	8"	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

SOILS

W070

Map Unit Name (Series and Phase): Os- Osier fine sand Drainage Class:

Taxonomy (Subgroup): Aquic Typic Psammaquents Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3"		10YR 2/1			SAND
3-7"		10YR 2/2			SAND
7-24"		2.5Y 5/3			SAND

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- X Reducing Conditions
- __ Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks: Stripped matrix beyond 7"

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)	Is this Sampling Point Within a Wetland?	(Circle) (Yes) No
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No		

Remarks:

Meets all three wetland criteria

northwest of bn-28
westsouthwest of bn-29

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W070.

Project/Site: Mid-Currituck Bridge - Section B	Date: 10-24-07
Applicant/Owner: NC Turnpike Authority	County: Currituck
Investigator: CZR, Inc - Kelly Chancl, Steve Beck	State: NC
Do Normal Circumstances exist on the site? (Yes) No	Community ID: bn-29
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Glyceria striata	H	OBL	9. Vaccinium corymbosum	S	FACW
2. Vitis rotundifolia	V	FAC	10. Liquidambar styraciflua	S	FAC+
3. Smilax rotundifolia	V	FAC	11.		
4. Woodwardia virginica	H	OBL	12.		
5. Ilex opaca	T	FAC-	13.		
6. Acer rubrum	T	FAC	14.		
7. Persea borbonia	T/S	FACW	15.		
8. Nyssa sylvatica var. biflora	T	OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 80%

Remarks: Has wetland plants

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NA (in.)
- Depth to Free Water in Pit: NA (in.)
- Depth to Saturated Soil: 7" (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Has wetland hydrology

SOILS W070

Map Unit Name (Series and Phase): Os - Osier fine sand Drainage Class: Poorly drained

Taxonomy (Subgroup): Hydric Typic Psammaquents Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"		10 YR 4/2			SAND
8-24"		2.5 Y 6/3			SAND

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- __ Listed on Local Hydric Soils List
- __ Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks:

Has hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)	(Circle)	
Wetland Hydrology Present?	(Yes) No	Is this Sampling Point Within a Wetland?	(Yes) No
Hydric Soils Present?	(Yes) No		

Remarks:

Meets all three wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

WOZ O

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 24 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** bn-30 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus virginiana*	T	FACU+	9.		
2. *Acer rubrum*	T	FAC	10.		
3. *Vaccinium corymbosum*	S	FACW	11.		
4. *Liquidambar styraciflua*	T	FAC+	12.		
5. *Ilex opaca*	T	FAC-	13.		
6. *Perseus palustris*	T	FACW	14.		
7. *Nyssa biflora*	T	FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). >70%

Remarks:

Wetland Vegetation present

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake, or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Roots Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology not present

SOILS

WO70

Map Unit Name
(Series and Phase): Osier fine sand **Drainage Class:** poorly drained

Taxonomy (Subgroup): thermic Typic Psammaquents **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 2/1			loamy sand
1-2		2.5Y 4/1			sand
2-24		2.5Y 4/3			sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed On Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Wetland Soil not present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** X	**No** ___	**Is the Sampling Point**
Wetland Hydrology Present?	**Yes** ___	**No** X	**Within a Wetland?** **Yes** ___ **No** X
Hydric Soils Present?	**Yes** ___	**No** X	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W077-84

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 25 Oct 2007 **County:** Currituck **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** R9 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Liquidambar styraciflua*	T/S	FAC+	9. *Solidago* sp.	H	
2. *Salix caroliniana*	T/S	OBL	10. *Andropogon* sp.	H	
3. *Diospyros virginiana*	T	FAC	11. *Dichanthelium* sp.	H	
4. *Osmunda regalis*	H	OBL	12.		
5. *Scirpus cyperinus*	H	OBL	13.		
6. *Polygonum hydropiperoides*	H	OBL	14.		
7. *Spartina patens*	H	FACW	15.		
8. *Scirpus* sp.	H		16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

HYDROLOGY

____ **Recorded Data (Describe in Remarks):**
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: >24 (in.)

Depth to Saturated Soil: >24 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12"
- X Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- X Oxidized Roots Channels in Upper 12"
- X Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

SOILS

W077-84

Map Unit Name
(Series and Phase): Dune land-Newhan complex 0-40% slopes **Drainage Class:** excessively drained

Taxonomy (Subgroup): thermic Typic Udipsamments (NeC) **Confirm Mapped Type? Yes** ____ **No** ____

