



Draft Environmental Assessment

South Greenville Fire District Station 7

South Greenville Fire District

ARRA-SCG Grant #EMW-2009-FC-01823

November 2010



FEMA

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

ALTAMONT ENVIRONMENTAL, INC.

ENGINEERING & HYDROGEOLOGY



**National Environmental Policy Act
Environmental Assessment
South Greenville Fire District,
Station 7
1820 Old Grove Road
Piedmont, South Carolina
November 2010**

Prepared for
South Greenville Fire District
8305 Augusta Rd
Pelzer, SC 29669
(864) 505-6787

Prepared by
Altamont Environmental, Inc.
231 Haywood Street
Asheville, NC 28801
(828) 281-3350

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List of Acronyms

AFG	Assistance to Firefighters Fire Station Construction Grant
ARRA	American Recovery and Reinvestment Act
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dB	Decibels
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gas
CeC	Cecil Sandy Loam
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
NEPA	National Environmental Policy Act
NFPA/ISO	National Fire Protection Association/Insurance Services Office
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Services
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Act
PM10	Particulate Matter 10 Microns or Less
RCRA	Resource Conservation and Recovery Act
SCDHEC	South Carolina Department of Health and Environmental Control
SGFD	South Greenville Fire District
SHPO	South Carolina State Historic Preservation Office
US	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

1.0 Executive Summary

The South Greenville Fire Department (SGFD) proposes to construct a new fire station using federal funding attained through the Federal Emergency Management Agency (FEMA) Assistance to Firefighters Fire Station Construction Grant (AFG) Program under the American Recovery and Reinvestment Act (ARRA). FEMA requires an Environmental Assessment (EA) to determine whether an Environmental Impact Statement (EIS) is required or whether a Finding of No Significance (FONSI) is appropriate. The SGFD has acquired property in an industrial park in Piedmont, South Carolina which is located specifically to address the deficiencies in response time and station locations identified in a 2005 evaluation conducted by the National Fire Protection Association (NFPA)/Insurance Services Office (ISO). Constructing a new fire station on the referenced property is the Preferred Alternative action. Detailed evaluation of the Preferred Alternative determined the action would have no significant impact to the following:

- Physical Resources
- Water Resources
- Biological Resources
- Cultural and Historic Resources
- Socioeconomic Resources

2.0 Introduction

The South Greenville Fire District (SGFD) is a regional fire department that currently operates six stations serving approximately 143 square miles south of the city of Greenville, South Carolina. In addition to providing fire suppression and medical first response, the SGFD provides mutual aid and a Rapid Intervention Team to 11 neighboring departments. The northern portion of the SGFD's response area is an industrial hub for Greenville County, and the area is becoming increasingly populated with commercial, industrial, and residential development. This area of the district is served by the SGFD Headquarters located over four miles away and existing protection is inadequate: the SGFD requires the support of numerous outside fire districts, and current response times exceed the four-minute national standard. A 2005 National Fire Protection Association (NFPA)/Insurance Services Office (ISO) assessment recommended the construction of a new fire station in the northern portion of the district to provide adequate protection. In order to reduce response times to the area in need, the SGFD is proposing to build a new station, South Greenville Station 7, to be located in *The Matrix: a Business and Technology Park* (The Matrix Park) near the intersection of US-25 (Augusta Road) and I-185 in Piedmont, South Carolina. Please refer to Figure 1 for reference. The District intends to construct the station in a manner that meets the certification requirements for Leadership in Energy and Environmental Design (LEED) certification.

The SGFD attained federal funding through the Federal Emergency Management Agency (FEMA) Assistance to Firefighters Fire Station Construction Grant (AFG) Program under the American Recovery and Reinvestment Act (ARRA) for the construction of Station 7 in September 2009. 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 environmental impacts of SGFD Station 7. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), the President's Council on Environmental Quality's regulations to implement NEPA (40 Code of Federal Regulations Parts 1500-1508), and FEMA's regulations to implement NEPA (44 CFR Part 10). 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).

3.0 Purpose and Need for Action

3.1 Purpose

The Assistance to Firefighter Grants (AFG) Program is a competitive grant program administered through FEMA that provides financial assistance to fire departments for the purpose of enhancing their ability to protect the public and fire service personnel from fire and related hazards. In September 2009, the SGFD was awarded a Fire Station Construction Grant to construct a new fire station in the northern portion of the district. Construction of the new station will enhance the SGFD's response capabilities in order to better serve and protect the community from fire and fire-related hazards.

3.2 Need

In 2005, the SGFD underwent a National Fire Protection Association/Insurance Services Office (NFPA/ISO) study, which analyzed the fire and rescue operations including population growth, call types, staffing, apparatus, and station locations. The study found that the SGFD was deficient with regard to station location and emergency response times, and was in need of an additional station that will serve emergency needs in the underserved communities, specifically the northern portion of the district. Currently this portion of the fire district relies on fire protection and emergency services from the SGFD Headquarters, located four miles away. Current response times exceed the four-minute national standard and the SGFD Headquarters lacks sufficient personnel and apparatus to respond to the growing communities throughout this large portion of the fire district.

Construction of the South Greenville Station 7 is a very important project that will decrease the response time to 17% of the residents served by the District. The addition of units housed in the South Greenville Station 7 will also enable the District to provide mutual aid to four neighboring departments more rapidly. The new station will protect an established and growing industrial-commercial hub of Greenville County, the developing residential areas for industry employees, as well as the major commercial zones located along Augusta Road. The new station will significantly reduce the overall distance and response time to this area, and will create the redundant capability the SGFD requires to adequately protect the entire district. Without the construction of South Greenville Station 7, both residential and commercial/industrial fire insurance will increase due to increasing emergency response times.

