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LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
BMP	Best Management Practice
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CZMA	Coastal Zone Management Act
dB	Decibel
dBA	A-weighted decibel frequency scale
DFIRM	Digital Flood Insurance Rate Map
DNL	Day-night average sound level
DPU	Department of Public Utilities
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
F & R	Froehling & Robertson, Inc.
FDPA	Flood Disaster Protection Act
FEMA	Federal Emergency Management Agency
FOIA	Freedom of Information Act
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy of 1981
MCLs	Maximum Contaminant Levels
NAAQS	National Ambient Air Quality Standards
NCA	Noise Control Act of 1972
NEPA	National Environmental Policy Act
NFIA	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO₂	Nitrogen Dioxide
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWSC	National Weather Service Climate

LIST OF ACRONYMS

O₃	Ozone
OCRM	Ocean and Coastal Resource Management
ONCA	Office of Noise Control and Abatement
OSHA	Occupation Safety and Health Administration
PM	Particulate Matter
QCA	Quiet Communities Act of 1978
SDWA	Safe Drinking Water Act of 1974
SO₂	Sulfur Dioxide
SHPO	State Historic Preservation Office
SR 60	State Route 60
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCP	Virginia Coastal Program
VCU	Virginia Commonwealth University
VLR	Virginia Landmark Register
VOC	Volatile Organic Compound
VDEQ	Virginia Department of Environmental Quality
VDHR	Virginia Department of Historic Resources

1 INTRODUCTION

Schnabel Engineering Consultants, Inc. (Schnabel) has performed an Environmental Assessment (EA) in general accord with the National Environmental Policy Act of 1969 (NEPA) and Federal Emergency Management Agency's (FEMA's) regulations implementing NEPA (44 CFR Subpart 10). NEPA was established specifically to consider the environmental consequences of proposed actions before decisions are made. The NEPA protocol provides a systematic approach for identifying and assessing the aspects of an action which can provide the basis for project planning and developing accurate costs for funding purposes. FEMA will use the findings of this EA to prepare an Environmental Impact Statement (EIS) or issue a Finding of No Significant Impact (FONSI). In this case, the FEMA decision to be made is whether to provide funding to construct a proposed fire station.

The objectives of this EA are as follows; to establish baseline environmental conditions at the proposed construction location, evaluate the potential impacts to the existing environment resultant from construction of the fire station, and to compare the proposed action to the No Action Alternative. Additionally, the EA assists FEMA by providing the necessary environmental information to be used in developing mitigation strategies to minimize or avoid impacts to the existing environment should FEMA decide to fund the proposed project. The ultimate goal of the EA is to aid FEMA and the City of Richmond (City) make decisions based on understanding the environmental consequences.

The City is examining options for the proposed construction of a modern fire station to replace an existing fire station (Fire Station No. 17). The present Fire Station No. 17 was constructed in 1917 for horse-drawn fire equipment. The 4,970 square feet one-story building of ordinary brick and frame construction has been in continuous use without major building component renovations. The new station will consist of an approximately 10,836 square-foot structure and asphalt parking. A replacement of the existing facility will greatly improve service to neighborhoods by providing proper accommodation for full-time resident firefighters and the general public. Additionally, operational and maintenance cost savings will be realized compared to that of age-related issues associated with a structure about a century old.

The subject property for the proposed fire station is within Canoe Run Park located at the northwest quadrant of Semmes Avenue and West 22nd Street in Richmond, Virginia. The total area of Canoe Run Park is approximately 10 acres. The proposed project area is 2.24 acres which encompasses about 22% of the Park area. For the purpose of this assessment, we have considered the 2.24-acre proposed project area as the subject site. The site address is 2211 Semmes Avenue, Richmond Virginia. A site location plan is attached as Figure 1. The 2.24-acre property currently exists as a recreational park consisting of wooded and open grassy areas. The site has approximate coordinates of 37.521700 N and 77.456100 W immediately south of the James River. Adjacent properties consist of mainly roadways, residential, commercial, open grassy areas, and wooded properties.

2 PURPOSE AND NEED

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards. Examples of such hazards are hurricanes, earthquakes, tornados, floods, fire or a hazardous spill, an act of nature or an act of terrorism. The purpose of the action alternative is to provide a replacement for the existing Fire Station No. 17 due to its age, structural integrity, and its inability to meet the needs of the Fire Department. Additionally, a larger facility is needed to serve the City's growing population.