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1					organic debris
1-15		2.5Y 4/2			sandy loam
15-24		5Y 4/2			sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	_X_ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed On Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
_X_ Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** _X_ **No** ___	**Is the Sampling Point**	
Wetland Hydrology Present?	**Yes** _X_ **No** ___	**Within a Wetland?**	**Yes** _X_ **No** ___
Hydric Soils Present?	**Yes** _X_ **No** ___		

Remarks:

Isolated roadside depressional wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual) W687

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 20 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: C1
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Smilax bona-nox*	vine	FAC
2. *Salix caroliniana*	sapling	OBL	10. *Rubus cuneifolius*	herb	FACU
3. *Quercus phellos*	sapling	FAC+	11.		
4. *Thelypteris thelypteroides*	herb	FACW+	12.		
5. *Boehmeria cylindrica*	herb	FACW+	13.		
6. *Woodwardia areolata*	herb	OBL	14.		
7. *Juncus effusus*	herb	FACW+	15.		
8. *Toxicodendron radicans*	vine	FAC	16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 90

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

_x_ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Standing Water in Pit: n/a (in.)

Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- _x_ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- _x_ Water-Stained Leaf Litter
- _x_ Local Soil Survey Data
- _x_ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Inter-dune wetland. Much drier-than-normal year (drought conditions).

DATA FORM (Community "W1" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W087

Map Unit Name
(Series and Phase): Ousley fine sand — Drainage Class: moderately well drained

Taxonomy (Subgroup): Thermic, uncoated Aquic Quartzipsamments — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-2	A				slightly organic silty sand
2-20	B	5Y8/1			fine sand with slight organic streaking

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	_x_ Organic Streaking in Sandy Soils
_x_ Aquic Moisture Regime	_x_ Listed on Local Hydric Soils List
___ Reducing Conditions	_x_ Listed on National Hydric Soils List
_x_ Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes No
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present?	Yes	No		

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

WD85

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 23 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: CA2
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	tree	FACW	9. *Magnolia virginiana*	shrub	FACW+
2. *Vaccinium corymbosum*	shrub	FACW	10. *Rosa multiflora*	shrub	UPL
3. *Myrica cerifera*	shrub	FAC+	11. *Polygonum punctatum*	herb	FACW+
4. *Thelypteris thelypteroides*	herb	FACW+	12. *Chasmanthium laxum*	herb	FACW-
5. *Boehmeria cylindrica*	herb	FACW+	13. *Arthraxon hispidus*	herb	FACU+
6. *Woodwardia areolata*	herb	OBL	14. *Eupatorium capillifolium*	herb	FACU
7. *Juncus effusus*	herb	FACW+	15. *Cyperus strigosus*	herb	FACW+
8. *Toxicodendron radicans*	vine	FAC	16. *Desmodium tenuifolium*	herb	FAC

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 81

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Standing Water in Pit:	4	(in.)
Depth to Saturated Soil:	2	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- x Saturated in Upper 12 Inches
- x Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaf Litter
- x Local Soil Survey Data
- x FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PFO1A above excavated pond. Much drier-than-normal year (drought conditions).

DATA FORM (Community "W1" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

J098

Map Unit Name
(Series and Phase): Ousley fine sand — Drainage Class: moderately well drained

Taxonomy (Subgroup): Thermic, uncoated Aquic Quartzipsamments — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-2	A				slightly organic silty sand
2-18	B	6Y6/1			fine sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No			
Hydric Soils Present?	Yes	No			

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

W086a

Project/Site: Mid-Currituck Sound Bridge EIS	Date: 27 October 2007
Applicant/Owner: North Carolina Turnpike Authority	Co./City: Currituck County
Investigator: M. Mitchell (PB Americas, Inc.)	State: North Carolina
Do Normal Circumstances exist on the site? Yes No	Community ID: CA62
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: not applicable
Is the area a potential Problem Area? Yes No	Plot ID: not applicable
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Pinus taeda*	tree	FAC	9. *Woodwardia areolata*	herb	OBL
2. *Acer rubrum*	sapling	FACW	10. *Juncus effusus*	herb	FACW+
3. *Myrica cerifera*	shrub	FAC+	11. *Boehmeria cylindrica*	herb	FACW+
4. *Vaccinium corymbosum*	shrub	FACW	12. *Desmodium tenuifolium*	herb	FAC
5. *Magnolia virginiana*	shrub	FACW+	13. *Sium suave*	herb	OBL
6. *Persia borbonia*	shrub	FACW	14. *Carex* sp.	herb	N/A
7. *Salix caroliniana*	sapling	OBL	15. *Hydrocotyle americana*	herb	OBL
8. *Arundinaria gigantea*	shrub	FACW	16. *Toxicodendron radicans*	vine	OBL

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100

Remarks

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- x Aerial Photographs
- ___ Other (Explain in Remarks)

x No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 - 2 (in.)