4.0 Alternatives

NEPA and FEMA regulations require that the EA process include an evaluation of reasonable project alternatives and their respective impacts to the natural and human environment during the development of the Preferred Alternative. The following is a discussion of the Preferred Alternative and potential alternatives in the event that the Preferred Alternative is not implemented.

4.1 No-Action Alternative

The No-Action Alternative would eliminate the addition of Station 7 in the north portion of the District and FEMA funding would not be provided. Under this alternative, the SGFD would continue to service the northern portion of the District from the existing Headquarters and through the use of neighboring fire districts, located over four miles away. If SGFD Station 7 is not constructed, industrial facilities, commercial facilities, and residents in the north portion of the District will continue to endure deficient emergency response times as indicated by the NFPA/ISO study. Response times would remain as they are at present, but would likely degrade with increased development. The No-Action Alternative could not only negatively impact on the health and well-being of fire personnel and the public, but fire insurance rates will likely continue to increase resulting in an additional burden to the citizens and businesses of the underserved communities.

4.2 Preferred Alternative

The Preferred Alternative is to enhance the ability of SGFD to protect the public and fire service personnel from fire and related hazards through the construction of a new fire station (Station 7) on a donated parcel of land located in The Matrix Park near the intersection of US Highway 25 (US-25) and Interstate 185 (I-185). Representative photographs of the site can be found in Appendix A. Figure 1 depicts the locations of the existing fire stations within the fire district and the location of the Preferred Alternative. The Preferred Alternative will include the construction of a 6,000-square-foot station with two drive-through bays. Station 7 will be designed for 24-hour occupancy to accommodate six personnel and two apparatus. Station 7 will be designed to achieve a platinum-level rating under the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. The building will conform to NFPA 1500 for facility Safety and will be compliant with federal and state accessibility laws and guidelines. Building material will incorporate Green Building Principles and will be sourced from within 500 miles of the project site. Conceptual designs for the construction of the facility currently include: zero stormwater runoff, light emitting diode (LED) exterior lighting; reflective roofing; rainwater harvesting, stormwater catchment, and on-site renewable energy sources for back-up lighting and hot water.

The addition of SGFD Station 7 will reduce response time by an average of five to six minutes for the referenced communities, will decrease reliance on response from stations in neighboring fire districts, and will provide redundancy in response capability by distributing equipment and personnel adequately throughout the District. Please refer to Figure 1 for the location of the proposed fire station and the location of the communities it will serve, as well as fire district boundaries and other existing fire stations. Figure 1 shows that the nearest SGFD fire station to the northern portion of the District is the SGFD Headquarters, located on Augusta Road approximately four miles from the site of the proposed Station 7. Currently a fire station does not exist in this area, which continues to experience growth of industrial operations, commercial and residential properties, and population. The SGFD has, in recent years, experienced increased reliance on neighboring fire stations due to recent growth in the district, which is illustrated by the development portrayed in recent aerial photography of the area (see Figure 2).

4.3 Other Action Alternatives

4.3.1 Other Alternative

Increase the manpower at existing SGFD stations.

4.4 Alternatives Considered and Dismissed

The No-Action Alternative has been dismissed because it has been determined by a NFPA/ISO study that the northern portion of the District needs additional fire and rescue assistance. The study revealed these areas have emergency services response times that will cause SGFD's current ranking with the NFPA to be relegated. Concurrently, fire insurance rates are increasing, particularly for commercial and industrial properties, which is deterring developers from investing in these areas.

The Other Alternative has been dismissed because increasing manpower at existing facilities will not lower the response time to the north portion of the District from existing SGFD facilities, which was considered inadequate according to the NFPA/ISO study. Increasing manpower and available equipment at the Headquarters station would enable the SGFD to respond to multiple calls simultaneously, but would not reduce the distance needed to travel to reach the north portion of the District. The existing SGFD Headquarters station cannot accommodate additional personnel or equipment, and would therefore require expansion. Expanding the Headquarters would also require additional parking, which would result in impacts on adjacent properties, and would exacerbate the environmental impacts associated with the current response times and distances such as fuel consumption and vehicular air emissions.

Therefore, the Preferred Alternative is preferred due to the site's location, acreage, existing utilities, and accessibility to communities in need of faster emergency response.

5.0 Affected Environment and Potential Impacts

This section describes potential environmental consequences of the Preferred Alternative by comparing it with potentially affected environmental components. The Preferred Alternative is also evaluated against existing environmental documentation of current and planned actions and information on anticipated future projects to determine the potential for cumulative impacts. The potential for significant environmental consequences is evaluated herein using the context and intensity considerations as defined in the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

This table summarizes the following section by describing the potential Environmental Planning and Historic Preservation (EHP) impacts and the EHP mitigation measures/BMPs that will be implemented to reduce or avoid those impacts.

