Final Environmental Assessment

Sunset Beach Fire Station No. 2

Town of Sunset Beach

ARRA-AFG/SCG Grant #: EMW-2009-FC-01933

January 2011

U.S. Department of Homeland Security
Federal Emergency Management Agency - Region IV
3003 Chamblee Tucker Rd - Hollins Bldg
Atlanta, GA 30341-4112

ENVIRONMENTAL ASSESSMENT
PROPOSED SUNSET BEACH FIRE STATION NO. 2
7149 OLD GEORGETOWN ROAD
SUNSET BEACH, NORTH CAROLINA
EMW-2009-FC-01933

Prepared for:

FEMA/Department of Homeland Security
800 K Street NW, Room 5080
Washington DC 20472-3620

On behalf of:
The Town of Sunset Beach
700 Sunset Boulevard North
Sunset Beach, North Carolina 28468

Prepared by:

3006 Hall Waters Drive, Suite 100
Wilmington, North Carolina 28405
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TABLE OF CONTENTS

1. INTRODUCTION 3
2. PURPOSE AND NEED 3
2.1 Purpose 3
2.2 Need 3
3. ALTERNATIVES 4
3.1 No Action Alternative 5
3.2 Preferred Action 5
3.3 Alternatives Considered and Dismissed 5
4. AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS 6
4.1 Physical Resources 6
4.1.1 Geology and Soils 6
4.1.2 Air Quality 7
4.2 Water Resources 8
4.2.1 Water Quality 8
4.2.2 Wetlands 9
4.2.3 Floodplains 9
4.3 Coastal Resources 10
4.4 Biological Resources 10
4.4.1 Threatened and Endangered Species and Critical Habitat 10
4.5 Cultural Resources 11
4.5.1 Historic Properties 11
4.5.2 Tribal Consultation and Religious Sites 11
4.6 Socioeconomic Resources 12
4.6.1 Environmental Justice 12
4.6.2 Noise 13
4.6.3 Traffic 13
4.6.4 Public Service and Utilities 14
4.6.5 Public Health and Safety 14
4.7 Cumulative Impacts 15
5. AGENCY COORDINATION, PUBLIC INVOLVEMENT, AND PERMITS 16
6. LIST OF PREPARERS 18
7. LIST OF REFERENCES 19
8. APPENDICES 19
Appendix I – Figures
Appendix II – Regulatory Correspondence
Appendix III – Representative Photographs

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
AEC	Area of Environmental Concern
BMP	Best Management Practices
CAA	Clean Air Act
CAMA	Coastal Area Management Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DNL	Day-Night Average Sound Level
DHS	Department of Homeland Security
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMA	Emergency Management Agency
ESA	Endangered Species Act
EO	Executive Order
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farm Protection Policy Act
ICWW	Intra-Coastal Waterway
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Services
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NCDCM	North Carolina Division of Coastal Management
NCDLR	North Carolina Division of Land Resources
NCDWQ	North Carolina Division of Water Quality
S&ME	S&ME, Inc.
SWPPP	Stormwater Pollution Prevention Plan
THC	Tennessee Historical Commission
TSS	Total Suspended Solids
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

1. INTRODUCTION

The Town of Sunset Beach is located in southeastern North Carolina between U.S. Highway 17 and the Atlantic Ocean just north of the North Carolina/South Carolina state line (**Figure 1, Site Vicinity Map, Appendix I**). The subject property is currently undeveloped woodland bordered to the south by Old Georgetown Road, to the north and east by undeveloped woodland, and to the west by a commercial/retail shopping center (**Figure 2, 2008 Aerial Photograph, Appendix I**), (**Representative Photographs, Appendix III**). The proposed fire station totals approximately 7,297 square feet which will include operational and living space for volunteer and career paid staff (**Figure 3, Site Plan, Appendix I**). The Town, through the Federal Emergency Management Agency (FEMA), applied for and was awarded funding under FEMAs Assistance to Firefighters Grant Program to improve emergency services to the citizens of Sunset Beach with the construction of a fire station in an underserved area of the town.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality regulations to implement NEPA (40 Code of Federal Regulations Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential impacts of the construction of a new fire station. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

2. PURPOSE AND NEED

2.1 Purpose

The Town currently has one fire station located in the southwestern portion of the Town near the bridge leading to the beach strand (**Figure 4, Sunset Beach Town Limits, Appendix I**). Historically, residents and businesses were located on and near the beach strand with few residents or businesses located between Beach Drive and U.S. Highway 17. Response times to the southern and western portions of the Town are less than five minutes. Development activity in recent years has increased significantly in the northern and eastern portion of the Town and nearby unincorporated areas, for which the Town shares responsibility of service. Response times to these areas often exceed seven minutes. The construction of Fire Station No. 2 would allow the Town to provide improved emergency response service to the rapidly growing section of the Town.

2.2 Need

The Town of Sunset Beach is located in southwestern Brunswick County. The proposed project site is located at 7149 Old Georgetown Road, east of NC Highway 904, at latitude 33.917349°N and longitude 78.489044°W (**Figure 1, Site Vicinity Map, Appendix I**). The project site, owned by the Town of Sunset Beach, is a wooded parcel (**Figure 2, 2008 Aerial Photograph, Appendix I**), (**Representative Photographs, Appendix III**).

The Town of Sunset Beach has experienced both population and geographic growth within the last decade. This has included an annexation in July 2007 that comprised 530 acres, and an estimated population increase of 947 residents to the Town. In addition to population and area increases, significant commercial growth has been occurring, including tourist-related entities. According to the North Carolina State Demographer, Sunset Beach had a total population of 3,396 in 2009, which is up from 1,824 reported in 2000. During summer tourism months, population numbers can increase fourfold. Town growth is restricted to the south by the Atlantic Ocean, to the east by the Town of Ocean Isle Beach, and to the west by the town of Calabash.

Recent annexation has increased Town size, and future annexation would occur to the north which would increase strain on the current facilities. The historic geographic and population growth has increased the need to provide additional fire and first responder resources into areas not currently adequately served. The Town and surrounding rural service area is currently served by one fire station located at 102 Shoreline Drive, which is situated in the southwestern portion of the town (**Figure 4, Sunset Beach Town Limits, Appendix I**). Response times to incorporated areas of the Town and surrounding rural service areas in the northern portion of the Town average seven or more minutes. A second fire station at the proposed location would reduce response times to those areas to under five minutes.

The North Carolina Department of Insurance inspected the Town's fire and rescue department in 2002, and found that they were lacking in proper resource distribution and had inadequate response times. Population and traffic issues have both increased since that inspection. Faster response times will increase community safety and result in more property conservation.

In addition to improving response times and property conservation for the residents and nearby population of Sunset Beach, the new station will also improve the fire department's capability for mutual aid response with Grissettown Volunteer Fire Department for the large residential developments near U.S. Highway 17 which have a significant retiree and elderly population.

3. ALTERNATIVES

The Town of Sunset Beach considered three alternative locations for placement of a second fire station. Of these properties, one was adjacent to a future planned retirement village with associated facilities by a private developer, one was too small to contain the building structure and stormwater infrastructure, and the asking price of the third was too high. Due diligence efforts (surveying and preliminary site planning) were expended on the third site prior to the Town being provided the asking price. The proposed site was selected based on land costs, location relative to demand, and suitable site configuration.

A project steering committee worked closely with the project architect to identify potential project locations and determine station size and design, including developing alternatives. Recommendations were made to the town council, which then made the final decision on the project.

The No Action Alternative has been included to show the impacts on town residents and businesses, utility infrastructure, site and area natural resources, cultural resources, and socioeconomic resources of not constructing a new fire station where proposed.

3.1 No Action Alternative

Under the No Action Alternative, a fire station would not be constructed at 7149 Old Georgetown Road. Town residences and businesses would continue to rely on the current fire station to provide emergency service, and emergency response times would not be reduced.

3.2 Preferred Action

Under the preferred action, the Town of Sunset Beach proposes to construct a 7,297-square foot fire station at 7149 Old Georgetown Road, east of NC Highway 904. The proposed fire station would be located on the north side of Old Georgetown Road and centrally within the property. Access to the site would be from Old Georgetown Road. The project site is surrounded by commercial and residential development and undeveloped woodland.

The building would include two bays which could hold four single axle apparatus, or larger tandem axle apparatus like aerials or heavy rescues, if necessary, with operational, storage, and maintenance areas (**Figure 3, Site Plan, Appendix I**). Four full-time employees would be present at the new station which would include a living area comprised of a day room, kitchen, dining room, office, radio room, full male and female bathrooms with lockers and showers, and 4 bunk rooms that can fit either single beds or bunk beds. Each bunk room can be used as male or female rooms since they are all separate; therefore, living arrangements can be flexible depending on the makeup of each crew. Stormwater infrastructure would also be constructed on site to treat stormwater runoff from new built upon areas.