The need for a new fire station is based on the following factors:

- The living space within Fire Station No. 17 is poorly configured and does not meet the requirements of a modern fire station with daily contacts with the public who come for services including blood pressure checks, child safety seat inspections, and other safety education and customer service programs. There is no ADA accessible entrance from narrow gravel driveways and uneven gravel parking areas on opposite sides of the station. The watch-desk area that serves as the public point of contact is secluded from any entrance and not adequate for meeting the needs and requests of the general public. Currently, customers navigate through semi-public spaces to arrive at a central room with no reception area.
- Lack of public restrooms, accessible or otherwise. Fire Station No. 17 currently has only one restroom that serves employees and the public, both males and females. It is poorly configured, lacks proper ventilation and formal drying and redressing areas.
- Structural integrity problems including a break in the main sewer pipe in the crawlspace, weak and uneven wooden floors, and malfunctioning windows and doors.
- Inadequate wiring and electrical system to meet the requirements of a contemporary commercial building. None of the original wiring is grounded posing risk to customers. Additionally, the station lacks enough electrical receptacles and circuit panels, requiring the use of heavy duty extension cords and receptacle strips.
- Inadequate storage space for fire trucks and equipment, and
- Improper location of fire station that has created difficult maneuverability for large fire trucks and equipment used in the new Total Quint Concept implemented in 1997. The Total Quint Concept uses relatively larger fire trucks and is employed at the existing station.

Advantages of replacing Fire Station No. 17 include improved and expedited customer service, and adequate accommodation for full-time firefighters and citizens. The use of energy-efficient materials consisting of energy-saving bulbs, appliances, toilets, and insulation will provide cost-effective design solutions at the new fire station. The use of energy-efficient building materials and furnishings will provide value in long-term energy consumption. Additionally, health and safety of employees and customers will be enhanced by having a modern building electrical system adequately suited for the electrical needs of the station.

3 ALTERNATIVES

3.1 No Action Alternative

The No Action Alternative is presented as a baseline for comparing the consequences of implementing the proposed action/alternative. Under the No Action Alternative, Fire Station No. 17 will continue to operate at its present location, 2901 Bainbridge Street in Richmond Virginia. No measures will be taken to relocate the existing fire station. City neighborhoods will continue to experience inadequate customer service and amenities from the fire department. The potential for risks to human health and safety will be elevated resultant from service interruptions, late arrival time of firefighters to disaster scenes, and inadequate customer service. The No Action Alternative will not meet the purpose and need stated in Section 2.0 of this EA.

3.2 Proposed Action/Alternative – Construction of Fire Station No. 17

The Proposed Action/Alternative is to relocate, design and construct a modern energy-efficient Fire Station No. 17. This proposed action/alternative allows for FEMA and the City of Richmond accomplish the stated purpose and need as outlined in Section 2.0.

3.3 Other Action Alternatives

No other action alternatives were considered to alleviate the significant and multiple deficiencies of the current station at the time of this assessment.

3.4 Alternatives Considered and Dismissed

The City of Richmond Department of Fire and Emergency Services identified and reviewed potential sites for proposed Fire Station No. 17. Sites reviewed included properties that had sufficient land area of approximately two acres or more. Two parks (Canoe Run Park and Albert-Carter Jones Park) and a vacant commercial property were shortlisted as potential sites for the proposed project. Additionally, park services and fire services will be compatible and not infringe on the mission of one another. Two sites within the City were identified and evaluated for this project and dismissed. Factors considered in the choice of the proposed site location over the others included location, associated costs to construct and maintain site, accessibility, land use capability, access to utilities, engineering and construction feasibility, community acceptance, proximity to increasing population areas, and available space. The current site location will effectively serve to the needs of citizens of Richmond and the fire department in the delivery of life safety and enhanced customer service while providing a proper working environment that is safe, healthy, and diverse for today's workforce.

4 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

4.1 Geology and Soils

Existing Environment

The site is located along the Fall Line. The Fall Line represents the lateral boundary separating the Coastal Plain and Piedmont physiographic provinces. The Coastal Plain is characterized by marine sediments of Cretaceous to recent geologic age. The Piedmont Physiographic Province is characterized by igneous and metamorphic rock formations of Precambrian to Mesozoic geologic age. According to the 1989 Virginia Division of Mineral Resources (VDMR) Geologic Map of the Coastal Plain and Adjacent Parts of the Piedmont, Virginia, the site is underlain by Pliocene geologic age sand and gravel overlying the Mississippian geologic age Petersburg granite.

According to the U.S. Department of Agriculture's (USDA) Soil Conservation Service, an Appling-Wedowee Complex, Udorthents-Dumps Complex, and Urban Land underlie the site. The Appling Series consists of deep, well-drained gently sloping to moderately steep soils that have a dominantly clayey subsoil. These soils formed from materials weathered from granite and gneiss. Runoff for this soil type is moderate. The Wedowee Series consists of deep, well-drained gently sloping to sloping soils that have a loamy to clayey subsoil. These soils formed from material weathered from granite and gneiss. Runoff for this soil type is also moderate. Udorthents consist of nearly level to gently sloping, well-drained to somewhat poorly-drained loamy and clayey soil materials in areas of cut land, fill and hydraulic fill. These soils are more closely associated with urban development and channel dredging in the tidal part of the James River. The Urban Land Series is found in the business centers of villages and cities. Urban Land consists of areas where the soil surface is covered with buildings, streets, parking lots, and other impervious surfaces which obscure soil identification. Urban Land consists of greatly altered land areas, varying in characteristics for depth to bedrock, slope, and depth to water table. As an area covered by impervious surfaces, this soil series generally has very low permeability and high runoff of rainwater, however, the site is considered to be well-drained since stormwater drainage from the site is controlled.