Affected Environment / Resource Area	No-Action Alternative Potential Impacts	Preferred Alternative Potential Impacts	Agency Coordination / Permits	Section
Geology and Soils	No Impact	No impact to geology, impact to soils during construction, grading required on the north end of parcel, less than one acre of disturbed land	Grading Permit—Greenville County Stormwater management / Erosion Control Plan Approval-Greenville County and South Carolina Department of Health and Environmental Control (SCDHEC)	5.1.1
Air Quality	No Impact	Short-term impacts from dust resulting from construction and equipment emissions during construction	None	5.1.2
Water Quality	No Impact	Short-term impacts to surface water may be possible but unlikely during construction; no impact to water resources; site has public water and sewer	Sediment and Erosion Control Plan Approval—Greenville County and SCDHEC NPDES Construction Stormwater Permit NCG010000-Greenville County (if > 1 acre disturbed) Drinking Water System Approval—SCDHEC Sewer System Construction Approval—SCDHEC	5.2.1
Wetlands	No Impact	No Impact	None	5.2.2

Affected Environment / Resource Area	No-Action Alternative Potential Impacts	Preferred Alternative Potential Impacts	Agency Coordination / Permits	Section
Floodplains	No Impact	No Impact	None	5.2.3
Threatened and Endangered Species and Critical Habitat	No Impact	No Impact	None	5.3.1
Historical Sites	No Impact	No Impact	None	5.4.1
Tribal Coordination and Religious Sites	No Impact	No Impact	None	5.4.2
Environmental Justice	No Impact	No Impact	None	5.5.1
Noise	No Impact	Short-term impact during construction	None	5.5.2
Traffic	No Impact	Short-term impact during construction	None	5.5.3
Public Service and Utilities	No Impact	No Impact	None	5.5.4
Public Health and Safety	No Impact	No Impact	None	5.5.5

5.1 Physical Resources

5.1.1 Geology and Soils

Greenville, South Carolina is located within the northern Inner Piedmont Block of Southern Appalachian Mountains (Horton and McConnel, 1991). The Inner Piedmont Block is a fault-bounded stack of thrust sheets containing schists, gneisses, amphibolites, sparse ultramafic bodies, and intrusive granitoids. The site is located near the contact that separates the Six-mile and Paris Mountain thrust sheets. The Six-Mile thrust sheet contains muscovite-biotite schist, biotite schist, sillimanite-mica schist and gneiss, amphibolite, biotite gneiss including some that are porphyroblastic, felsic gneiss, and some manganiferous schist and gondite. The principle rock type in the Paris Mountain thrust sheet is a sillimanite-mica schist. (Horton and McConnel, 1991).

According to the contour lines for Greenville County, South Carolina, the topography of the area to be disturbed by the Preferred Alternative slopes gently from north to south away from Old Grove Road, and ranges in elevation from approximately 900 to 924 feet above mean sea level.

Soil survey information for Greenville County, South Carolina, published by the US Department of Agriculture, Natural Resource Conservation Services describes the dominant soil type in the project site as Cecil sandy loam (CeC) with gentle to moderate slopes (six to ten percent). According to the survey, this soil is found on hillslopes and is composed of clayey residuum produced by in-place chemical weathering of the granite and gneiss underlying the site. This soil consists of well-drained sandy loam and subsurface clays with no frequency of flooding or ponding. The water table in the area is generally not shallow (greater than 80 inches below ground surface) and groundwater in the surficial aquifers at the site is expected to flow from north to southwest and southeast toward lower elevations and off-site to streams located to the south and west. These soils are not foreseen as a constraint to the project. Please refer to Appendix B for the Soil Map and Map Unit Description.

In accordance with Section 1541 of the Farmland Protection Policy Act (FPPA), the Preferred Alternative was reviewed for potential impacts to prime farmlands. The Farmland Protection Policy Act, Public Law 97-98, Section 1539-1549, United States Code 4201, was enacted in 1981 to minimize the unnecessary conversion of farmland to non-agricultural uses as a result of federal actions. Programs administered by federal agencies must be compatible with state and local farmland protection policies and programs. The Natural Resources Conservation Services (NRCS) is responsible for protecting significant agricultural lands from irreversible conversions that result in the loss of an essential food or environmental resources. This land must either be used for food or fiber crops, or the land must be available for those crops, but is not urban, built-up land, or water areas.

The No-Action Alternative will require no construction and therefore will not impact geology or soils.

The Preferred Alternative was reviewed for potential impacts to the geology and soils. Construction of the proposed fire station will not require substantial alteration of native soils or topography. Land within the area of the facility footprint will be cleared and grubbed with only minimal grading necessary to remove organic soils before placement of fill to match the facility elevation to that of Old Grove Road. The organic-rich soils will be stockpiled for later re-use on-site. Mature trees and vegetation will be protected to the maximum extent practical. The site for the Preferred Alternative is currently wooded. Any vegetation which must be removed will be selectively harvested during grading and will be ground for on-site erosion control and landscaping mulch. It is not anticipated that the footers of the constructed station will penetrate the existing ground elevation. Rather, the footers will be constructed in fill that is placed over the native soils. Those portions of the site that are not used for the facility will be left in their existing state or be enhanced through the planting of native vegetation. Fill material will be clean of contaminants. Fill material will be properly compacted and analyzed by a structural engineer prior to construction on the site.

The Preferred Alternative will disturb less than one acre of land. Please refer to Appendix C for a drawing depicting the facility footprint. During construction, silt fencing and other appropriate soil erosion best management practices (BMPs) will be installed to prevent runoff from the disturbed area. The building will be approximately 6,000 square feet. Ground disturbance will occur in approximately one-half an acre, or 21,000 square feet. Stockpiles of topsoil or clean fill material will be surrounded by silt fence and covered as conditions dictate to prevent fugitive dust and soil erosion. In addition, the contractor will also spray down disturbed areas of the site to control fugitive dust. Conceptual designs for the facility include the use of pervious concrete in the driveways to capture and promote the infiltration of stormwater. Stormwater runoff from the facility will be minimized through the use of rainwater harvesting and stormwater catchment.