Station placement was carefully considered using call volume, GIS analysis, response time data, and economic considerations. The location chosen would be able to more quickly serve portions of the Town and surrounding rural service area that currently have slow response times.

3.3 Alternatives Considered and Dismissed

The Town also considered expanding the existing station and purchasing and paving a private road, Angels Trace, and using it as a more direct route to access recently annexed areas as compared to using NC 179 and NC 904. Expansion of the existing facility and/or purchasing and paving Angels Trace would not have resulted in response times being reduced to under five minutes for the northern and eastern portions of the Town that have been experiencing the most growth. Since neither of these options would have achieved the Town's goal of response times of less than five minutes, both options were dismissed.

4. AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

4.1 Physical Resources

4.1.1 Geology and Soils

The proposed project area is located within the town limits of Sunset Beach in Brunswick County, which is located within the Coastal Plain Physiographic Province. The Province is characterized by basal, relatively hard formations with consistency over large areas with the formations typically 30 to 60 feet below the ground surface.

Published geologic information indicates that the site is underlain by the Waccamaw Formation of the Tertiary Period which is described as loosely consolidated fossiliferous sand with silt and sand, bluish-gray to tan, that straddles the Pleistocene-Pliocene boundary. (**Figure 8, Geologic Map of North Carolina, Appendix I**).

The property is located within the Town of Sunset Beach limits, and has been undeveloped woodland with no evidence or documentation of development or agricultural use.

The Farmland Protection Policy Act (FPPA) (P.L. 97-98, Sec. 1539-1549; 7 U.S.C. 4201, et seq.), which states that federal agencies must "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses," was considered in this EA. The National Resource Conservation Service (NRCS) was contacted (**S&ME Request for Site Review**, **Appendix II**) to determine the type of soil(s) and to analyze whether any prime or unique soils exist in the project area. Mr. Richard Brooks, Resource Soil Scientist with U.S. Department of Agriculture (USDA) responded to our request via email on August 2, 2010 (**Regulatory Correspondence**, **Appendix II**) and stated that the site is exempt from farmland conversion considerations due to the developed nature of the surrounding properties and zoning designation of MB-1, Mainland Business.

Below is a listing of the soil and their characteristics for the project site (**Figure 5, Soil Survey Map, Appendix I**).

Map Unit Symbol	**Name**	**Percent of Slopes**
Lo	Leon fine sand	Less than 1% percent slopes
Mu	Murville mucky fine sand	0 to 2% percent slopes

<u>Alternative 1, No Action</u> – Under the No Action Alternative, no impacts related to geology or soils would occur as there would be no ground disturbing activity at the site.

<u>Alternative 2, Preferred Action</u> – Under the Preferred Action Alternative, construction activities would not be deep enough to affect underlying geologic resources. To investigate site soils relative to building site suitability, geotechnical soil borings will be conducted. Short-term impacts to soils due to erosion may occur during the construction period. Appropriate Best Management Practices (BMPs) would be used, such as

installing silt fences and/or sediment traps, and revegetating bare soils immediately after completion of construction to stabilize soils.

Sinkholes occur from the collapse of surficial materials into voids and cavities created by the natural dissolution of carbonate-bearing rock, such as limestone, by rainwater and shallow groundwater. Carbonate-bearing formations susceptible to sinkhole development in North Carolina's Mid-Atlantic Coastal Plain physiographic province include the Castle Hayne Formation, Waccamaw Formation, Belgrade Formation, and River Bend Formation. Most of the observed sinkholes in the region have occurred in the Castle Hayne Limestone. (**Figure 8, Geologic Map of North Carolina, Appendix I**).

A map representing the general distribution of sinkholes in Brunswick County is given in **Figure 9, Inferred Sinkhole Locations, Appendix I**. The sinkholes represent topographic depressions greater than 5 feet that are identified by inspection of topographic and color infrared orthophotographic maps. The features mapped in **Figure 9** have not been field verified, and some of the delineated topographic depressions may have resulted from processes unrelated to sinkhole formation. Sinkholes appear to be most common in the vicinity of Boiling Spring Lakes in eastern Brunswick County. Previous field work has indicated the presence of sinkholes in these areas (Harden et. al., 2003).

As shown in **Figure 8**, the site is underlain by the Waccamaw Formation which is susceptible to sinkhole formation. However, based on the inferred sinkhole locations in Brunswick County (**Figure 9, Inferred Sinkhole Locations, Appendix I**) and the fact that the vast majority of observed sinkholes occur in areas underlain by the Castle Hayne Formation, the risk of sinkhole formation at this site is relatively low.

4.1.2 Air Quality

The Clean Air Act (CAA) requires that states adopt ambient air quality standards. The standards have been established to protect the public from potentially harmful amounts of pollutants.

Under the CAA, the U.S. Environmental Protection Agency (USEPA) establishes primary and secondary air quality standards. Primary air quality standards protect the public health, including the health of "sensitive populations, such as people with asthma, children, and older adults". Secondary air quality standards protect public welfare by promoting ecosystem health and preventing decreased visibility and damage to crops and buildings. EPA has set national ambient air quality standards for the following six criteria pollutants: ozone (O_3), particulate matter ($PM_{2.5}$, PM_{10}), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb). According to the USEPA, Brunswick County has proposed non-attainment for 8-hour ozone but USEPA has yet to respond to the County's recommendation.

<u>Alternative 1, No Action</u> – Under the No Action Alternative, there would be no impacts to air quality because no construction would occur and no sources of emissions would be created. However, under this alternative, fire trucks would have to travel longer distances than under the Preferred Action, resulting in increased vehicle emissions.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, short-term impacts to air quality may occur during the construction of the proposed fire station. To reduce temporary impacts to air quality, the construction contractors would be required to water down construction areas when necessary to mitigate for fugitive dust. Emissions from fuel-burning internal combustion engines (e.g., heavy equipment and earthmoving machinery) could potentially cause local, temporary increases in the levels of some of the criteria pollutants, including CO, NO_2, O_3, PM_{10}, and non-criteria pollutants such as volatile organic compounds (VOCs). To reduce the emission of criteria pollutants, fuel-burning equipment running times would be kept to a minimum and engines would be properly maintained. Operational activities (e.g., fire trucks running, emergency generators) would produce minor emissions but idling of fire engines would be minimized also as a cost reducing measure and emergency generators typically run for less than one day. Neither of these potential operational activities would create significant emissions. No fuel burning permanent facilities (boilers, etc.) are proposed.

4.2 Water Resources

4.2.1 Water Quality

The Clean Water Act (CWA), as amended in 1977, established the basic framework for regulating discharges of pollutants into waters of the United States.

The North Carolina Division of Water Quality (NCDWQ) Coastal Stormwater Rules requires on site treatment of stormwater runoff from impervious surfaces at new non-residential development sites that add more than 10,000 square feet of built upon area or that require a sedimentation and erosion control plan. For sites with greater than 24 percent built upon area, stormwater treatment has to be performed using wet detention ponds, stormwater wetlands, bioretention systems, infiltration systems, sand filters, rain barrels, cisterns, rain gardens, or alternative stormwater treatment systems designed in accordance with NCDWQ design standards. As discussed in Section 1, the proposed fire station would be approximately 7,297 square feet and contain approximately 40 to 50 percent built upon area, thus requiring on site stormwater treatment using one of the measures identified above.

The proposed project site is located within the Carolina Coastal-Sampit Watershed. The proposed project site is located approximately 1.25 miles northeast of Calabash Creek. An unnamed tributary of Calabash Creek is located less than 0.25 mile east-northeast of the property. According to the United States Geological Survey 7.5-minute topographic map for the Calabash, North Carolina quadrangle, the approximate elevation of the proposed project site is 15 feet above mean sea level (msl) with surface flow and directional groundwater flow expected to be toward Calabash Creek (**Figure 1, Site Vicinity Map, Appendix I**).

Alternative 1, No Action – Under the No Action Alternative, no impacts to surface water would occur as no site disturbances or alteration to hydrologic conditions would occur.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, temporary short-term impacts to downstream surface waters would be minimized and most likely avoided by the implementation of appropriate BMPs, such as installing silt fences and revegetating bare soils. Stormwater runoff from permanent impervious surfaces associated with the construction (e.g. buildings and driveways) would be treated on site in two proposed wet detention basins (**Figure 5, Appendix I, Site Plan**). No impacts would occur as construction BMPs are designed to prevent off-site sedimentation, and the proposed wet detention basins would treat post-construction runoff to 85 percent removal of Total Suspended Solids (TSS) and would not discharge directly into a surface water. It should be noted that no surface waters are present on or near the property.