Depth to Standing Water in Pit: 3 (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- x Inundated
- x Saturated in Upper 12 Inches
- ___ Water Marks
- x Drift Lines
- ___ Sediment Deposits
- x Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaf Litter
- ___ Local Soil Survey Data
- x FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Freshwater tidal inlet. Shown as inundated in client-provided aerials.

DATA FORM (Community "CA62" continued)
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SOILS

W0866

Map Unit Name
(Series and Phase): Ousley fine sand — Drainage Class: moderately well drained

Taxonomy (Subgroup): Thermic, uncoated Aquic Quartzipsamments — Field Observations Confirmed Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0-2	A	10YR6/1			organic muck
2-18	B	10YR6/1	10YR6/6	Mod. developed	silty fine sand

Hydric Soil Indicators:

___ Histosol	___ Concretions
_X_ Histic Epipedon	_X_ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
_X_ Aquic Moisture Regime	_X_ Listed on Local Hydric Soils List
_X_ Reducing Conditions	_X_ Listed on National Hydric Soils List
_X_ Gleyed or Low-Chroma Colors	___ Other (Explain in Remarks)

Remarks: Muck mantle due to freshwater tidal incursions.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	Is this Sampling Point Within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No			
Hydric Soils Present?	Yes	No			

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

W100 - 102

Project / Site: Mid-Currituck Sound Bridge EIS **Applicant / Owner:** North Carolina Turnpike Authority **Investigator:** S. Beck (CZR Inc. Environmental Consultants)	**Date:** 30 Oct 2007 **County:** Currituok **State:** North Carolina
Do normal circumstances exist on the site? Yes X No ____ **Is the site significantly disturbed (Atypical situation)?** Yes ____ No X **Is the area a potential problem area?** Yes ____ No X **(explain on reverse if needed)**	**Comm ID:** R18 **Transect ID:** N/A **Plot ID:** N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Pinus taeda*	T	FAC	9.		
2. *Acer rubrum*	T	FAC	10.		
3. *Salix caroliniana*	T/S	OBL	11.		
4. *Morella cerifera*	S	FAC+	12.		
5. *Vaccinium corymbosum*	S	FACW	13.		
6. *Nyssa* sp.	T	FAC	14.		
7. *Smilax rotundifolia*	V	FAC	15.		
8. *Osmunda regalis*	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

Wetland Vegetation present

HYDROLOGY

___ **Recorded Data (Describe in Remarks):** ___ **Stream, Lake, or Tide Gauge** _X_ **Aerial Photographs** ___ **Other** ___ **No Recorded Data Available** **Field Observations:** **Depth of Surface Water:** N/A (in.) **Depth to Free Water in Pit:** >24 (in.) **Depth to Saturated Soil:** >24 (in.)	**Wetland Hydrology Indicators** **Primary Indicators:** ___ Inundated ___ Saturated in Upper 12" ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands **Secondary Indicators:** _X_ Oxidized Roots Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data _X_ FAC-Neutral Test ___ Other (Explain in Remarks)

Remarks:
Drought Conditions
Wetland Hydrology present

SOILS

2100-102

Map Unit Name
(Series and Phase): Corolla-Duckston complex 0-6% slopes **Drainage Class:** poorly drained
uncoated Aquic Quartzipsamments (CoB)
Taxonomy (Subgroup): thermic Typic psammaquents (Dt) **Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2					organic debris
2-24		2.5Y 4/2			sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
_X_ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
_X_ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

Wetland Soil present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes _X_ No ___
Wetland Hydrology Present? Yes _X_ No ___
Hydric Soils Present? Yes _X_ No ___

Is the Sampling Point Within a Wetland? Yes _X_ No ___

Remarks:

Isolated roadside depressional wetland

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: S. BECK (CZR)
3. Date of evaluation: 12/8/07
4. Time of evaluation: 1100
5. Name of stream: —
6. River basin: North River
7. Approximate drainage area: 25-50 acres
8. Stream order: 1
9. Length of reach evaluated: 100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. -77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