The proposed site is zoned County I-2 industrial by the Greenville County Planning Department, which, in addition to commercial and industrial development, allows public service buildings such as fire stations. The proposed construction site lies within an existing industrial park, and therefore does not meet the farmland requirements met under the FPPA.

5.1.2 Air Quality

The Clean Air Act requires the US Environmental Protection Act (EPA) to establish and maintain the National Ambient Air Quality Standards that define the maximum allowable concentrations of pollutants to protect human health (primary standard) including sensitive populations such as asthmatics, children, and the elderly; and welfare (secondary standard) including protection against decreased visibility, damage to animals, crops, vegetation, and buildings within a reasonable margin of safety. These standards include maximum concentrations for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter with a diameter of 10 microns or less.

According to the SCDHEC Bureau of Environmental Services, the closest ambient air monitoring station is located downtown in the City of Greenville. In October 2008, the EPA declared all areas in South Carolina unassigned/attainment. Although the frequency of sampling varies by location, Greenville County monitors particulate matter 10 microns or less (PM10) biweekly, at a minimum. Particulate matter monitoring in Greenville County currently meets the minimum federal and State of South Carolina requirements (SCDHEC Environmental Quality Control, Bureau of Environmental Sciences Laboratory, Division of Air Quality Analysis).

The No-Action Alternative will have no impacts to air quality because no construction will occur.

The Preferred Alternative will have short-term localized impacts, resulting from construction and earth moving activities such as clearing and grubbing, with minimal grading necessary only to remove deleterious material before placement of fill to match the facility elevation to that of Brevard Road. These activities could create dust. Design drawings will specific that construction contractors wet down the construction areas as conditions indicate to prevent the generation of fugitive dust. The construction of SGFD Station 7 will require the operation of heavy machinery, which will produce vehicular emissions. It is anticipated the construction of the building and parking area will be completed in approximately six months of its start date.

Current sources for air emissions at the site are vehicular emissions from the roadways within the business and technology park, from the primary traffic corridors Augusta Road and I-185, to the east and south, respectively, and potentially from nearby industrial facilities such as those located in The Matrix Park. The long-term impacts from the proposed project will be similar to existing conditions. The operation of SGFD Station 7 may result in a small adverse effect from response call vehicular emissions, and employee vehicle transportation to and from work. However, the proposed site for SGFD Station 7 will require less driving time to those communities that currently have higher response times, resulting in a beneficial effect on air quality from the vehicular emissions associated with response calls. Additionally, the construction of SGFD Station 7 will result in faster response times to fires, which may improve air quality for the area because fires may be extinguished faster.

It is not likely that the development of SGFD Station 7 will increase odor levels or the possibility for odor complaints. The proposed SGFD Station 7 will not be used as a live fire training facility where fires are intentionally started so that firemen can train how best to extinguish them.

5.1.3 Climate Change

The EPA has determined that human activities are changing the composition of Earth's atmosphere. Increasing levels of greenhouse gases (GHG), e.g. ozone and carbon dioxide, in the atmosphere is largely the result of human activities such as the burning of fossil fuels. The majority of GHGs emitted by human activities remain in the atmosphere for periods ranging from decades to centuries. Therefore, it is virtually certain that atmospheric concentrations of GHGs will continue to rise over the next few decades. Increasing GHG concentrations tend to warm the planet. EPA has issued the Mandatory Reporting of Greenhouse Gases Rule (40 CFR Parts 86, 87, 89 et al.). The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHG, manufacturers of vehicles and engines, and

facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to EPA.

The No-Action Alternative will have negative impacts to climate change because existing SGFD fire stations have longer response times to fires, therefore causing fire response vehicles to drive further to respond to fires, resulting in greater GHGs emissions. In addition, the No-Action Alternative will allow fires to burn longer before they are extinguished, which results in greater GHGs emissions, than if the fire was extinguished earlier by a response from a closer fire station.

The Preferred Alternative will have a negative impact on the climate by producing GHGs during construction and general operations, and by adding more impervious and non-reflective surfaces. Construction of the new station will entail the use of fossil fuels for construction equipment, which will increase emissions on a temporary basis. GHG emissions will be released from the fire station apparatus, and from employees going to and from the fire station. However, the SGFD Station 7 will decrease response times, thereby reducing emissions from the use of fossil fuels by apparatus and those potentially resulting from a longer burning fire.

Operation of the fire station will require energy sources for lighting, heating, etc., which may increase the emissions from the local power utility. However, SGFD Station 7 will be constructed to meet LEED Platinum standards and will maximize energy efficiency, thereby reducing GHG emissions. Conceptual designs for the construction of the facility currently include: energy efficient appliances; LED exterior lighting; reflective roofing; and on-site renewable energy sources for back-up lighting and hot water. Some of the facility features will be impervious and will absorb solar heat thus increasing normal ground temperature for this area. Due to the fact that the SGFD Station 7 will not emit 25,000 metric tons of GHG emissions, annual reporting to the EPA will not be required.