4.2.2 Wetlands

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or filled material into waters of the U.S., including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). Additionally, Executive Order 11990 (Protection of Wetlands) requires Federal agencies to avoid, to the extent possible, adverse impact of wetlands.

The U.S. Fish and Wildlife Service (USFWS) publishes National Wetland Inventory maps which show the site as not containing any wetlands (**Figure 6, Appendix I, National Wetland Inventory Map**). This map shows no wetlands present on the site.

A wetland delineation was performed by Land Management and approved by the USACE on May 27, 2010. Copies of the USACE-signed wetland boundary survey and Notification of Jurisdictional Delineation have been included (**Regulatory Correspondence, Appendix II**). The notification states that there are waters of the U.S. on the property in the form of wetlands which have been delineated, surveyed and accurately depicted on the plat signed by the USACE Regulatory Office dated May 27, 2010, and that the delineation is valid for five years. The notification also states that there are no Navigable Waters of the U.S. on the property. The USACE-signed survey plat shows a 1,171 square foot wetland in the northeast corner of the site. Site development activities would not encroach upon wetlands.

Alternative 1, No Action – Under the No Action Alternative, no impacts to waters of the U.S., including wetlands, would occur as no site disturbance would occur.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, impacts to waters of the U.S., including wetlands, would be avoided. Use of BMPs during construction, namely silt fencing, would prevent sedimentation into the wetlands. The wet detention basin in the northeast corner of the site would discharge near the wetland located on the property, but that discharge would be treated to 85 percent TSS removal and thus flow from the basin into the wetland would not result in sedimentation or impact.

4.2.3 Floodplains

S&ME reviewed FEMA Flood Insurance Rate Maps (FIRM) for the subject area which showed the site is located within FEMA FIRM Panel 1056 and is in the unshaded Zone

X. Neither 100-year nor 500-year floodplains are present on the subject property or on surrounding properties. A copy of that FIRM has been included (**Figure 7, Appendix I, FEMA FIRM**).

4.3 Coastal Resources

During a site reconnaissance on July 7, 2010, S&ME personnel reviewed the site and surrounding properties for areas subject to the Coastal Area Management Act (CAMA). Such areas are defined in CAMA as Areas of Environmental Concern (AEC) and include coastal wetlands, coastal shorelines, inlets, ocean fronts, etc. No AECs were identified on or near the subject property. S&ME submitted a letter to the North Carolina Division of Coastal Management (NCDCM) on July 12, 2010 requesting their comment on the proposed project with respect to potential impacts on coastal resources (**S&ME Request for Site Review, Appendix II**). In a response dated July 30, 2010, Ms. Debbie Wilson with NCDCM determined that there are no AECs on the subject property and thus no areas subject to CAMA jurisdiction (**Regulatory Correspondence, Appendix II**).

4.4 Biological Resources

4.4.1 Threatened and Endangered Species and Critical Habitat

The proposed project site consists of young growth planted pine surrounded by undeveloped scrub/shrub land to the north and east, commercial development to the northwest and west, and residential development to the south. Because the site has undergone timber harvesting and much of the surrounding area has been developed, the area would be considered to have limited value for plant and wildlife species.

The U.S. Fish and Wildlife Service (USFWS) lists the following federally endangered (E) and threatened (T) species for Brunswick County:

Common Name	**Scientific Name**	**Federal Status**
American Alligator	*Alligator mississippiensis*	T
Wood Stork	*Mycteria Americana*	E
West Indian Manatee	*Trichechus manatus*	E

<u>Alternative 1, No Action</u> – Under the No Action Alternative, no impacts to biological resources or protected species would occur as no site disturbances would occur.

<u>Alternative 2, Preferred Action</u> – S&ME performed a field review of the site on July 7, 2010, and no protected species or suitable habitat were identified. S&ME requested the USFWS to comment on the proposed project with respect to potential impacts to federally threatened or endangered species or their critical habitat via letter on July 12, 2010 (**S&ME Request for Site Review, Appendix II**). In a response dated July 27, 2010, the USFWS did not directly respond to the potential for impacts to federally threatened or endangered species or their critical habitat (**Regulatory Correspondence, Appendix II**). They stated that if S&ME did not identify potential impacts, then they would not need to be notified.

Recommendations from USFWS included submitting a sedimentation and erosion control plan to the North Carolina Division of Land Resources (NCDLR) for approval prior to construction, installing BMPs to protect nearby downgradient surface waters, and maintaining natural vegetated buffers on all streams and creeks adjacent to the project site.

Our personnel contacted Mr. Howard Hall with USFWS on July 30, 2010 and discussed their lack of comment. We were informed that the USFWS is implementing internal policy to not provide comment regarding impact/non-impact at their discretion. Mr. Hall had concerns only about red-cockaded woodpecker foraging area as the site contains a stand of pine trees. As discussed with Mr. Hall, that species typically has a 0.5-mile foraging radius from its nesting tree. According to the North Carolina Natural Heritage Program GIS website, there are no occurrences of red-cockaded woodpeckers within a half-mile radius of the subject property. Based on discussions with USFWS personnel, site observations and review of published data, the project site is located outside of foraging range for existing red-cockaded woodpecker populations, and no other protected species were observed on the property. Thus, the preferred alternative would have no impact on any federally listed threatened or endangered species.

4.5 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA), as amended and implemented by 36 CFR Part 800, requires Federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on Federal projects that will have an affect on historic properties prior to implementation. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed in or eligible for listing in the National Register of Historic Places (NRHP).

4.5.1 Historic Properties

The proposed project was reviewed in accordance with 36 CFR 800.4(d)(1). S&ME personnel completed a Cultural Resources Literature Review dated July 9, 2010 which did not identify historical or cultural resources on the property or that would be impacted by the project. On July 12, 2010, S&ME submitted a letter to the North Carolina State Historical Preservation Office (SHPO) (**S&ME Request for Site Review, Appendix II**). SHPO reviewed the submittal and in a letter dated July 28, 2010, determined that no historical properties would be affected by the proposed project (**Regulatory Correspondence, Appendix II**).

4.5.2 Tribal Consultation and Religious Sites

FEMA sent consultation letters to the following tribes: Cherokee Nation, Eastern Band of Cherokee Indians, Seminole Tribe of Florida, Seminole Nation of Oklahoma, Thlopthlocco Tribal Town. No comments on the construction of the fire station were received from any of the tribes.

Alternative 1, No Action – Under the No Action Alternative, no impacts to archaeological or cultural resources would occur as no site disturbances would occur.

Alternative 2, Preferred Action – Under the Proposed Action Alternative, no impacts to archaeological or cultural resources are anticipated. To ensure that ground disturbing activities will not adversely affect any potential buried cultural resources, and in accordance with 36 CFR §800.13, provisions are set forth to deal with unexpected discoveries that may be historically significant but were not identified as part of the initial review process. If human remains are discovered during the course of project implementation, the contractor will stop project activities in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm. FEMA will be notified immediately, and the parties will consult to determine the appropriate treatment and disposition of the remains in accordance with the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) and State laws, as applicable.

4.6 Socioeconomic Resources

4.6.1 Environmental Justice

Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) mandates that Federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. Socioeconomic and demographic data for the project area were analyzed to determine if a disproportionate number of minority or low-income persons have the potential to be adversely affected by the proposed project. According to the U.S. Census, North Carolinas has a minority population of 32.7 percent, with Brunswick County at 16.7 percent and Sunset Beach at 4.0 percent. Also according to the U.S. Census, 14.6 percent of individuals in North Carolina are living below the poverty level, with Brunswick County at 11.9 percent for individuals and Sunset Beach at 3 percent for families and 4.2 percent for individuals (U.S. Census, 2000).

Alternative 1, No Action – Under the No Action Alternative, there would be no disproportionately high and adverse effects on minority or low-income populations. All populations could potentially be adversely affected by the lack of emergency services in the area.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, there would be no additional high and adverse impacts on minority or low-income populations. Implementation of the Proposed Action Alternative would benefit all populations within Sunset Beach by providing faster emergency responses.

It should be noted that a mobile home park (often associated with minority and/or low-income populations) is located across Old Georgetown Road from the proposed site. Many of these units are used as summer vacation rentals, and Old Georgetown Road is currently used by a nearby Emergency Management Agency (EMA) station which responds to more calls than the Town's fire department. Thus, many of these residents

and tenants are not present year-round and already experience emergency response vehicular traffic on a regular basis.

4.6.2 Noise

Noise is generally defined as unwanted sound. Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by Federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses. USEPA guidelines, and those of many other Federal agencies, state that outdoor sound levels in excess of 55 dB DNL are "normally unacceptable" for noise-sensitive land uses such as residences, schools, or hospitals. The proposed project site is surrounded by commercial and residential development and undeveloped woodland.