Rt. 158 Just South of Riviera Tire Shop (EDI) (S1)

14. Proposed channel work (if any):
15. Recent weather conditions: Dry, Cold, Clear
16. Site conditions at time of visit: Saturated, No Surface Water

17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ___(I-IV)

18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:

19. Does channel appear on USGS quad map? (YES) NO 20. Does channel appear on USDA Soil Survey? (YES) NO

21. Estimated watershed land use: ___% Residential ___% Commercial ___% Industrial 25 % Agricultural 75 % Forested ___% Cleared / Logged ___% Other (_____)

22. Bankfull width: 10-15' 23. Bank height (from bed to top of bank): 2-3'

24. Channel slope down center of stream: / Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)

25. Channel sinuosity: ___Straight / Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 58 **Comments:** Drains into Canal that drains into Deep Creek

Called Intermittent Stream by USACE Dec 6 07

Evaluator's Signature S. J. Beck **Date** 12/8/07

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STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	2
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	2
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	6
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	3
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	2
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	2
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	2
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	2
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	2
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	4
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	1
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	3
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	3
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	6
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	5
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	1
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	1
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	3
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				58

* These characteristics are not assessed in coastal streams.

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North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 12-7-07	Project: Mid-Currituck Sound Bridge	Latitude:
Evaluator: C. Beck (PEA)	Site: At 158 - just south of Riviera Tire	Longitude:
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 25.5	County: Currituck (ED-1)	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	0	(1)	2	3
3. In-channel structure: riffle-pool sequence	0	(1)	2	3
4. Soil texture or stream substrate sorting	0	1	(2)	3
5. Active/relic floodplain	0	1	(2)	3
6. Depositional bars or benches	0	(1)	2	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	0	(1)	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	0	0.5	(1)	1.5
12. Natural valley or drainageway	0	(0.5)	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	(No = 0)		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7)				
14. Groundwater flow/discharge	0	1	(2)	3
15. Water in channel and > 48 hrs since rain, or Water in channel -- dry or growing season	0	(1)	2	3
16. Leaflitter	1.5	(1)	0.5	0
17. Sediment on plants or debris	0	(0.5)	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	(1)	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 6)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	(0)	0.5	1	1.5
23. Bivalves	(0)	1	2	3
24. Fish	(0)	0.5	1	1.5
25. Amphibians	(0)	0.5	1	1.5
26. Macrobenthos (note diversity and abundance)	(0)	0.5	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	(0)	0.5	1	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5 SAV = 2.0; (Other = 0)			

[b] Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: CZR
3. Date of evaluation: 10/11/07
4. Time of evaluation: 0930
5. Name of stream: —
6. River basin: North River
7. Approximate drainage area: 25-50 acres
8. Stream order: 1
9. Length of reach evaluated: 100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. -77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

West side of Rt 158 - (WD1) - South of Rest Area

14. Proposed channel work (if any):
15. Recent weather conditions: Upper 70's - Few showers
16. Site conditions at time of visit: Appear normal
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use: ___% Residential ___% Commercial ___% Industrial 50 % Agricultural 50 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 15'
23. Bank height (from bed to top of bank): 3-4'
24. Channel slope down center of stream: ✓ Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ✓ Straight ___Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 43 **Comments:** Canal Feeds into Deep Creek

Called waters - Not a stream by USACE Dec 6 07

Evaluator's Signature _____ **Date** 10/11/07

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WD1 Water - Not a stream

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	4
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	0
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	3
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	1
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	1
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	1
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	6
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	0
STABILITY	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	3
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	1
	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	5
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	1
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	4
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	4
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	2
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	2
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	2
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	3
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				53

* These characteristics are not assessed in coastal streams.