According to a geotechnical engineering study by Froehling & Robertson Inc. (F & R) for PSA-Dewberry's Needs Assessment Study dated January 9, 2009, surficial soils consisting of roots, fibrous matter, and/or organic components were encountered up to 0.3 feet below ground surface (bgs) in onsite test borings. Fill soil was encountered to depths of 19.5 feet to 25 feet bgs, the maximum depth of exploration. Observed fill soils were classified as clayey sand, sandy lean clay, and fat clay and contained materials such as brick, glass, and asphalt. Natural soils consisting of clayey sand and sandy silt was encountered to depths of 19.5 and 20.5 feet bgs in two onsite borings. Groundwater was not encountered in the onsite borings.

The Farmland Protection Policy Act of 1981 (FPPA) was enacted when congress identified the need to implement programs and policies to protect farmland and urban sprawl and the waste of energy and resources that accompanies sprawling development. FPPA states that "federal agencies must take steps to ensure that federal actions do not contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses in cases in which other national interests do not override the importance of protecting the farmland resources".

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impacts to soils and geology.

Under the Proposed Action/Alternative, no impacts to geology will occur. Excavation of soils for structural footings and site construction will be minimal and is not expected to exceed two to three feet bgs. Bedrock will not be encountered during excavation. Relatively minor impacts to soils and topography will occur during excavation and site grading. Best Management Practices (BMPs) including erection of silt fences will be implemented at the site during construction to minimize erosion of exposed soil.

Upon review of documentation pertaining to this project by USDA-NRCS, prime and unique farmlands are not known to exist within the proposed project limits. Therefore pursuant to the FPPA, FEMA does not have to complete Form AD 1006, Farmland Conversion Impact Rating.

4.2 Air Quality

Existing Environment

Common air pollutants found all over the United States are Sulfur Dioxide (SO₂), Ozone (O₃), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), and Particulate Matter (PM). These air pollutants can cause harm to health, environment and property damage. At the federal level, the Environmental Protection Agency (EPA) manages concentrations of air pollutants in the atmosphere through the Clean Air Act (CAA) by enforcing established National Ambient Air Quality Standards (NAAQS) set forth by the agency. The EPA calls these pollutants Criteria Air Pollutants because they are regulated by first developing health-based criteria as the basis for setting permissible limits. The first set of limits (primary standards) protects health. The second set of limits (secondary standards) is intended to protect the environment and property damage. VDEQ's Division of Air Quality also enforces the Virginia Air Pollution Control Law as well as meeting Virginia's obligations under the CAA. According to the VDEQ Division of Air Quality website, the primary pollutant in the City of Richmond is ozone and PM. The City had an Air Quality Index (AQI) of 41 for ozone and 30 for PM respectively on April 8, 2010, indicating good air quality that poses little or no health risk. A good AQI is between zero and 50. The subject property therefore appears to possess good air quality.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impact to air quality.

Under the Proposed Action/Alternative, short term impact to air quality may occur during excavation and construction of the new fire station. Construction and earth-moving activities will temporarily increase localized particulate and volatile organic compounds (VOCs). Occupational Health and Safety Administration (OSHA) Standards as outlined in 29 CFR Part 1910 will be adhered to during construction. Best Management Practices (BMPs) such as wetting of soil surfaces and reducing operational times of equipment will be put in place to additionally reduce harm to health, environment, and property. It is anticipated that impacts to air quality is for a limited time only during construction and the long-term effects of such impacts is very minimal. Virginia DEQ confirmed, through a Freedom of Information Act

(FOIA) request, that air quality records containing information on air quality problems do not exist for the site location.

4.3 Climate

Existing Environment

According to the National Weather Service Climate (NWSC) Center, the City of Richmond has a humid sub-tropical climate with moderate seasonal changes. Spring in Richmond begins around March with mild days and cool nights, and by late May, the temperature warms up considerably to usher in the summer. Summer temperatures can be in excesses of 90 °F with very high humidity. According to NWSC Center, July is the warmest month of the year for Richmond with the average maximum precipitation. On an annual average basis, the City receives about 83 nights below freezing. Warm temperatures gradually decline into October, the beginning of autumn marked by cooler nights. Richmond is normally characterized by mild winters with the coldest days featuring temperatures in the upper 20s to the lower 30s, and highs in the mid to upper 40s. On average, the coldest month of the year is January. Snowfall is usually light averaging 12 inches per season.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impact to existing climate in the City of Richmond.

Under the Proposed Action/Alternative, there will be no impact on climate within the City. Several construction activities exist in the City of Richmond throughout a given year. Historical climate data for the City suggests that no significant deviation in recorded parameter values such as temperature, precipitation, and wind is anticipated during proposed construction.