Alternative 1, No Action – Under the No Action Alternative, no impacts related to noise would occur as there would be no construction activities and no sources of noise created.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, temporary short-term increases in noise levels are anticipated during the construction period. To reduce noise levels during that period, construction activities would take place during normal business hours, and equipment and machinery installed at the proposed project site would meet all Federal, State, and local noise regulations.

Over the long-term, vehicular traffic would increase at the proposed project site, primarily when emergency personnel are training or responding to traffic accidents, fires, severe weather, or other emergency events. The increased traffic and sirens would increase the noise level, but these increases would be very short in duration and would occur very infrequently. It is anticipated that these noise peaks would not exceed the USEPA 24-hour exposure levels.

4.6.3 Traffic

The project site is located on the north side of Old Georgetown Road approximately 600 feet east of the intersection of NC Highway 904 and Old Georgetown Road. That intersection is controlled by a traffic signal. NC Highway 904 and Old Georgetown Road are mostly 2 lanes with turn lanes present to serve adjacent commercial development and intersections with no traffic signal. The next closest traffic signal is located approximately 1.5 miles south of the site at NC Highway 904 and Beach Drive.

Alternative 1, No Action – Under the No Action Alternative, there would be no impacts as there would be no changes to transportation or traffic loads.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, there would be a minor temporary increase in the volume of construction traffic in the immediate vicinity of the proposed project site, potentially resulting in a slower traffic flow for the duration of the construction phase. To mitigate potential delays, construction vehicles and equipment would be stored on site during project construction and appropriate signage

would be posted on affected roadways. A traffic sign will be placed on Old Georgetown Road notifying motorists of the presence of the station. A traffic signal may be installed in future years if warranted by increased traffic volumes on Old Georgetown Road.

Over the long term, minor vehicular traffic increases would occur only during emergency events. These increases would be very short term while emergency vehicles leave the facility during emergency events or return from such events. No significant adverse impacts to transportation, site access, or traffic levels are anticipated. The "pull through access" design would minimize traffic disturbances during emergency call response and vehicles returning to the station.

4.6.4 Public Service and Utilities

Brunswick County provides municipal water and municipal wastewater service to the area around the subject site.

Alternative 1, No Action – Under the No Action Alternative, there would be no impacts as no new utility hook-ups would be required.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, the fire station would connect to existing public utilities and infrastructure. A municipal wastewater line is present at the intersection of Old Georgetown Road and NC 904, and a water line is present on the south side of Old Georgetown Road. Connections to utilities would be determined during final design.

4.6.5 Public Health and Safety

This analysis includes health and safety issues of the area residents, the public at large, and the protection of personnel involved in activities related to the implementation of the proposed construction of the fire station. EO 13045, Protection of Children, requires Federal agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children.

Alternative 1, No Action – Under the No Action Alternative, when emergency events occur within the response area of the proposed fire station, residents of Sunset Beach, including children, would presumably be at greater risk due to longer emergency response times.

Alternative 2, Preferred Action – Under the Preferred Action Alternative, the fire station would provide faster response times for residents of Sunset Beach and surrounding area, including children. This would result in a positive impact on Public Health and Safety.

To protect the public during the construction period, appropriate signage and barriers would be in place prior to construction activities to alert pedestrians and motorists of project activities. Therefore, there would be no disproportionate health and safety risks to the public, including children.

4.7 Cumulative Impacts

According to NEPA regulations, cumulative impacts represent the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7)". In accordance with NEPA and to the extent reasonable and practical, this EA considered the combined effect of the Proposed Action Alternative and other actions that have occurred, or will be occurring or proposed in the vicinity of the proposed project site.

Recent development in the area includes construction of a commercial/retail shopping center adjacent to the west, construction of roadway and utility infrastructure, construction of several golf course communities nearby to the northeast and southwest, and additional smaller-scale residential and commercial development to the east along Old Georgetown Road. The construction of the roadway and utility infrastructure has facilitated the surrounding commercial and residential development. Much of this development occurred following the passage of the Clean Air and Clean Water Acts, protected species regulations, cultural/historical resources protections, and North Carolina land disturbing and stormwater rules. These regulations aim to avoid and minimize environmental impacts, and often require compensatory mitigation in the event of unavoidable impacts.

Older construction that may pre-date recent environmental regulations appears to be lower density residential development located to the south near the Intra-Coastal Waterway (ICWW). Such residences typically have old septic systems often identified as potential sources of fecal coliform bacteria contribution to nearby surface waters. It is likely that some of this development would not conform to current environmental regulations, and may have resulted in minor impacts during construction and possibly continues to do so during large storm events (i.e. no on site stormwater treatment resulting in downgradient sedimentation into receiving waters). All of the ICWW in the area, and many of the inlets and creeks in the area have been closed to shellfish harvesting due to elevated fecal coliform concentrations and/or sediment and flooding from strong storm events (i.e. hurricanes, tropical storms, nor'easters).

Potential future projects in the vicinity of the project (within approximately one mile) include the Jaguars Lair development to the southwest on NC 904, the Chatham Glenn development at the northeast corner of NC 904 and Old Georgetown Road, an expansion of the existing Sandpiper Bay residential subdivision to the west on Old Georgetown Road, an expansion of the existing Ocean Ridge subdivision to the north and east, and a long-term care facility on NC 904. Though these developments potentially represent a significant increase in population and construction activity, they would also be subject to the environmental regulations mentioned above.

The proposed construction of this fire station would also be subject to the environmental regulations identified above and would make use of existing public utility and roadway infrastructure, both of which would minimize environmental impacts.

Based on this analysis, cumulative impacts are most influenced by the older residential development to the south near the ICWW which appear to have affected water quality in the nearby tidal surface waters. Potential future projects could be significant in size, but their impacts should be minimized by current environmental regulations. The construction of the fire station would also be subject to such regulations and would not be a strong spur of new development, as future projects are driven more by utility availability and market demand than by fire station proximity. Therefore, the proposed project should not contribute or cause additional negative impacts to downstream water quality or the surrounding environment.

5. AGENCY COORDINATION, PUBLIC INVOLVEMENT, AND PERMITS

This project has been discussed at various Town meetings since 2001 to discuss budgetary items, potential site locations, and site design. Most recently, those meetings have included:

- Town council meeting on August 4, 2008 which involved a discussion on the fire station location and how the station would better serve recently annexed areas.

- Town council budget workshop on June 10, 2009 during which the application for a FEMA grant for the project was discussed.

- June 30, 2009 newspaper article in the Brunswick County Beacon about the town council's discussion on cost and size of a new fire station.

- September 29, 2010 newspaper article in the Brunswick County Beacon announcing the FEMA grant secured for the new fire station. The article discusses the grant amount and the community benefits of a second fire station. The article includes an interview with Fire Chief Chris Barbee explaining that the Town has been planning a second fire station for more than two years as part of its capital improvements plan.

- March 26, 2010 town council meeting during which the project architect updated the council on the initial design of the new station.

- A Sunset Beach Town Board Commission Meeting was held on August 2, 2010, at which time the project design was discussed.

These meetings were open to the general public. Very little public comment has been received, and what has been received focused on the Town's expenditure of money during a down economy. A public comment period for the Draft EA was completed November 17 - December 3, 2010 and no comments were received.

Prior to and during construction, the applicant will notify the appropriate local and state regulatory agencies and will obtain appropriate permits.

As required by the NCDWQ and NCDLR, a site-specific erosion control plan and stormwater management plan, including a Stormwater Pollution Prevention Plan (SWPPP), will be implemented as part of the construction plans for the proposed project.

During construction, the applicant will implement dust control measures such as watering down construction areas as necessary. Combustion equipment run times will be minimized to practical levels, and idle equipment will be shut down if extended run times are anticipated. Equipment will be properly maintained.

During construction, the applicant will limit all construction activities to normal business hours and equipment will meet local, State, and Federal noise regulations.

During construction, the applicant will store vehicles and equipment on-site to the extent possible.

A building permit issued by the Town of Sunset Beach, North Carolina will be issued following review and approval of the site and building plans.

A summary table describing the potential impacts of the proposed alternative and the no action alternative is provided below.