Waters not a Stream

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 10/11/07	**Project:** Currituck Sound Bridge	**Latitude:**
Evaluator: CZR (SB)	**Site:** RL 155 (WD1) (Wetl)	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 27.5	**County:** Currituck	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	(0)	1	2	3
3. In-channel structure: riffle-pool sequence	0	(1)	2	3
4. Soil texture or stream substrate sorting	0	(1)	2	3
5. Active/relic floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	(0)	1	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	(0)	0.5	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
14. Groundwater flow/discharge	0	1	2	(3)
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	1	2	(3)
16. Leaflitter	1.5	1	0.5	(0)
17. Sediment on plants or debris	0	(0.5)	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	(1)	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = 11.5)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	0	(0.5)	1	1.5
23. Bivalves	(0)	1	2	3
24. Fish	0	0.5	(1)	1.5
25. Amphibians	0	0.5	(1)	1.5
26. Macrobenthos (note diversity and abundance)	0	(0.5)	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	(1)	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5; SAV = 2.0; Other = 0			

[b] Items 20 and 21 focus on the presence of upland plants, item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: S. Beck (CZR)
3. Date of evaluation: 12/5/07
4. Time of evaluation: 1615
5. Name of stream: —
6. River basin: North
7. Approximate drainage area: 25-50 acres
8. Stream order: 2
9. Length of reach evaluated: 100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. -77.556611):_____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

(WD1) - East of Crest Area on Pt 157

14. Proposed channel work (if any):
15. Recent weather conditions: Sunny - Dry - Cold
16. Site conditions at time of visit: 1'-2' deep
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use: ___% Residential ___% Commercial ___% Industrial 50 % Agricultural 50 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 10'-30'
23. Bank height (from bed to top of bank): 5-20'
24. Channel slope down center of stream: ✓ Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ✓ Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 47 **Comments:** Canal feeds into Deep Creek called water - not a stream Dec 6, 07 by USACE

Evaluator's Signature_____ Date 12/5/07

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WDI - Water - not a stream

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	4
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	1
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	3
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	1
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	2
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	3
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	0
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	2
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	2
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	1
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	4
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	2
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	3
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	4
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	2
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	3
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				47

* These characteristics are not assessed in coastal streams.

Waters - not a stream

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 12/5/07	Project: Mid-Currituck Bridge EIS	Latitude:
Evaluator: S. Geer (CZR)	Site: (WD1) - Rt 158 (E)	Longitude:
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 27	County: Currituck	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	0	(1)	2	3
3. In-channel structure: riffle-pool sequence	0	1	(2)	3
4. Soil texture or stream substrate sorting	0	(1)	2	3
5. Active/relic floodplain	0	1	(2)	3
6. Depositional bars or benches	0	(1)	2	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	(0)	1	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	(0)	0.5	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
14. Groundwater flow/discharge	0	1	2	(3)
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	1	2	(3)
16. Leaflitter	1.5	1	0.5	(0)
17. Sediment on plants or debris	0	0.5	1	(1.5)
18. Organic debris lines or piles (Wrack lines)	0	(0.5)	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 8)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	(0)	0.5	1	1.5
23. Bivalves	(0)	1	2	3
24. Fish	(0)	0.5	1	1.5
25. Amphibians	(0)	0.5	1	1.5
26. Macrobenthos (note diversity and abundance)	0	(0.5)	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	(1.5)
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5 SAV = 2.0; (Other = 0)			

[b] Items 20 and 21 focus on the presence of upland plants, item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: C. BECK (CZR)
3. Date of evaluation: 12/19/07
4. Time of evaluation: 1100
5. Name of stream: ———
6. River basin: Currituck Sound
7. Approximate drainage area: 5-10 acres
8. Stream order: 1
9. Length of reach evaluated: 100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any): _____

Latitude (ex. 34.872312): _____ Longitude (ex. -77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other _____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): South of Timbuck II Shopping Plaza on the Outer Banks - (B-65) (S5)
14. Proposed channel work (if any): _____
15. Recent weather conditions: Sunny, Dry
16. Site conditions at time of visit: Channel 0-4" deep
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area: _____
19. Does channel appear on USGS quad map? YES (NO)
20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: ___% Residential 50 % Commercial ___% Industrial ___% Agricultural 50 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 5-10'
23. Bank height (from bed to top of bank): 1-2'
24. Channel slope down center of stream: ✓ Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ✓ Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 69 **Comments:** Called Intermittent stream by USACE Nov 1 07 - Discharges into Maritime Swamp before reaching Currituck Sound

Evaluator's Signature C Beck **Date** 12/19/07

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STREAM QUALITY ASSESSMENT WORKSHEET

55

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	3
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	2
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	5
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	2
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	4
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	5
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	6
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	3
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	3
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	1
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	4
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0 – 5	0 – 4	0 – 5	5
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	3
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	6
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	5
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	0
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	4
Total Points Possible			100	100	100	
TOTAL SCORE (also enter on first page)						69

* These characteristics are not assessed in coastal streams.