5.2 Water Resources

5.2.1 Water Quality

No surface water resources exist at the site for the proposed fire station. A tributary of Old Grove Creek is the closest receiving surface water body, and is located approximately 2,000 feet southwest of the proposed project site. According to the Flood Insurance Rate Map (panel number 45045C0457D) published by FEMA for Greenville County, South Carolina, the site is located outside of the 500-year floodplain.

The proposed project will utilize the public water utility for its water source. The proposed project site has access to existing public water and sewer lines designed for high water and sewer capacity. The water main will provide domestic and fire/sprinkler water service for SGFD Station 7. Approval of drinking water and sewer system plans and specifications is required by the SCDHEC Bureau of Water, prior to construction. Refer to Appendix D for comments from the SCDHEC Bureau of Water.

Erosion and sediment laden runoff could result from construction activities, which could impact nearby surface water quality in local waterbodies, such as the tributaries to Old Grove Creek. According to the Greenville County Stormwater Management Ordinance (Article III Section 8, Divisions 3 and 4), a stormwater management/erosion control plan is required for any land-disturbing activity in the County. The plan must be submitted and approved, as a part of the construction process, prior to any land disturbance activity. Upon approval by the County and DHEC Bureau of Water a land disturbance permit will be issued at a pre-construction conference.

Altamont submitted a scoping letter dated April 20, 2010 describing the proposed project to the DHEC Bureau of Water. The Bureau of Water responded to the scoping letter in a memorandum dated April 30, 2010. The Bureau of Water requires that a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit NCG010000 be issued with an approved Sediment and Erosion Control plan if greater than one acre is disturbed. Please Refer to Appendix D for comments from the DHEC Bureau of Water.

Additionally, the Bureau indicated that if impacts to surface water are anticipated, then a 401 Water Quality Certification and a USACE-administered Section 404 Permit will be required for the project.

The No-Action Alternative will have no impacts to water quality because no construction will occur.

The Preferred Alternative is to take place on a site with no existing surface waters, and therefore is unlikely to impact surface water resources from construction or operation. Water and sewer lines will be installed to access the systems in place within The Matrix Park. The remainder of the site, not used for the facility, will be left in its existing state or will be enhanced through the planting of native vegetation. Such vegetation requires little maintenance and will be beneficial to the ecology of the area. The facility design will incorporate features with the objective of achieving zero runoff. A porous paving material, such as pervious concrete, will be used for the driveways to promote the slowing, spreading, and infiltration of concentrated stormwater generated by impervious surfaces. Additional BMPs, such as rainwater harvesting and stormwater catchment devices, will be installed to minimize any potential runoff. Harvested stormwater will be used to irrigate landscaping.

A stormwater management/sediment erosion control plan will be submitted for approval prior to initiating grading and construction activities for the proposed fire station. BMPs including temporary and permanent seeding of bare soils, and silt fences will be installed during the construction of SGFD Station 7 to prevent sediment runoff from impacting local surface water resources.

Construction activities will not reach a sufficient depth to impact groundwater. If the Preferred Alternative will require additional excavation to groundwater depths, the applicant will consult the appropriate federal and state regulatory agencies to identify appropriate mitigation measures. Additionally, using public water will minimize impact to the local groundwater table.

It is not anticipated that the construction of the SGFD Station 7 will disturb more than one acre of land. However, if it is later determined that the project will disturb more than one acre of land then a stormwater management/erosion control plan will be submitted to Greenville County for approval concurrently with the application for a NPDES Construction Stormwater Permit NCG010000.

Due to the fact that the project is anticipated to remain at least 30 feet from the nearest surface water body, a 401 Water Quality Certification or compliance with Phase II stormwater requirements will not be required.

5.2.2 Wetlands

The United States Army Corps of Engineers (USACE) regulates the discharge of dredged or filled material into waters of the United States, including wetlands, pursuant to Section 404 of the Clean Water Act. Executive Order 11990, Protection of Wetlands, requires federal agencies to take action to minimize the destruction or modification of wetlands, by considering both direct and indirect impacts to wetlands that may result from federally funded actions. Activities disturbing jurisdictional wetlands require a permit from the USACE.

According to a National Wetlands Inventory (NWI) map, wetland soils are not present in the area to be disturbed by the project; therefore, no permit from USACE will be needed for the proposed action. Please refer to Appendix E for the NWI map.

The No-Action Alternative will not have impacts to wetlands because no construction will occur.

The Preferred Alternative will have no impacts to wetlands because none are present on or near the proposed project site.

5.2.3 Floodplains

Executive Order 11988, Floodplain Management, requires federal agencies to minimize the occupancy and modification of floodplains. The order specifically prohibits federal agencies from

funding construction in a 100-year floodplain (or 500-year floodplain for a critical facility, such as a fire station) unless there are no practical alternatives. According to FEMA Flood Rate Insurance Map Panel Number 45045C0457D, the proposed site is located outside of defined floodplains (Zone X). Please refer to Appendix F for reference. Altamont submitted a scoping letter dated April 20, 2010 describing the Preferred Alternative to the USACE, Charleston District, Hydrology, Hydraulics and Coastal Team. The USACE responded that based on the Flood Insurance Rate Map provided to them for review, the area lies outside of the 500-year floodplain.

The No-Action Alternative will have no impacts to the floodplain because no construction will occur.

The Preferred Alternative is located outside of defined floodplains. Therefore, the Preferred Alternative will not have an impact on floodplains.