ALTERNATIVES SUMMARY		
Affected Environment	**Impacts**	**Report Section**
Geology and Soils	**Preferred Alternative**: No impacts to geology, short-term impact to soils during construction. **No Action Alternative**: No impacts to geology and soils.	Section 4.4.1
Air Quality	**Preferred Alternative**: Short-term impacts from dust and emissions form equipment could occur during construction. **No Action Alternative**: No impacts to air quality.	Section 4.1.2
Water Quality	**Preferred Alternative**: Short-term impacts to surface water during construction should be avoided using BMPs. Onsite treatment of stormwater to prevent post-construction impacts to down-gradient surface waters. No impact to ground water resources. Brunswick County supplies potable water. **No Action Alternative**: No impacts to ground water resources.	Section 4.2.1
Terrestrial and Aquatic Environments	**Preferred Alternative**: No impacts are anticipated to the aquatic environment. **No Action Alternative**: No impacts to terrestrial or aquatic environments.	Section 4.2.1
Wetlands	**Proposed Alternative**: No impacts are proposed. **No Action Alternative**: No impacts to wetlands.	Section 4.2.2
Floodplains	**Proposed Alternative**: No impacts to floodplains. **No Action Alternative**: No impact to floodplains.	Section 4.2.3
Coastal Resources	**Proposed Alternative**: No impacts to coastal resources. **No Action Alternative**: No impacts to coastal resources	Section 4.3

Threatened and Endangered Species	**Proposed Alternative**: No impacts are anticipated. **No Action Alternative**: No impacts to threatened and endangered species.	Section 4.4.1
Historic and Cultural Resources	**Proposed Alternative**: No impacts are anticipated. **No Action Alternative**: No impacts to historical and cultural resources.	Section 4.5
Environmental Justice	**Proposed Alternative**: No additional high or adverse effect on minority or low-income populations is anticipated. **No Action Alternative**: No impacts to environmental justice.	Section 4.6.1
Noise	**Proposed Alternative**: Short-term impacts from heavy equipment would occur during construction. Long-term impacts would include increased traffic and siren noise from the emergency vehicles. **No Action Alternative**: No impacts from noise.	Section 4.6.2
Traffic and Circulation	**Preferred Alternative**: Short-term increase in the volume of construction-related traffic in the vicinity of the site. Also, a permanent increase in emergency vehicles on Old Georgetown Road. **Dismissed Alternative**: Possible traffic impediment due to fire engines backing into the bays **No Action Alternative**: No impacts to traffic and circulation.	Section 4.6.3
Public Services and Utilities	**Proposed Alternative**: No impacts to utilities are anticipated. **No Action Alternative**: Emergency response times remain unacceptable.	Section 4.6.4
Safety and Security	**Proposed Alternative**: Significant improvements to emergency response services are anticipated. The new facility will provide areas previously at risk to slow response times with access to emergency services and decreased response times. **No Action Alternative**: No improvements to safety and security.	Section 4.6.5

6. LIST OF PREPARERS

Paul A. Masten, S&ME, Inc. – Author
3006 Hall Waters Drive, Suite 100
Wilmington, North Carolina 28405
910-799-9945

Jean-Marie Carta, S&ME, Inc. – Cultural Resources Researcher
134 Suber Road
Columbia, South Carolina 29210
808-561-9024

Bill Green, S&ME, Inc. – Cultural Resources Senior Reviewer
134 Suber Road
Columbia, South Carolina 29210
808-561-9024

Eric M. Solt, PG, S&ME, Inc. – EA Senior Reviewer
1413 Topside Road
Knoxville, Tennessee 37777
865-970-0003

Chris Barbee, Sunset Beach Fire Chief
700 Sunset Boulevard
Sunset Beach, North Carolina 28468
910-579-2456

Scott Garner, Garner-Brown Architects, Inc. – Architect
1718 East Boulevard
Charlotte, North Carolina 28203
704-333-1051

Allison Collins
DHS/FEMA RIV EHP Team Lead
3003 Chamblee-Tucker Road, Hollins Bldg
Atlanta, Georgia 30341
FEMA-R4EHP@dhs.gov

7. LIST OF REFERENCES

The Soil Survey of Brunswick County, 1982

Flood Insurance Rate Map (FIRM), Federal Emergency Management Agency (FEMA) website at **http://www.fema.gov/index.shtm**

2000 U.S. Census

Brunswick County GIS Website

MSR Maps – United States Geologic Survey Topographic Quadrangle Map

Harden, S.L., Fine, J.M. and Spruill, T.B. (2003), "Hydrogeology and Ground Water Quality of Brunswick County, North Carolina", U.S. Geological Survey, Water Resources Investigation Report 03-4051.

8. APPENDICES

APPENDIX I – FIGURES
APPENDIX II – REGULATORY CORRESPONDENCE
APPENDIX III – REPRESENTATIVE PHOTOGRAPHS

APPENDIX I – FIGURES

Figure 1: Site Vicinity Map

Figure 2: Aerial Photograph

Figure 3: Site Plan

Figure 4: Sunset Beach Town Limits

Figure 5: Soil Survey Map

Figure 6: National Wetland Inventory Map

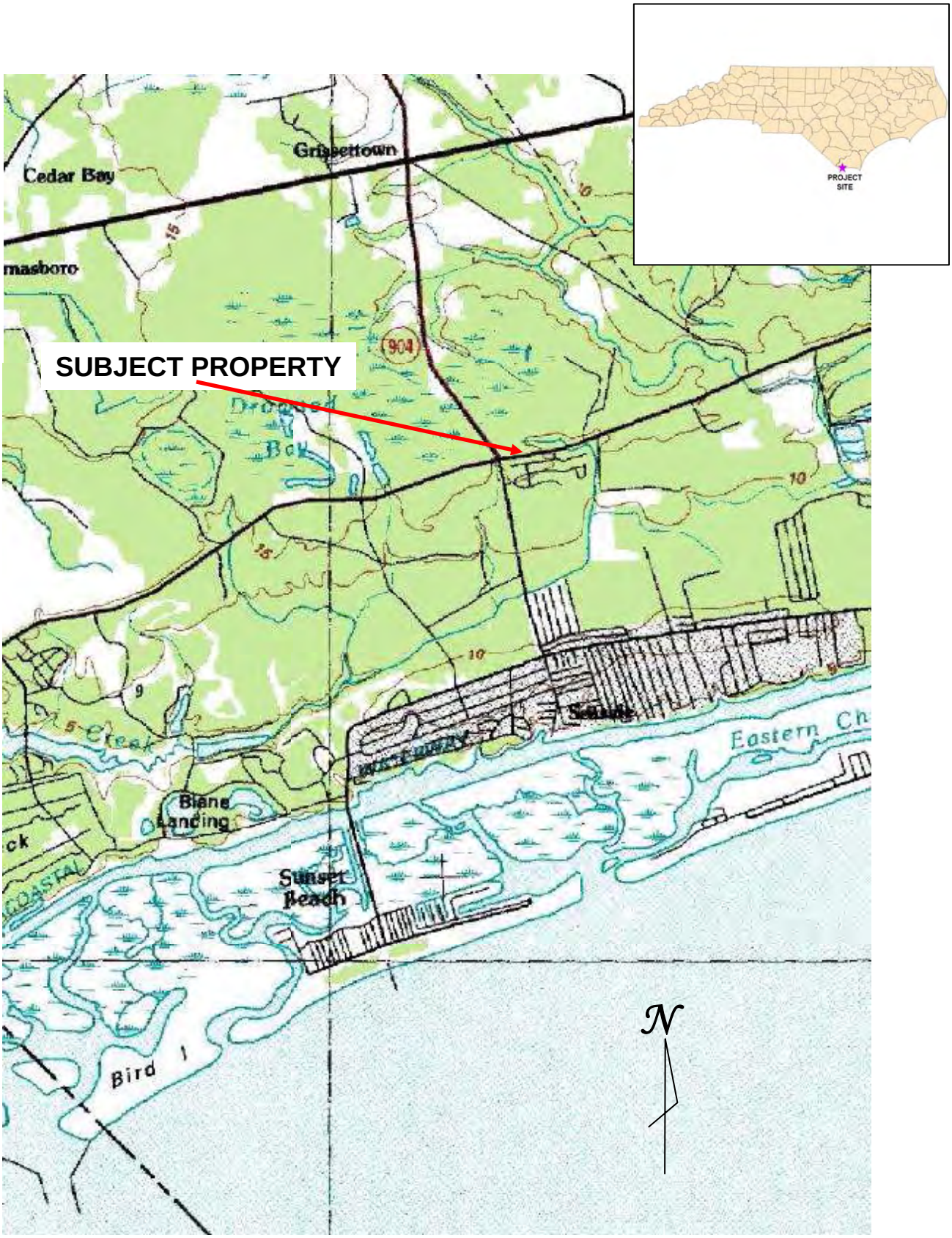
Figure 7: FEMA FIRM

Figure 8: Geologic Map of North Carolina

Figure 9: Inferred Sinkhole Locations

APPENDIX II - REGULATORY CORRESPONDENCE

APPENDIX III - REPRESENTATIVE PHOTOGRAPHS



Note: USGS Map obtained from MSR Maps website.