55

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 12/19/07	**Project:** Mott Currituck Bridge	**Latitude:**
Evaluator: S. BECK	**Site:** Site B - Outer Banks Bridge Below Tim Buck II	**Longitude:** 3-65
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 30.5	**County:** Currituck	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 15.5)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	(1)	2	3
2. Sinuosity	0	1	(2)	3
3. In-channel structure: riffle-pool sequence	0	1	(2)	3
4. Soil texture or stream substrate sorting	0	1	2	(3)
5. Active/relic floodplain	0	1	2	(3)
6. Depositional bars or benches	0	(1)	2	3
7. Braided channel	0	(1)	2	3
8. Recent alluvial deposits	0	(1)	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	0	(0.5)	1	1.5
12. Natural valley or drainageway	0	0.5	(1)	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	(No = 0)		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
14. Groundwater flow/discharge	0	1	2	(3)
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	1	(2)	3
16. Leaflitter	1.5	1	0.5	(0)
17. Sediment on plants or debris	(0)	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	(1)	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 7.5)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	(0)	0.5	1	1.5
23. Bivalves	(0)	1	2	3
24. Fish	(0)	0.5	1	1.5
25. Amphibians	(0)	0.5	1	1.5
26. Macrobenthos (note diversity and abundance)	(0)	0.5	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	(0)	0.5	1	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; (OBL = 1.5) SAV = 2.0; Other = 0			

[b] Items 20 and 21 focus on the presence of upland plants, item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Strong Intermittent (No Biology)

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: S. BECK (CZR)
3. Date of evaluation: 8 July 08
4. Time of evaluation: 0840
5. Name of stream: EMS-A
6. River basin: Pasquotank
7. Approximate drainage area: ~100 acres
8. Stream order: 1
9. Length of reach evaluated: >100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. –77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
EMS-A - crosses US158 just North of Cooper Professional Services and Storage Sheds (Address: 57 'B')
14. Proposed channel work (if any): Fill (52)
15. Recent weather conditions: Scattered showers almost every day - 80's - 90s
16. Site conditions at time of visit: water in pools - no flow - catchment elsewhere
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:_____
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: ___% Residential 25 % Commercial ___% Industrial 50 % Agricultural 25 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 5-15'
23. Bank height (from bed to top of bank): 3-6'
24. Channel slope down center of stream: ✓Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ✓Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 29 **Comments:** Appears to connect Maple and Great Swamp

-Determined to be Jurisdictional Intermittent by USACE and NCDWQ on 22 Oct 08
-Does not require mitigation

Evaluator's Signature S. Beck **Date** 7/8/08

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EMS-A

(52)

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0–5	0–4	0–5	3
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0–6	0–5	0–5	0
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0–6	0–4	0–5	1
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0–5	0–4	0–4	1
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0–3	0–4	0–4	1
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0–4	0–4	0–2	1
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0–5	0–4	0–2	1
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0–6	0–4	0–2	0
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0–5	0–4	0–3	0
	10	**Sediment input** (extensive deposition = 0; little or no sediment = max points)	0–5	0–4	0–4	1
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0–4	0–5	1
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0–5	0–4	0–5	1
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0–5	0–5	0–5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0–3	0–4	0–5	2
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0–5	0–4	0–5	1
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well developed = max points)	0–3	0–5	0–6	1
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0–6	0–6	0–6	2
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0–5	0–5	0–5	3
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0–4	0–4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0–4	0–5	0–5	2
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0–4	0–4	0–4	0
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0–4	0–4	0–4	1
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0–6	0–5	0–5	4
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				29

* These characteristics are not assessed in coastal streams.

(52)

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 8 July 08	**Project:** Mid Currituck Bridge	**Latitude:**
Evaluator: S. BECK	**Site:** EMS-A (52)	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 33	**County:** Currituck	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	0	(1)	2	3
3. In-channel structure: riffle-pool sequence	0	(1)	2	3
4. Soil texture or stream substrate sorting	0	(1)	2	3
5. Active/relic floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	0	1	(2)	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	(0)	0.5	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	(No = 0)		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
14. Groundwater flow/discharge	0	(1)	2	3
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	(1)	2	3
16. Leaflitter	1.5	(1)	0.5	0
17. Sediment on plants or debris	0	0.5	(1)	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	(1)	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 5.5)				
20[b]. Fibrous roots in channel	3	(2)	1	0
21[b]. Rooted plants in channel	3	(2)	1	0
22. Crayfish	0	(0.5)	1	1.5
23. Bivalves	(0)	1	2	3
24. Fish	0	(0.5)	1	1.5
25. Amphibians	(0)	0.5	1	1.5
26. Macrobenthos (note diversity and abundance)	0	(0.5)	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	0	(0.5)	1	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; (OBL = 1.5) SAV = 2.0; Other = 0			