4.4 Water Quality

Existing Environment

The proposed site is located approximately 1,000 feet south of the James River. No surface water was observed at the site during our site reconnaissance on March 18, 2010 and April 8, 2010. Ponded surface water was observed on northern adjacent property about 200 to 400 feet north of the subject site boundary. According to the Environmental Data Resources (EDR) Radius Map with GeoCheck and NEPA Checklist report, no water bodies are indicated to be present at the project location.

According to a geotechnical engineering study by F & R for PSA-Dewberry's Needs Assessment Study dated January 9, 2009, groundwater was not encountered in any of the onsite borings to a depth of 25 bgs, maximum depth of onsite borings. Groundwater at the site exists at depths greater than 25 feet bgs. The project location and residential properties in the site vicinity are serviced by the City's potable water supply system. According to the EDR Radius Map with GeoCheck report, a United States Geological Service (USGS) water observation and monitoring well was identified about 1,800 feet southwest of the project location. Information within the Consumer Confidence Report on Drinking Water Quality 2009 indicates the City of Richmond were in 100% compliance with all federal and state Safe Drinking Water

Act (SDWA) of 1974 Maximum Contaminant Levels (MCLs). The City has been 100% compliant with SDWA MCLs for the past five years.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impact to ponded surface water at the site and groundwater.

Under the Proposed Action/Alternative, there will be no impact to groundwater at the project location. Groundwater at the site exists at depths greater than 25 feet bgs. Excavation at the site will be limited to the first few feet below current site grade. There will be no effect on water quality and no increase in water use in the area. An erosion control plan to prevent sediment runoff into local water bodies during construction is required prior to development. As such, ponded surface water present on adjacent property northwest of the subject site within Canoe Run Park is not anticipated to be impacted during construction. The erection of silt fences is expected to minimize the potential of impact. Virginia DEQ confirmed, through a Freedom of Information Act (FOIA) request, that water quality records containing information on water quality problems do not exist for the site location.

4.5 Wetlands

Executive Order (EO) 11990, Protection of Wetlands, 1977 seeks "to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial use of wetlands". To meet these objectives, the Order requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

Existing Environment

According to the National Wetlands Inventory (NWI) Map from the Fish and Wildlife NWI Data within the EPA NEPA Check Report, no wetlands are indicated to be present on the subject property. No wetland areas were observed at the subject site during our site reconnaissance on March 18, 2010. Ponded surface water was observed on adjacent property in the western section of Canoe Run Park about 200 to 400 feet north of the subject site. The ponded surface water was very shallow in most areas not exceeding two inches and appeared to be associated with recent rains. The source of ponded water is likely resultant from water seepage associated with recent rains and stormwater runoff along the hillside on adjacent property northwest of the subject site.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact to wetlands. No wetlands are indicated to be present on the subject property.

Under the Proposed Action/Alternative, there will be no adverse impact to wetlands. No wetlands are indicated to be present on the subject property.

4.6 Floodplains

In furtherance of NEPA, as amended (42 U.S.C. 4321 et seq.), the National Flood Insurance Act (NFIA) of 1968, as amended (42 U.S.C. 40011 et seq.), and the Flood Disaster Protection Act (FDPA) of 1973 (Public Law 93-234, 87 Stat. 975), EO 11988 was enacted in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplain development wherever there is a practicable alternative.

Existing Environment

According to the FEMA Digital Flood Insurance Rate Map (DFIRM) within FEMA Q3 Flood Data, the project area is not located within the 100-year and 500-year flood zones.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact to the 100-year and 500-year flood zone. The project area is not within the 100-year and 500-year flood zones.

Under the Proposed Action/Alternative, there will be no adverse impact to the 100-year and 500-year flood zones. The project area is not within the 100-year and 500-year flood zones.

4.7 Coastal Resources

The Coastal Zone Management Act (CZMA) of 1972 is administered by NOAA's Office of Ocean and Coastal Resource Management (OCRM). Federal agencies and recipients of federal assistance must comply with the federal consistency requirements of the CZMA, as amended. Accordingly, federal activities which are reasonably likely to affect any land or water use or natural resources of Virginia's designated coastal resources management area must be consistent with the enforceable policies of the Virginia Coastal Program (VCP). As the lead agency for the VCP, the DEQ is responsible for coordinating the Commonwealth's review of federal consistency determinations and certifications with cooperating agencies and responding to the appropriate federal agency or applicant.

According to the Environmental Data Resources (EDR) Radius Map with GeoCheck and NEPA Checklist report, no water bodies are indicated to be present at the project location.

The Virginia Commonwealth University (VCU), in collaboration with VDEQ, has established a Virginia Coastal Zone Management program known as "Coastal GEMS". According to the VDEQ website, "Coastal GEMS" serves as a gateway to Virginia's coastal resource data and maps, coastal laws and policies, facts on coastal resource values, and direct links to collaborating agencies responsible for current data. A review of the "Coastal GEMS" database did not indicate the proposed project could potentially affect Virginia's coastal resources.

Existing Environment

The City of Richmond is located within a Coastal Zone Management Area. This is because the City is situated along the James River, a partly tidal water body associated with the Atlantic coast watershed.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impact on coastal resources.