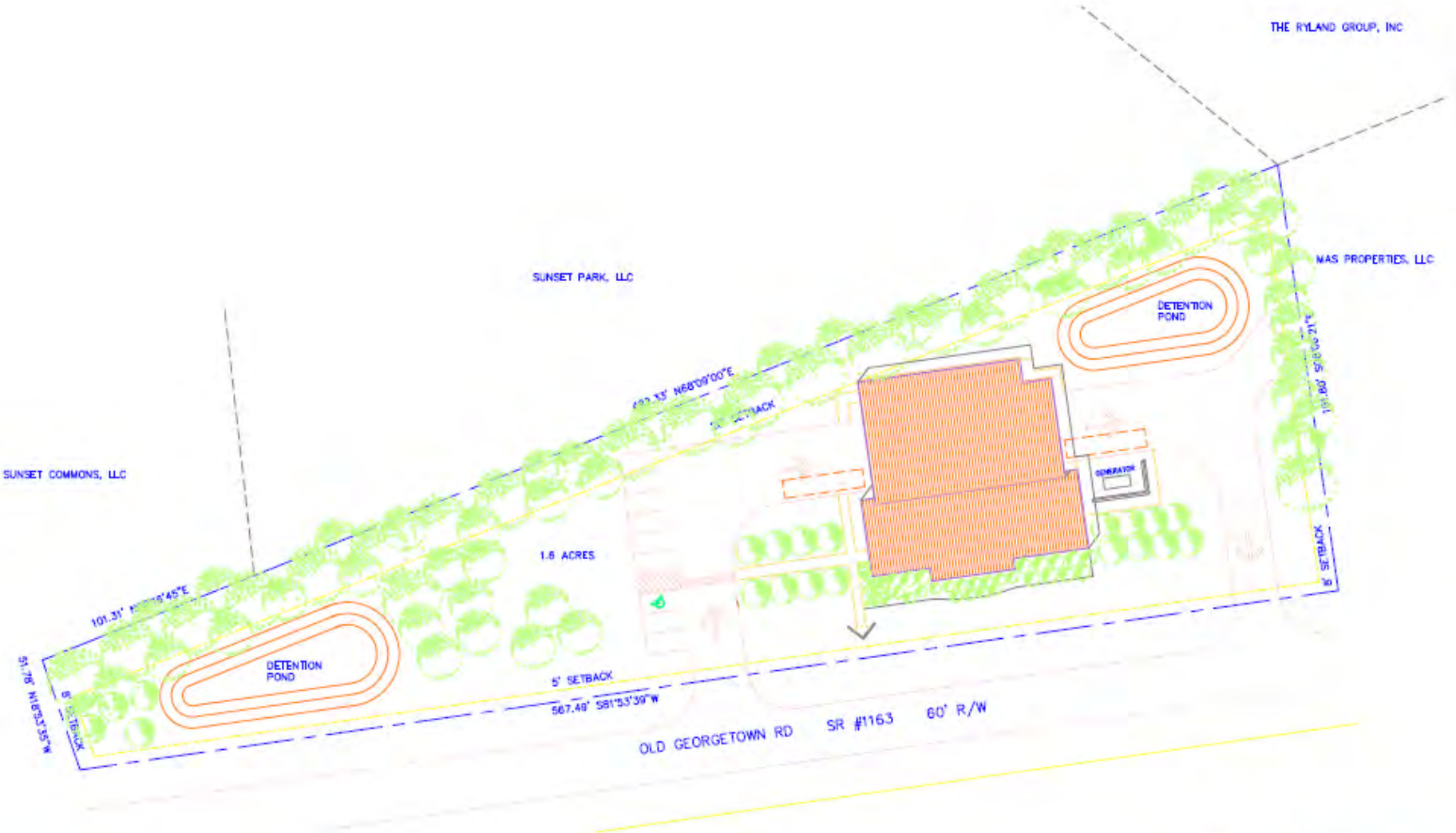
SCALE: UNKNOWN	S&ME	SITE VICINITY MAP SUNSET BEACH FIRE STATION 7149 OLD GEORGETOWN ROAD SUNSET BEACH, NORTH CAROLINA	FIGURE NUMBER 1
CHECKED BY: EMP			
DRAWN BY: PAM			
DATE: 7-8-10		S&ME PROJECT NUMBER: 1064-10-101	

N

Map Scale
1 inch = 482 feet

Note: Aerial photograph obtained from Brunswick County GIS website.

SCALE: AS SHOWN	S&ME	**2008 AERIAL PHOTOGRAPH** **SUNSET BEACH FIRE STATION 2** **7149 OLD GEORGETOWN ROAD** **SUNSET BEACH, NORTH CAROLINA**	**FIGURE NUMBER** **2**
CHECKED BY: EMP			
DRAWN BY: PAM			
DATE: 7-8-10		**S&ME PROJECT NUMBER: 1064-10-101**	



Sunset Beach Fire Station 2

Sunset Beach , NC

Site Plan 8/2/10

Garner & Brown Architects PA 1718 East Blvd. Charlotte, NC 28203

Note: Drawing provided to S&ME by Garner & Brown Architects PA personnel

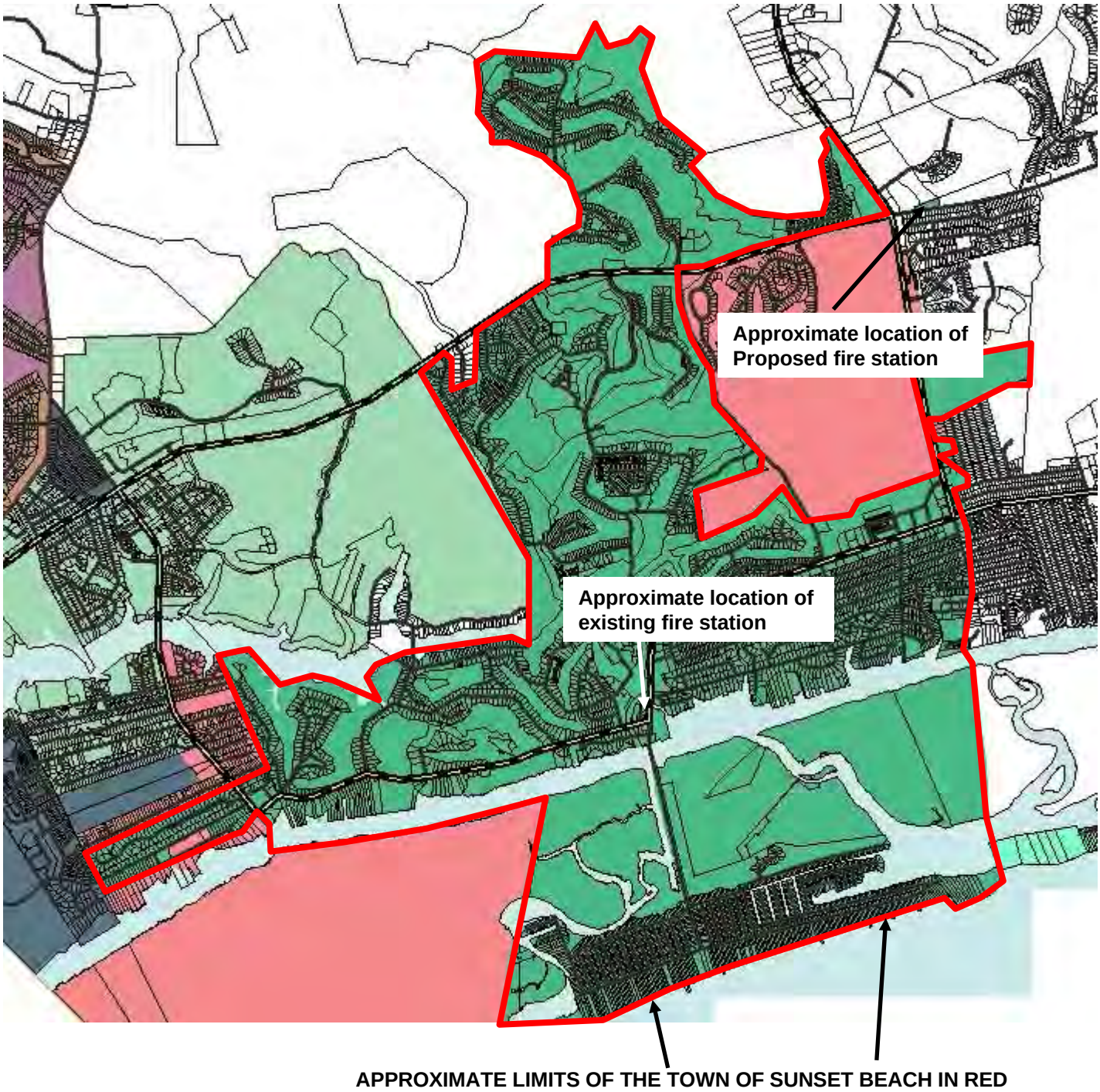
SCALE: AS SHOWN	
CHECKED BY: PAM	
DRAWN BY: JNS	
DATE: 7-28-10	

S&ME

PROPOSED SUNSET BEACH FIRE STATION NO 2
7149 OLD GEORGETOWN ROAD
SUNSET BEACH, NORTH CAROLINA

S&ME PROJECT NUMBER: 1064-10-101

FIGURE NUMBER 3



Note: Drawing obtained from the Brunswick County GIS website.