[b] Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

-26: Aquatic Beetles

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: S. Beck (CTR)
3. Date of evaluation: 9 July 08
4. Time of evaluation: 1200
5. Name of stream: EMS-B (East of 158)
6. River basin: Pasquotank
7. Approximate drainage area: ~500 acres
8. Stream order: 1
9. Length of reach evaluated: >100'
10. County: Currituck
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. -77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): EMS-B crosses 158 just North of Harbeers and Exxon, Eastside of Road (53)
14. Proposed channel work (if any): Fill
15. Recent weather conditions: Scattered showers almost every day, 70's - 80's
16. Site conditions at time of visit: Large pools w/ flow
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ___(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:_____
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: 5 % Residential 20 % Commercial ___% Industrial 70 % Agricultural 5 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 20'
23. Bank height (from bed to top of bank): 2' - 6'
24. Channel slope down center of stream: ✓ Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ✓ Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 52 **Comments:** Ditch feeds into Currituck Sound

-Determined to be Perennial by USACE and NCDWQ on 22 Oct 08
-Requires Mitigation

Evaluator's Signature S. Beck **Date** 7/8/08

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

EMS-13 (East)

53

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0–5	0–4	0–5	5
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0–6	0–5	0–5	2
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0–6	0–4	0–5	2
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0–5	0–4	0–4	2
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0–3	0–4	0–4	2
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0–4	0–4	0–2	2
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0–5	0–4	0–2	3
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0–6	0–4	0–2	0
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0–5	0–4	0–3	3
	10	**Sediment input** (extensive deposition = 0; little or no sediment = max points)	0–5	0–4	0–4	3
STABILITY	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0–4	0–5	1
	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0–5	0–4	0–5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0–5	0–5	0–5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0–3	0–4	0–5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0–5	0–4	0–5	2
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0–3	0–5	0–6	2
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0–6	0–6	0–6	4
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0–5	0–5	0–5	3
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0–4	0–4	1
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0–4	0–5	0–5	1
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0–4	0–4	0–4	1
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0–4	0–4	0–4	3
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0–6	0–5	0–5	3
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				52

* These characteristics are not assessed in coastal streams.

(53)

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 9 July 08	Project: Mid-Currituck Bridge	Latitude:
Evaluator: S. Beck (CCR)	Site: EMS-B (East of 158)	Longitude:
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 37.5	County: Currituck	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 15)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	0	(1)	2	3
3. In-channel structure: riffle-pool sequence	0	1	(2)	3
4. Soil texture or stream substrate sorting	0	1	(2)	3
5. Active/relic floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	(2)	3
7. Braided channel	0	(1)	2	3
8. Recent alluvial deposits	0	(1)	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	(1)	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	(No = 0)		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 10)				
14. Groundwater flow/discharge	0	1	2	(3)
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	1	2	(3)
16. Leaflitter	1.5	(1)	0.5	0
17. Sediment on plants or debris	0	0.5	1	(1.5)
18. Organic debris lines or piles (Wrack lines)	0	(0.5)	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 12.5)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	0	0.5	(1)	1.5
23. Bivalves	(0)	1	2	3
24. Fish	0	0.5	(1)	1.5
25. Amphibians	0	(0.5)	1	1.5
26. Macrobenthos (note diversity and abundance)	0	(0.5)	1	1.5
27. Filamentous algae; periphyton	0	(1)	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	(1)	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; (OBL = 1.5)		SAV = 2.0;	Other = 0

[b] Items 20 and 21 focus on the presence of upland plants, item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

2lo. aq. water beetles

Sketch:

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NC Turnpike Authority
2. Evaluator's name: S. Beck (CZR)
3. Date of evaluation: 10 July 08
4. Time of evaluation: 0900
5. Name of stream: EMS-C (East side of 158)
6. River basin: Pasquotank
7. Approximate drainage area: ~500 acres
8. Stream order: 1 (2 offsite)
9. Length of reach evaluated: >100'
10. County: Camden
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any):