Based on our review, under the Proposed Action/Alternative, there will be no adverse impact on coastal resources. Additionally the Virginia DEQ was contacted as part of this study to assess CZMA federal consistency and determine whether coastal resources will be adversely impacted by the proposed construction. In their letter dated May 18, 2010, the VDEQ stated that the proposed project is consistent with the VCP provided all applicable permits and approvals listed under "Enforceable Programs of Virginia's Coastal Zone Management Program" are received prior to commencement of the proposed construction. A copy of the VDEQ letter and our submission to the VDEQ are included within Appendix D.

4.8 Biological Resources

The Department of Interior's United States Fish and Wildlife Service (USFWS) and the Commerce Department's National Marine Fisheries Service (NMFS) share responsibility in administering the Endangered Species Act (ESA) of 1973. The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend.

Existing Environment

The proposed subject property is open and mostly grass-covered. The westernmost site section along western site boundary is wooded. Ponded surface water was observed within wooded portion of the site during our site reconnaissance on March 18, 2010 and April 8, 2010. Various species of birds were observed in the wooded section of the site and in the vicinity of water body. It is our observation that the wooded section of the site may potentially serve as habitat for wildlife including birds, amphibians, reptiles, and mammals.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact on vegetation, threatened and endangered species, wildlife, fish, and critical habitats.

Under the Proposed Action/Alternative, there will be no adverse impact on threatened and endangered species, wildlife, fish, and critical habitats. The USFWS concurred that the proposed construction will not impact threatened and endangered species, wildlife, fish, and critical habitats.

4.9 Cultural Resources

Cultural resources are archaeological and historic resources eligible for or listed on the National Register of Historic Places (NRHP). Cultural resources include buildings, sites, districts, structures or objects having historical, architectural, archaeological, cultural, or scientific importance. The Department of Historic Resources (DHR) is Virginia's State Historic Preservation Office (SHPO) and administers two programs designed to recognize our resources and to encourage their continued preservation. The programs are the NRHP and the Virginia Landmarks Register (VLR). DHR manages the NRHP and VLR programs by enforcing the National Historic Preservation Act of 1966 (NHPA), and as amended. Under NHPA, the Advisory Council on Historic Preservation (ACHP) was established as an independent federal agency responsible for promoting the preservation, enhancement and productive use of our nation's historic resources. The ACHP also advises the president and congress on national historic preservation policy. As a requirement of Section 106 of NHPA, federal agencies must act as responsible stewards of our nation's resources when their actions affect historic properties by consulting the SHPO and others who may have knowledge of historic properties that can be affected.

Existing Environment

During an archival research of DHR's files, reports, and maps, it was determined the project's Area of Potential Effect (APE) is located in the Springhill Historic District (VDHR # 127-6180). The project area is adjacent to the Woodland Heights Historic District (VDHR # 127-0830) located west of the site. Architectural resources are indicated to be present at the Springhill Historic District. No archaeological resources are indicated to be present at the Springhill Historic District. Springhill was designated as a historic district in 2006. The Springhill Historic District is currently made up of 52 properties and is approximately 28 acres. District boundaries include 19th to 22nd Streets and Riverside Drive to Semmes Avenue. The Springhill neighborhood also includes two apartment buildings along W. 20th Street closest to the river but neither building is included in the Springhill Old and Historic District.

Springhill was an early twentieth century working class suburb of Manchester, at a time when the south bank of the James River was still mainly farms and woodlands along Old Manchester's edge. Richmond was home to an abundance of millwork companies, some of which constructed their own buildings. There is a strong likelihood that some of Springhill's "pre-fabricated" bungalow-style homes were the result of speculative building by a single developer using identical purchased components, or an in-house millworks/builder operation. Naturally isolated by the geographic barrier of Canoe Run, Springhill's combination of compact size, unique characteristics and property owner interest make it the first Old and Historic District south of the James River. No other cultural resources were identified within the project's APE.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact on cultural resources including buildings, sites, districts, structures or objects having historical, architectural, archaeological, cultural, or scientific importance.

No buildings or structures exist at the proposed project location. The existing Fire Station No. 17 structure is listed on the National Register of Historic Places. According to City representatives the present Fire Station No. 17, which is located in the Woodland Heights Historic District, will be retained in

the City's inventory with the Fire Department. The facility will be used as satellite administrative offices and for logistical support. All planning involving the future use of the existing station will be coordinated with DHR by the City.

Based on our review, under the Proposed Action/Alternative, there will be no adverse impact on cultural resources including buildings, structures or objects having historical, architectural, archaeological, cultural, or scientific importance. Additionally, Virginia DHR was contacted as part of this study to assess potential impacts to cultural resources. DHR was provided with the City's future use plans for the existing fire station and determined in their letter dated April 12, 2010 that the project undertaking will have No Adverse Effect to cultural resources including buildings, sites, districts, structures or objects having historical, architectural, archaeological, cultural, or scientific importance. A copy of the DHR letter is included within Appendix D.