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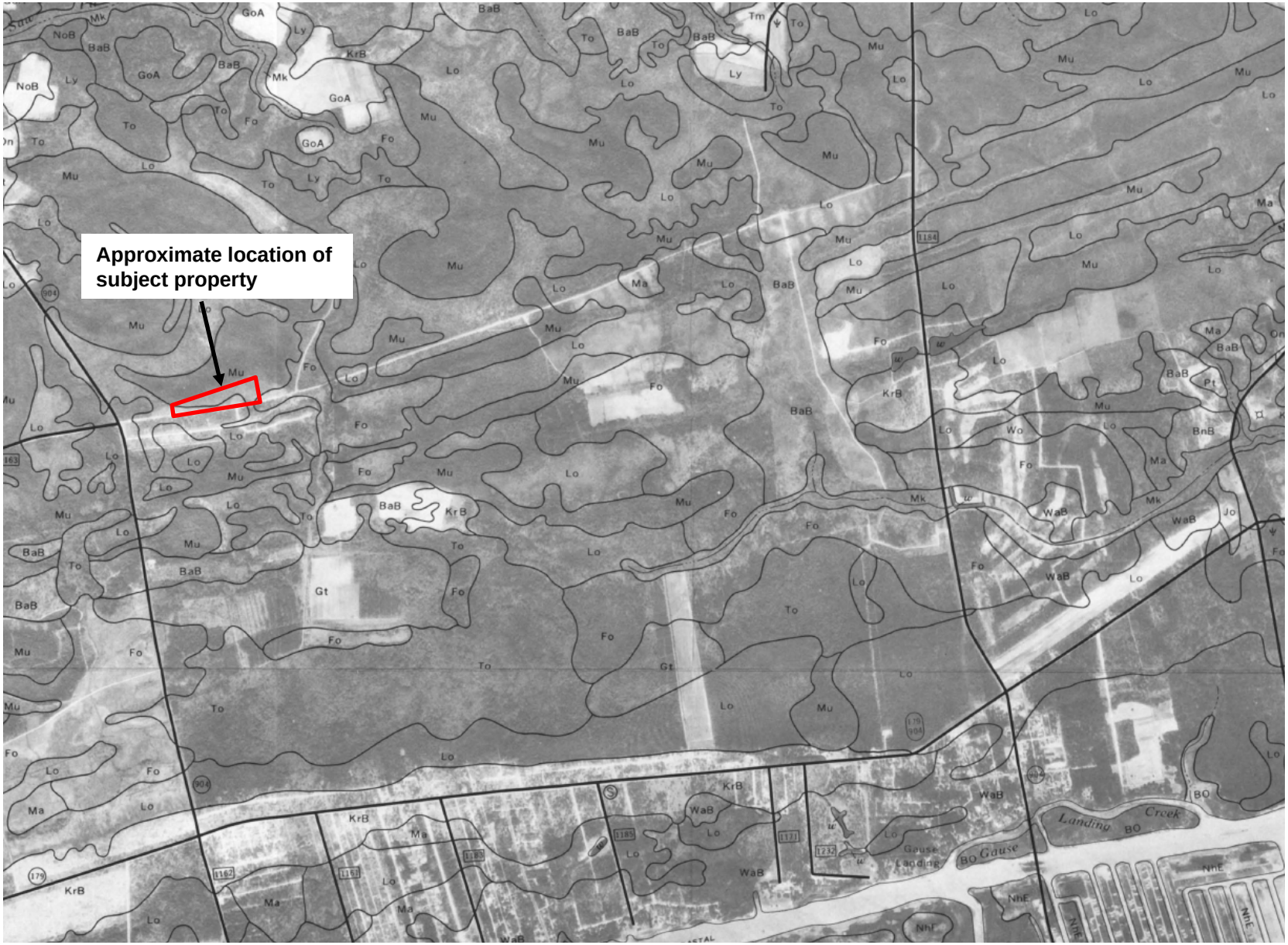
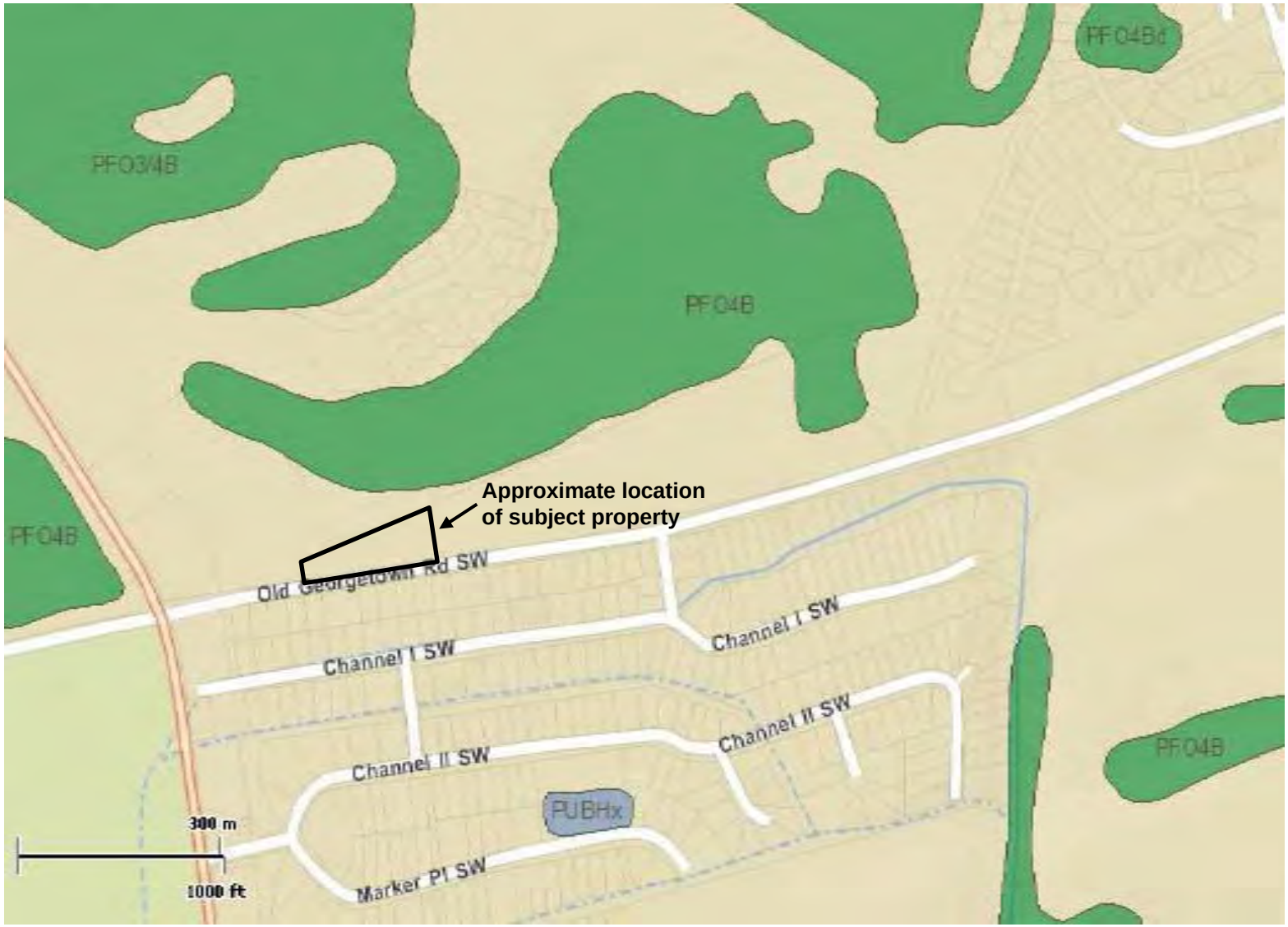