Latitude (ex. 34.872312): _____ Longitude (ex. –77.556611): _____

Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

EMS-C Crosses 158 Just South of Shell Shannon and NAPA Autoparts (54)

14. Proposed channel work (if any): Fill
15. Recent weather conditions: Scattered Showers almost every day, 80's/90's
16. Site conditions at time of visit: Saturated several small Pools
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:_____
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: 15 % Residential ___% Commercial ___% Industrial 50 % Agricultural 25 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 5-8'
23. Bank height (from bed to top of bank): 0-1'
24. Channel slope down center of stream: ✓ Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ✓ Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 56 **Comments:**

- Determined to be Important Intermittent by USACE and NCDWQ on 22 Oct 08
- Requires Mitigation

Evaluator's Signature S. Beck Date 7/8/08

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STREAM QUALITY ASSESSMENT WORKSHEET

S4

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	2
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	3
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	4
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	2
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	3
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	3
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	3
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	2
	10	**Sediment input** (extensive deposition = 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	2
STABILITY	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	—
	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	4
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	4
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	1
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	4
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	5
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	—
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	2
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	1
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	5
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				56

* These characteristics are not assessed in coastal streams.

(54)

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 10 July 08	**Project:** Mid-Currituck Bridge	**Latitude:**
Evaluator: S. Beck	**Site:** EMS-C (East side &-15)	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 29.5	**County:** Currituck	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1[a]. Continuous bed and bank	0	1	2	(3)
2. Sinuosity	0	(1)	2	3
3. In-channel structure: riffle-pool sequence	0	(1)	2	3
4. Soil texture or stream substrate sorting	0	1	(2)	3
5. Active/relic floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	(2)	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	0	(1)	2	3
9[a] Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	0	(0.5)	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	(No = 0)		Yes = 3	

[a] Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
14. Groundwater flow/discharge	0	(1)	2	3
15. Water in channel and > 48 hrs since rain, or Water in channel – dry or growing season	0	(1)	2	3
16. Leaflitter	(1.5)	1	0.5	0
17. Sediment on plants or debris	0	0.5	(1)	1.5
18. Organic debris lines or piles (Wrack lines)	0	(0.5)	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		(Yes = 1.5)	

C. Biology (Subtotal = 9.5)				
20[b]. Fibrous roots in channel	(3)	2	1	0
21[b]. Rooted plants in channel	(3)	2	1	0
22. Crayfish	0	0.5	(1)	1.5
23. Bivalves	(0)	1	2	3
24. Fish	(0)	0.5	1	1.5
25. Amphibians	0	(0.5)	1	1.5
26. Macrobenthos (note diversity and abundance)	(0)	0.5	1	1.5
27. Filamentous algae; periphyton	(0)	1	2	3
28. Iron oxidizing bacteria/fungus.	0	(0.5)	1	1.5
29[b]. Wetland plants in streambed	FAC = 0.5; FACW = 0.75; (OBL = 1.5) SAV = 2.0; Other = 0			

[b] Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

Appendix D

Qualifications of Additional Contributors

List of Additional Contributors to the Mid-Currituck Bridge Project NRTR

Investigator:	Samuel Cooper
Education:	MS, Marine Biology, University of North Carolina at Wilmington BS, Biology, Northland College
Responsibilities:	Technical Director, management of natural resources investigations and documentation, including affected environment, environmental consequences, and supporting documents.
Experience:	CZR Incorporated, October 1988 to present
Discipline:	Coastal Ecologist and Technical Director

Investigator:	Julia Kirkland Berger
Education:	MS, Geology, University of North Carolina at Wilmington BA, Environmental Studies, University of North Carolina at Wilmington
Responsibilities:	Document review, oversight of quality control, and assistance with document preparation.
Experience:	CZR Incorporated, October 1994 to March 2002 and February 2004 to present
Discipline:	Senior Environmental Scientist

Investigator:	Mark Grippo
Education:	MS, Zoology and Comparative Anatomy, College of William and Mary BS, Biology, Virginia Polytechnic Institute & State University
Responsibilities:	Preparation of the essential fish habitat assessment
Experience:	CZR Incorporated, October 2001 to 2005
Discipline:	Biologist

Investigator:	Terry Jones
Responsibilities:	Preparation of graphics and acreage calculations
Experience:	CZR Incorporated, February 2002 to present
Discipline:	Graphics Technician and CADD Operator