4.10 Environmental Justice

Existing Environment

The proposed project location is located in a predominantly residential area. Commercial properties are also present in the subject site vicinity. Eastern adjacent property consists of W. 22nd Street, beyond which are commercial, residential, wooded, and open properties. Northern adjacent property consists of an apartment building, wooded areas, and Riverside Drive. Western adjacent property consists of residential properties and wooded areas. Southern adjacent property consists of commercial properties, Semmes Avenue, warehouses, and open areas. Residential properties in the general site vicinity consist of single-family houses and multi-family apartment buildings. Commercial properties in the general site vicinity include grocery shops, antique shops, and petroleum service stations. The James River is present about 1,000 feet from the proposed site location.

According to the United States Census Bureau (USCB) 2000 Census Data Profile, the subject site is located within census tract 605. The total population of census tract 605 in 2000 was 6,073 with approximately 46% male and 54% female. Median household income for census tract 605 was \$30,183 in 2000 with an unemployment rate of 3.1%. According to recent information from local news networks, the unemployment rate for the City of Richmond for February 2010 was about 8.6%. 12.5% of families lived below the poverty line in 2000. Leading occupations within census tract 605 were management, professional, and related occupations (approximately 41%), service occupations (approximately 16%), and sales and office occupation (approximately 26%).

Federal actions to address environmental justice in minority populations and low-income populations as stated in Executive Order 12898 (EO) with the principles set forth in the report on the National Performance Review, requires that each federal agency shall "make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands."

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impacts on human health or environmental effects.

Under the Proposed Action/Alternative, there will be no adverse impacts on human health or environmental effects resultant from construction and operation of Fire Station No. 17. The existing Fire Station No. 17 and the proposed Fire Station No. 17 are both located within census tract 605 and employment is not anticipated to change due to the relocation.

4.11 Noise

Existing Environment

Ambient noise levels at the proposed project location are primarily generated due to vehicular traffic. The standard unit for reporting sound pressure levels is decibels (dB). The A-weighted frequency scale (dBA) is an expression of adjusted pressure levels by frequency that accounts for human perception of loudness. The day-night average sound level (DNL) is an average measure of sound. The EPA has published information which describes noise "cause and effect" relationships for sensitive land use. These relationships are not standards because they do not account for the cost or feasibility of achieving these levels and are provided for comparative purposes only. Based on overall magnitude of the sound, an outdoor DNL of 55 dBA has been established for residences and hospitals.

Over the years, noise has been recognized as a serious pollutant in the US. Noise is defined as "unwanted or disturbing sound". In the context of protecting public health and welfare, noise implies adverse effects on people and the environment. In the past, the EPA was responsible for coordinating all federal noise controlling activities through the Office of Noise Control and Abatement (ONCA). However, in 1981 EPA concluded that noise issues were best handled at the state or local level. Primary responsibility for regulating noise was thus shifted to state and local governments. The Noise Control Act (NCA) of 1972 and the Quiet Communities Act (QCA) of 1978 were not rescinded by Congress and remain in effect today, although essentially unfunded.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no impact on current noise levels at the project location. Existing noise levels associated with vehicular traffic will continue indefinitely.

Under the Proposed Action/Alternative, short term impact resultant from construction and operation of Fire Station No. 17 will occur. Short-term noise level increases are anticipated during the construction phase of the fire station due to movement of equipment. Intermittent noise level increases are also anticipated during operation of trucks, equipment, and sirens during fire hazards. As a mitigation measure for reducing noise during the construction, (OSHA) Standards as outlined in 29 CFR Part 1910 will be adhered to during construction. Since the project location is situated predominantly within a residential setting, proposed construction will take place during normal business hours when it is anticipated that majority of residents will be at work or other places. Noise levels at the project location are expected to be maintained at or below the outdoor DNL of 55 dBA.

4.12 Traffic

Existing Environment

The proposed project location is located at the northwest quadrant of the intersection of Semmes Avenue and W. 22nd Street in Richmond Virginia. Motor vehicles are the primary source of transportation in the proposed project area. Local roadways including Semmes Avenue, W. 22nd Street, Riverside Drive, Springhill Avenue, Stonewall Avenue, and W. 24th Street are the primary access routes to the project area.

Semmes Avenue (SR 60) is a four-lane roadway separated by a raised median containing decorative trees and overhead power utility poles. W. 22nd Street is a two-lane street that intersects Semmes Avenue as a stop controlled T-junction. Posted speed limit on both roadways is 35 miles per hour (mph). Information within a Traffic Analysis Study in the January 2009 Needs Assessment Study Report indicates Semmes Avenue has an average annual daily traffic of 20,000 vehicles per day and peak hour traffic of 2,120 vehicles. Traffic data was not provided for W. 22nd Street but is estimated at 123 vehicles per peak hour.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact on traffic and transportation at the project location.