5.3 Biological Resources

5.3.1 Threatened and Endangered Species and Critical Habitat

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, the project area was evaluated for the potential occurrences of federally listed threatened and endangered species. According to FEMA, the ESA requires any federal agency that funds, authorizes, or carries out an action to ensure that their project is not likely to jeopardize the continued existence of any endangered or threatened species (including plant species) or that results in the destruction of or adverse modification of designated critical habitats.

In compliance with Section 7 of the ESA, a review of the potential impacts to federally-listed endangered, threatened, and candidate species has been completed. According to the United States Fish and Wildlife Service (USFWS), the federally listed endangered, threatened, and candidate species for the Greenville County (attached in Appendix G), are the following:

Bog turtle	<i>Clemmys muhlenbergii</i>	Threatened (S/A)
Bunched arrowhead	<i>Sagittaria fasciculata</i>	Endangered
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	Threatened
Mountain sweet pitcher-plant	<i>Sarracenia rubra ssp. jonesii</i>	Endangered
Rock gnome lichen	<i>Gymnoderma lineare</i>	Endangered
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened
Swamp Pink	<i>Helonias bullata</i>	Threatened
White irisette	<i>Sisyrinchium dichotomum</i>	Endangered
White fringeless orchid	<i>Platanthera integrilabia</i>	Candidate

Altamont submitted a scoping letter dated April 20, 2010 describing the Preferred Alternative to the South Carolina Department of Natural Resources and the USFWS. Based on an evaluation of the proposed project site, the agencies concluded the following:

- South Carolina Department of Natural Resources: "No natural resources of specific concern have been identified on the proposed project site(s). Consequently, we believe that the proposed project will not substantially alter the quality of the natural environment and we have no objection to the proposed work."
- USFWS: "The Preferred Alternative is not likely to adversely affect resources under the jurisdiction of the [US Fish and Wildlife] Service that are currently protected by the [Endangered Species] Act. Therefore, no further action is required under Section 7(a)(2) of the [Endangered Species] Act."

Refer to South Carolina Department of Natural Resources and USFWS correspondence in Appendix D.

Since the site is located in a developing industrial park with interstate highway access, Altamont does not anticipate the Preferred Alternative will negatively impact critical habitat or threatened and endangered species. Additionally, historical data indicate that The Matrix Park, in which the site is located, has been previously disturbed by agricultural, silvicultural, and residential activities.

The No-Action Alternative will have no impacts to endangered or threatened species because no construction will occur.

The Preferred Alternative will have no adverse impact on federally or state-listed habitats or threatened or endangered species.

5.4 Cultural and Historic Resources

5.4.1 Historical Sites

Consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act, as amended and implemented by 36 CFR Part 800. The regulations require identification of any cultural resources so that they may be avoided by the Preferred Alternative or alternatives. Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

The No-Action Alternative will have no impacts to historic properties because no construction will occur.

The Preferred Alternative is not anticipated to impact any historical resources at the site and will not impact historical resources within one mile of the proposed fire station site. As described above in section 4.1.1, only minimal grading is proposed for the SGFD Station 7 and a majority of the site development will involve placement of clean fill on which the facility will be built. A cultural resources survey of The Matrix Park conducted in January 2010 (2010, S&ME) did not identify any significant cultural resources on the project site. With the exception of a cemetery observed outside of The Matrix Park's property boundary, no significant historic structures were located within the Park or within a 0.5-mile radius of the industrial park property.

A scoping letter dated April 20, 2010, which was submitted to the South Carolina State Historic Preservation Office (SHPO), described the need, purpose, and scope of the Preferred Alternative. The SHPO responded that "no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project." A copy of this correspondence is included in Appendix D.

In the event that archeological artifacts, including any Native American pottery, stone tools, or human remains are uncovered, the project will be halted, the applicant will stop all work in the immediate vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. The applicant will immediately inform FEMA, and FEMA will consult with the SHPO. Work in sensitive areas will not resume until consultation is completed and appropriate measures have been taken to ensure that the project complies with the National Historic Preservation Act of 1966.

5.4.2 Tribal Coordination and Religious Sites

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, directs federal agencies to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the US government-to-government relationships with Native American tribes, and to reduce the imposition of unfunded mandates upon Native American tribes.

The No-Action Alternative will have no impacts to tribal or religious sites.

Requests for evaluation of the presence or absence of known archaeological and Native American Religious sites within **the Preferred Alternative** areas were distributed by FEMA to recognize tribes that may have an interest in the proposed project. Responses have not been received from any tribes at this time. FEMA is responsible for tribal coordination.

Please refer to section 4.4.1 for plan of action if significant cultural or historical items are found.

5.5 Socioeconomic Resources

5.5.1 Environmental Justice

Executive Order 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.

Altamont reviewed the most recent population data for Greenville County, South Carolina available through the US Census Bureau. According to the US Census Bureau, in 2009, Greenville County had an estimated population of 451,428. Based on the American Community Survey for 2006-2008, the median household income for Greenville County in 2008 was \$47,408 with 13.2 percent of individuals living below the poverty level. In 2008, minorities made up 23.3 percent of the population in Greenville County. The closest urban area near the site is Piedmont, South Carolina, which had a total population of 4,684 according to the Census 2000 data. The median household income was \$36,310, with 10.5 percent of the population below the poverty level. Minorities made up 7.9 percent of the population. Please refer to Appendix H for reference.

The No-Action Alternative will have no disproportionate impacts to low-income or minority populations.