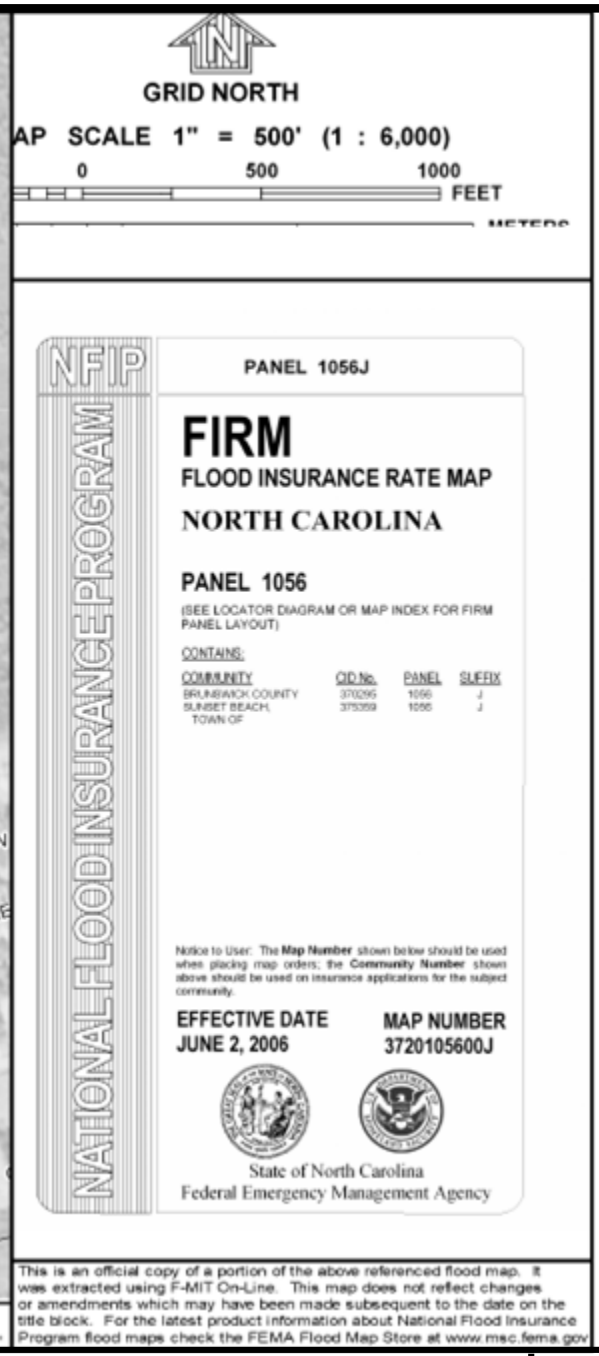
SCALE: NOT TO SCALE	S&ME ENGINEERING • TESTING ENVIRONMENTAL SERVICES	SOIL SURVEY MAP SUNSET BEACH FIRE STATION 7149 OLD GEORGETOWN ROAD SUNSET BEACH, NORTH CAROLINA	FIGURE NUMBER 5
CHECKED BY: PAM			
DRAWN BY: JNS			
DATE: 10-4-10		S&ME PROJECT NUMBER: 1064-10-101	



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deetwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

SCALE: AS SHOWN	S&ME ENGINEERING • TESTING ENVIRONMENTAL SERVICES	NATIONAL WETLAND INVENTORY MAP SUNSET BEACH FIRE STATION 7149 OLD GEORGETOWN ROAD SUNSET BEACH, NORTH CAROLINA	FIGURE NUMBER 6
CHECKED BY: PAM			
DRAWN BY: JNS			
DATE: 10-4-10		S&ME PROJECT NUMBER: 1064-10-101	



Note: Drawing obtained from National Flood Insurance Program

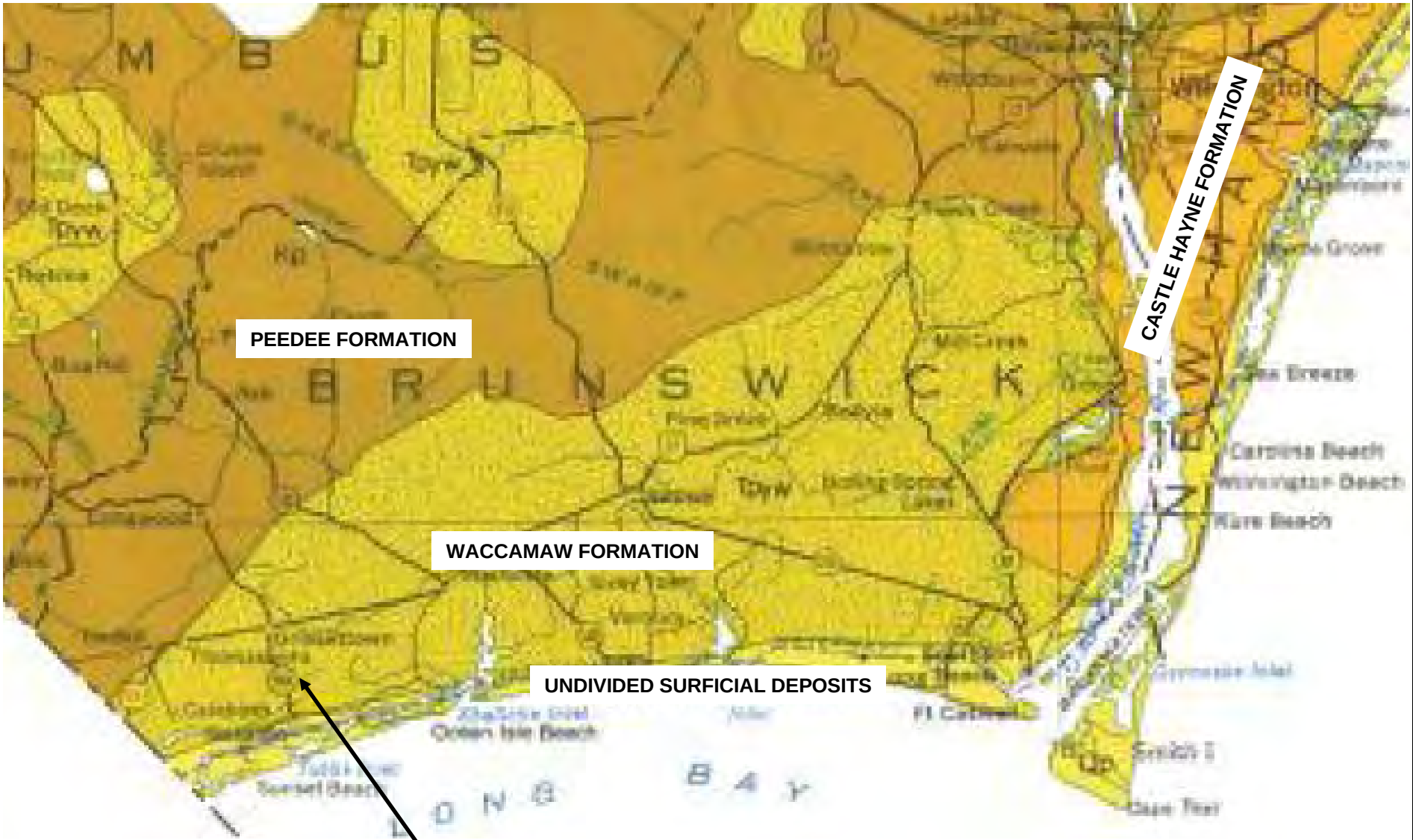
SCALE: AS SHOWN	
CHECKED BY: PAM	
DRAWN BY: JNS	
DATE: 7-26-10	

S&ME

FEMA FLOOD INSURANCE RATE MAP
PROPOSED SUNSET BEACH FIRE STATION NO 2
7149 OLD GEORGETOWN ROAD
SUNSET BEACH, NORTH CAROLINA

S&ME PROJECT NUMBER: 1064-10-101

FIGURE NUMBER
7



Reference: 1985
GEOLOGIC MAP OF
NORTH CAROLINA

APPROXIMATE LOCATION OF
SUBJECT PROPERTY

SCALE: AS SHOWN	S&ME	GEOLOGIC MAP OF NORTH CAROLINA PROPOSED SUNSET BEACH FIRE STATION NO 2 7149 OLD GEORGETOWN ROAD SUNSET BEACH, NORTH CAROLINA	FIGURE NUMBER 8
CHECKED BY: PAM			
DRAWN BY: TMS			
DATE: 10-11-2010		S&ME PROJECT NUMBER: 1064-10-101	

U.S. Department of Commerce (1996) and
U.S. Environmental Protection Agency (2001)

SCALE: AS SHOWN	S&ME	INFERRED SINKHOLE LOCATIONS PROPOSED SUNSET BEACH FIRE STATION NO 2 7149 OLD GEORGETOWN ROAD SUNSET BEACH, NORTH CAROLINA	FIGURE NUMBER
CHECKED BY: PAM			9
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DATE: 10-11-2010		S&ME PROJECT NUMBER: 1064-10-101	