Under the Proposed Action/Alternative, short term and intermittent impacts to traffic and transportation is anticipated during construction and operation of the fire station. Traffic generated from proposed Fire Station No. 17 will have minimal effect on the local traffic in terms of level of service and capacity. During the construction phase, sections of roadways in the project vicinity will be temporarily closed to allow for passage of construction trucks and equipment. Potential roads for temporary closures during construction will be sections of Semmes Avenue and W. 22nd Street. As a mitigation measure against delays due to road closures, flaggers will be employed during construction to direct and coordinate traffic routes and potential detours. According to City of Richmond representatives, sections of Canoe Run Park not affected by the proposed construction will be open to the general public as usual with safety barricades erected at about 100 feet from the construction area to ensure public safety. Construction trucks and equipment will be stored at the project site clear of roadways to facilitate smooth movement of pedestrians and vehicles. The sidewalk along Semmes Avenue will be closed to pedestrians.

During operation of Fire Station No. 17, warning flashing lights will be installed on Semmes Avenue to alert motorists of ingress/egress of fire trucks and equipment. Additionally, a traffic analysis study has been done to identify traffic deficiencies that may be caused by the project. Various recommendations have been identified that address traffic and transportation issues.

4.13 Public Service and Utilities

Existing Environment

The City of Richmond Department of Public Utilities (DPU) operates five utilities in the general vicinity of the proposed project location. Utilities within the project area include water purification and distribution, wastewater collection and treatment, natural gas service, and electric street lighting to residential, commercial and industrial users. During our site reconnaissance on March 18, 2010 and April 8, 2010, no utilities were observed at the site. Hydrants of a fire suppression system were also observed along the project site boundary. All necessary utilities are available at the project location or within close proximity to the proposed location.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact on utilities at the project location. No public service utilities are anticipated to be interrupted.

Under the Proposed Action/Alternative, construction impacts will be minor and limited to tying into existing utility infrastructure. Miss Utility of Virginia and private utility locating companies will be employed during construction to mark available utilities at the site to limit the occurrence of damaging existing utilities at the site.

4.14 Public Health and Safety

Existing Environment

Health and safety issues of area residents, general public, employees, and workers during construction must be considered in the preparation of this EA since the proposed project is located in a residential setting. Various health facilities including the Virginia Commonwealth University (VCU) Medical Center are a few miles from the project area. Also safety and security facilities including fire stations, emergency services, and law enforcement stations are in close proximity to the site area. During construction, a construction health and safety plan will be prepared to address issues relating to emergency planning and procedures.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no adverse impact on the health and safety of area residents, general public, workers, and employees.

Under the Proposed Action/Alternative, workers and employees will be subject to short term health and safety risks due to movement of heavy-duty construction trucks and equipment. There is also the potential risk of respiratory issues due to dust generated during earth moving activities. To minimize health and safety risks during construction, only trained and qualified personnel will be assigned to operate construction trucks and equipment. OSHA Standards as outlined in 29 CFR Part 1910 will be adhered to during construction to ensure public health and safety. Appropriate barricades and caution signs will be posted to alert pedestrians and motorists of project activities. A health and safety plan will

be developed for the site listing the nearest hospitals, police stations, fire department and emergency services.

4.15 Cumulative Impacts

Cumulative impacts result when the environmental effects of an action are added to or interact with other effects in a particular place and within a particular time. Cumulative impacts result in effects greater in magnitude, extent, and duration.

Existing Environment

Environmental effects at the subject site are presently non-existent.

Affected Environment

Under the No Action Alternative, no construction will occur and there will be no cumulative impacts at the proposed project area.

Under the Proposed Action/Alternative, no long-term cumulative impacts are expected since the construction of Fire Station No. 17 is for a short period. Relatively minor impacts to soils and topography will occur during excavation and site grading. Temporal minor impact to air quality may occur. Construction and earth-moving activities will temporarily increase localized particulate and volatile organic compounds (VOCs). Temporal short-term noise level increases are anticipated during the construction phase of the fire station due to movement of equipment. Intermittent noise level increases are also anticipated during operation of fire trucks, equipment, and sirens during fire hazards. Lastly, temporal and intermittent impact to traffic and transportation is anticipated during construction and operation of the fire station. The combined effect of impacts resultant from the proposed action and non-existent environmental effects at the project area presently is minimal and short-term.

4.16 Affected Environment Summary

The table below summarizes the potential impacts of the No Action Alternative and Proposed Action/Alternative on affected environments, and mitigation measures to address those impacts.