The Preferred Alternative will enhance resident safety by decreasing response times in the communities to be served by the SGDF Station 7 in Greenville County. There will be no disproportionately high or adverse impact on minority or low-income portions of the population. All populations will benefit from the improved emergency response provided by the proposed facility.

5.5.2 Noise

Noise can be considered unwanted sound and sound is typically measured in decibels (dB). An average measure of sound is known as the day-night average sound level (DNL), and is used by agencies for estimating sound impacts and establishing guidelines for compatible land uses. EPA guidelines 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. Typically fire sirens have noise at 115 dB at a distance of 10 feet from the source and approximately 60 dB at a distance of one mile.

Current ambient noise levels for the project area include noise resulting from traffic within The Matrix Park's internal road system, which designed for industrial and commercial use, as well as heavy traffic, police, and ambulance services along US-25 and I-185, to the east and south, respectively. I-185 is a primary regional traffic corridor known as "The Southern Connector."

The No-Action Alternative will have no impacts to noise levels because no construction will occur.

The Preferred Alternative has the potential to produce greater short-term noise disturbance locally, resulting from construction of the SGDF Station 7. To reduce noise levels during that period, construction activities will take place only during daytime working hours (e.g., 7:00 a.m. – 6:00 p.m.) enforceable by local ordinance. Equipment and machinery installed at the project site will meet all local, state, and federal noise regulations. Since the site for the Preferred Alternative is located within an existing industrial park, noise disturbance is unlikely to impact residential areas. Furthermore, residents and businesses in the vicinity of the South Greenville Station 7 are routinely

subject to noise resulting from heavy traffic, police, and ambulance calls along Augusta Road and I-185, two main regional traffic corridors. However, the station will abide by the provisions set forth in the Greenville County Zoning Ordinance for the Industrial I-2 Classification to minimize disturbance to residential and commercial areas, and fire and rescue personnel will only engage sirens when outside of residential areas and when absolutely necessary.

5.5.3 Traffic

The proposed SGFD Station 7 will be located in The Matrix Park, near the intersection of Augusta Road and I-185. Access to the proposed fire station site will be provided by Old Grove Road located along the north property boundary. Roads within The Matrix Park are multilane and are designed for industrial use and large vehicles.

The No-Action Alternative will have no impacts to traffic because no construction will occur.

The Preferred Alternative will likely increase traffic on a short-term basis as a result of construction equipment and construction workers accessing the site. This temporary increase could potentially result in slower traffic flow during the construction phase of the project. Once the proposed fire station is in operation, the traffic increase is expected to be minor and only associated with personnel traveling to and from the facility, and emergency response vehicles exiting and arriving the fire station. Traffic control signs will be visible to cars approaching the proposed fire station from each direction. No significant long-term impact to traffic is expected.

5.5.4 Public Service and Utilities

Public services available to the proposed site include: police and fire protection, emergency medical services, and animal control. Utilities include power, natural gas, water, sewer, and telecommunications. The proposed site is within the Anderson District of the Greenville County school system (Grove Elementary, Tanglewood Middle, and Carolina High School and Academy).

The No-Action Alternative will have no impacts to public service or utilities because no construction will occur.

The Preferred Alternative will benefit the area communities through decreased emergency response times, and decreased fire insurance rates. SGFD Station 7 anticipates using all of the utilities listed above and connection issues are not anticipated.

5.5.5 Public Health and Safety

To minimize risks to safety and human health, all construction activities will be performed using qualified personnel trained in the proper use of the appropriate equipment for the project, including all appropriate safety precautions. All activities will be conducted in a safe manner in accordance with the standards specified in the Occupational Safety and Health Act (OSHA) regulations. Additionally, Executive Order 13045, Protection of Children, requires federal agencies to make it a high priority to identify and assess environment health and safety risks that may disproportionately affect children.

A Phase I Environmental Site Assessment (Phase I) was not performed for the donated property for the proposed project. However, Engineering and Consulting Services, LLC (ECS) conducted a Phase I on 870 acres in The Matrix Park in June 2008 that included the site of the Preferred Alternative. ECS identified no Recognized Environmental Concerns (RECs) on-site or off-site of the referenced subject property. ECS did observe dumpsites containing domestic refuse throughout the area and stated that dense vegetation in many parts of the site may have prevented the observation of underground storage tanks (USTs) and septic tanks that may exist in areas that are former residential dwellings.

Hazardous substances are defined as any solid, liquid, contained gaseous or semi-solid waste, or any combination of regulated wastes that pose a substantial presence or potential hazard to human

health and the environment. Hazardous substances are primarily generated by industry, hospitals, research facilities, and the government. Improper management and disposal of hazardous substances can lead to pollution of groundwater or other drinking water supplies, and the contamination of surface water and soil. The primary federal regulations for the management and disposal of hazardous substances are the Comprehensive Environmental Response, Compensation and Liability Act and the Resource Conservation and Recovery Act (RCRA).

A visual survey of the site conducted by Altamont on March 30, 2010 did not reveal the presence of vent pipes or fill pipes, which might indicate the presence of hazardous materials or underground storage tanks (USTs) or aboveground storage tanks (ASTs) or any other recognized environmental condition. In addition, Altamont consulted the SCDHEC Bureau of Land and Waste Management regarding the Preferred Alternative in a letter submitted to the agency on April 20, 2010. The Bureau of Land and Waste Management did not identify any site known, permitted or regulated by the agency within one-half mile of the proposed project site. A copy of the agency's response is included in Appendix D.