Potential Impacts on Affected Environments and Mitigation Measures Summary Table

Affected Environment	No Action Alternative	Proposed Action Alternative	Mitigation Measure
Geology and Soil	No impact.	No impact to geology. Minor impact to soil.	Implementation of BMPs to include erection of silt fences to minimize erosion of exposed soil.
Air Quality	No impact.	Minor impact to air quality. Impact is short-term and limited to the construction phase of the project.	Adherence to worker safety OSHA Standards. Implementation of BMPs to include wetting of soil surfaces and reducing operational times of equipment to reduce harm to health, environment, and property.
Climate	No impact.	No impact	None.
Water Quality	No impact.	No impact to surface water is anticipated. No impact to groundwater, and drinking water.	Implementation of BMPs to include erection of silt fences to minimize erosion of exposed soil into ponded surface water located on northern adjacent property
Wetlands	No impact.	No impact is anticipated to ponded surface water appearing to be wetland north of proposed construction.	Implementation of BMPs to include erection of silt fences to minimize erosion of exposed soil into ponded surface water located on northern adjacent property
Floodplains	No impact.	No impact.	None.
Coastal Resources	No impact.	No impact to coastal resources is anticipated.	All applicable permits and approvals listed under "Enforceable Programs of Virginia's Coastal Zone Management Program should be obtained prior to commencement of the proposed construction.
Biological Resources	No impact.	Minor impact to grass and trees are anticipated.	Incorporate grass, trees, and shrubs in decorative landscaping.
Cultural Resources	No impact.	No impact to architectural resources is anticipated. No archaeological sites are present at the project location.	Proposed fire station building will be constructed in general conformance with the architectural characteristics of the district. All subsequent future use plans of the existing station will be coordinated with DHR should any changes to existing plans arise.
Environmental Justice	No impact. There will be no disproportionately high and adverse effects on health and environment.	Socioeconomic benefits such as the potential availability of employment for minority and low-income populations are likely.	None.

Affected Environment	No Action Alternative	Proposed Action Alternative	Mitigation Measure
Noise	No impact. Existing noise levels associated with vehicular traffic will continue indefinitely.	Short-term noise level increases will be realized during construction. Intermittent noise level increases will also be realized during operation of the fire station.	Adherence to worker safety OSHA Standards. Implementation of BMPs to include construction taking place during normal business hours when most residents are not at home.
Traffic	No impact to existing traffic.	Minor short-term increases in construction traffic on roads in the immediate vicinity of the proposed project are anticipated.	Flaggers and the appropriate signs will be posted to direct and control traffic. Adhere to recommendations within Traffic Analysis Study to offset delays due to potential road closures.
Public Service and Utilities	No impact. No public service utilities will be interrupted.	Minor impact may be anticipated due to short-term interruption of public service utilities during tying into existing utilities.	Miss Utility of Virginia and private utility companies will be employed to mark existing subsurface utilities minimizing damage during construction activities.
Public Health and Safety	No impact to health and safety of area residents, general public, workers, and employees.	Short-term health and safety risk due to movement of heavy-duty construction equipment.	Adherence to worker safety OSHA Standards. Implementation of BMPs to include trained and qualified personnel operating construction trucks and equipment, and use of appropriate barricades and warning signs.
Cumulative Impacts	No cumulative impacts will occur. Environmental effects currently do not exist at the proposed project location	Short-term cumulative impacts are likely to occur during construction of the fire station.	Implementation of the above-referenced mitigation measures. Acquisition of all applicable federal, state, and local government permits as pertains to construction sites.

5 AGENCY COORDINATION, PUBLIC INVOLVEMENT, AND PERMITS

As part of the EA procedure, various federal and state agencies, regulatory agencies, municipal governments, and organizations were contacted by letter and email to request a project review of the proposed action/alternative. Oral interviews were also conducted with some of the federal and state agencies as part of the EA. Project review letters, emails, and responses received at the time of preparing this EA report are included in Appendix D.

Federal agencies contacted are listed below:

- United States Department of Agriculture – Natural Resources Conservation Service (USDA – NRCS)
- United States EPA, Region III Office of Permits and Air Toxics
- United States EPA, Region III Waste and Chemicals Management Division
- United States Fish and Wildlife Service (FWS)
- United States Geological Service (USGS)

State agencies contacted are listed below:

- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Historic Resources
- Virginia Department of Health Office of Drinking Water
- Natural Resources Conservation Service – Virginia State Office

After completion of the Draft EA, a 15-day public notice on the availability of the document will be published in the Richmond Times Dispatch, a local newspaper in the Richmond metropolis. A copy of the Draft EA will be available for public review at the existing Fire Station No. 17 located at 2901 Bainbridge Street in Richmond Virginia between 8:00 am and 5:00 pm daily. The Draft EA will also be posted on the FEMA website (www.fema.gov) for review and comments. Written comments can be faxed to Schnabel Engineering at (804)-783-8023 or emailed to sasante@schabel-eng.com, or kate.mcmanus@dhs.gov. Verbal comments can be accepted at (804)-649-7035 or (215)-931-5510. In the event no substantive comments are received, a (FONSI) will be issued for the project. Substantive comments will be reviewed accordingly and addressed in the Final EA.

Based on consultations with the applicant (City of Richmond), necessary federal, state, and local permits will be obtained prior to commencing construction of the proposed fire station.

6 REFERENCES

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FIGURES

APPENDIX A

EDR RADIUS MAP REPORT

APPENDIX B

EDR NEPA CHECKLIST

APPENDIX C

SITE PHOTOGRAPHS

APPENDIX D

AGENCY CORRESPONDENCE

APPENDIX E

PUBLIC NOTICE DOCUMENTATION