The No-Action Alternative will have no impacts to public health or safety because no construction will occur.

The Preferred Alternative will allow the VHFR to improve their emergency response operations. Construction of the new facility will provide faster emergency response times to the communities that it serves. These operations are critical to the health and safety of residents of the communities in the north portion of the District. Construction activities associated with the new fire station could pose safety risks to those performing the activities. To minimize risks to safety and human health, all construction activities will be performed using qualified personnel trained in the proper use of the appropriate equipment, including all appropriate safety precautions. Additionally, all activities will be conducted in a safe manner and in accordance with the standards specified in the OSHA regulations. The appropriate signage and barriers will be in place prior to construction activities to alert pedestrians and motorists of project activities.

It is anticipated that the Preferred Alternative will generate no hazardous materials or waste impacts. Any hazardous materials discovered, generated, or used during construction will be handled and disposed of in accordance with applicable local, state, and federal regulations.

5.6 Cumulative Impacts

According to CEQ regulations, cumulative impacts represent the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such 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 Preferred Alternative and other alternatives occurring or proposed near the proposed project site.

The site of the proposed fire station is located within an existing industrial park that is located at the intersection of Augusta Road (US-25) and I-185, two regional traffic corridors that border the industrial park to the east and south, respectively. The surrounding area is mixed industrial, commercial, and residential. Development is expected to increase in the vicinity of the proposed fire station site. Potential adverse impacts related to the project are limited to traffic, construction, and land use. Traffic impact analysis indicated that, although the operation of the proposed station may slightly increase traffic due to response calls and employee travel, there would be no significant impacts to traffic and thus no cumulative impacts. Construction of the fire station may negatively impact air quality and increase ambient noise levels, but only on a temporary basis. Thus, construction of the fire station will have no significant cumulative impacts to the environment. With regards to land use, the construction of the fire station will mitigate rising insurance rates which may, in turn, promote development in the area. However, recent trends

indicate that development in the area is expected to increase regardless of whether the Preferred Alternative is implemented. In accordance with NEPA and to the extent reasonable and practical, this EA considered the combined effect of the Preferred Alternative and the other actions occurring or proposed in the vicinity of the proposed project site. It has been determined that the Preferred Alternative will cause no greater impact than would be reasonably anticipated by impacts resulting from the development of the mixed-use commercial/residential parcel for another purpose.

6.0 Agency Coordination, Public Involvement, and Permits

FEMA is the lead federal agency conducting the NEPA compliance process for the proposed SGFD Station 7 in Greenville County, South Carolina. It is the goal of the lead agency to expedite the preparation and review of NEPA documents and to be responsive to the needs of the community and the purpose and need of the Preferred Alternative while meeting the intent of NEPA and complying with all NEPA provisions. As part of the EA process, Altamont conducted inter-agency reviews in the form of agency consultation letters submitted to all appropriate regulatory agencies and responses. Section 7 lists all agencies consulted for the purpose of this EA. Applicable agency responses are provided in Appendix D.

As of the date of this report, the proposed project has been discussed with the local community through the following:

- Numerous Piedmont, South Carolina town meetings
- Advertisement in the Greenville County Newspaper announcing request for proposals for LEED build-design services for new facility
- Advertisement in Greenville County Newspaper announcing short list of LEED build-design contractors
- The SGFD Commission Board meetings

All of the above-mentioned meetings are open to the public. Additionally, a large sign has been posted at the proposed project site, which plainly describes the proposed project and its location. Please refer to Appendix A for representative photographs of the posted sign, along with additional photographs of the site. To date, SGFD has received no negative comments in response to the Preferred Alternative. SGFD will notify the public of the availability of the EA through publication of a public notice in a local newspaper as required by NEPA. Copies of the EA will be placed in the SGFD Headquarters, a number of public buildings in the community, and on the FEMA website. FEMA will conduct a public comment period commencing on the initial date of publication of the public notice.

In accordance with applicable local, state, and federal regulations, the applicant is responsible for acquiring any necessary permits prior to commencing construction at the proposed project site. The following permits and approvals may be required prior to construction:

- A State Building Permit
- Land Disturbance Permit
- Sediment and Erosion Control Plan Approval
- NPDES Construction Stormwater Permit NCG010000
- Drinking Water System Construction Approval
- Sewer System Construction Approval

7.0 List of Preparers

The following is a list of individuals and their organizations who contributed to the technical content of the EA.

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

Stuart Ryman, PG
Project Manager
Altamont Environmental, Inc.
231 Haywood Street
Asheville, North Carolina
Telephone: (828) 281-3350
B.S. 1983, Geological Engineering, University of Idaho

Katie Massie
Staff Scientist
Altamont Environmental, Inc.
231 Haywood Street
Asheville, North Carolina
Telephone: (828) 281-3350
M.S. 2006, Ecology and Evolutionary Biology, University of Arizona
B.S. 2001, Biology, University of North Carolina—Chapel Hill

8.0 Parties Consulted and References

The following agencies and organizations consulted through a scoping letter submitted by Altamont on April 20, 2010:

- State Historic Preservation Office
- US Fish and Wildlife Service
- Catawba Indian Nation
- Eastern Band of Cherokee Indians, Qualla Boundary Reservation
- South Carolina Department of Health and Environmental Control
 - Bureau of Water
 - Bureau of Air Quality
 - Bureau of Land and Waste Management
- South Carolina Department of Natural Resources

9.0 References

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