

**STOKES
ENVIRONMENTAL
ASSOCIATES, LTD.**

**ENVIRONMENTAL ASSESSMENT
(As per Federal Communications Commission Regulations
at 47 CFR 1.1301-1.1319)**

**WVBE(AM) ANTENNA ARRAY MODIFICATION
1002 NEWMAN DRIVE
SALEM, VIRGINIA**

PREPARED FOR:

**JOSH ARRITT
MEL WHEELER, INC.
3934 ELECTRIC ROAD SW
ROANOKE, VIRGINIA 24018**

PREPARED BY:

**STOKES ENVIRONMENTAL ASSOCIATES, LTD.
PROJECT NUMBER SEA 09-3690
31 MARCH 2010**

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31 March 2010
Date


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31 March 2010
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INTRODUCTION

Stokes Environmental Associates, Ltd. was requested by Mr. Josh Arritt of Mel Wheeler Inc. to prepare an Environmental Assessment, in accordance with the requirements of the National Environmental Policy Act (NEPA) as codified in the Federal Communications Commission (FCC) rules at 47 CFR 1.1301 through 1.1319, for a proposed modification to the WVBE(AM) antenna array located at 1002 Newman Drive in Salem, Virginia. This Environmental Assessment is intended to provide the environmental analysis required to support a finding of no significant impact as necessary prior to final approval of the project.

Objectives

NEPA is the basic national charter for protection of the environment. Section 102(2) of NEPA requires federal agencies to act in accordance with the letter and spirit of the Act. Regulations promulgated by the Council on Environmental Quality at 40 CFR 1500 implement Section 102(2) of NEPA, outline methods for evaluating compliance with the Act, and define requirements for conducting Environmental Assessments and Environmental Impact Statements. These regulations also outline methods of evaluating environmental documents and determining whether the proposed action has a significant effect on the human environment. The human environment is defined broadly as the natural and physical environment and the relationship of people with that environment.

Regulations of the Federal Communications Commission (FCC) at 47 CFR 1.1301 through 1.1319 implement the applicable requirements of NEPA, as outlined at 40 CFR 1500 through 1508.28, with respect to FCC activities. Stokes Environmental Associates, Ltd. prepared a NEPA Environmental Investigation, in accordance with FCC NEPA regulation 47 CFR 1.1307. The investigation of the eight items listed at 47 CFR 1.1307(a)(1) through (8) found that the proposed action will trigger 1.1307(a)(6) "*Is the facility in the a floodplain?*". Our review of the FEMA flood insurance map for Roanoke County, Virginia, Community Panel Number 51161C0141G, indicated that the proposed new tower and part of the grounding system on western and southern portion of the subject site are located within Zone AE and is within the 100-year floodplain to Gish Branch. Therefore, an Environmental Assessment is required for the proposed action that may have an effect on the quality of the human environment. This Environmental Assessment was prepared in accordance with 47 CFR 1.1307 *et seq.*, with the intent of providing the environmental analysis required to support FCC approval of the project.

Purpose and Need

The objective of the project is to modify the existing antenna array to allow for a station power increase for WVBE(AM)'s signal on 610kHz. It will also facilitate the co-location and subsequent power increase for WFIR(AM) at 960 kHz.

Period of Investigation and Key Investigators

Investigation of the subject site was performed during the period of 30 November through 12 March 2010 as Stokes Environmental Associates, Ltd. Project Number SEA 09-3690. Environmental Professionals performing this investigation included the following:

Mr. Thomas L. Stokes, Jr. provided technical review and research for this investigation.

Ms. Lisa Billow was project manager, performed research, investigative review and a site visit during this investigation.

SITE AND FACILITY DESCRIPTION

Facility Description

The WVBE (AM) antenna array is located at 1002 Newman Drive in Salem, Virginia. The array was constructed in 1947 when the station was licensed under the call letters WSLs. The site is labeled as such on the USGS Salem, Virginia topographic map. The approximately 40-acre site contains five towers used as an AM Directional Array with a sequential numeric nomenclature. Towers 1 through 4 are self-supporting at approximately 380-feet, "in-line" along a NW/SE path bisecting the property. Tower 5 is a guyed tower at approximately 350-feet, located northeast of the "in-line" towers.

The antenna array includes a ground system for AM antennas consisting of a series of 120 "radial" wires, #10AWG solid copper wires, buried 12 to 16 inches in the ground. The wires are laid out evenly every three degrees stretched out away from the towers for approximately the length of the towers. Where the radials intersect radials from other towers, they are truncated and bonded together using a perpendicular run of copper strap, 3 to 6 inches wide. Screens of copper mesh are buried around the base of the towers at a radius of 20 feet.

The site contains a 2500 SF structure that was used for a studio and office. It is currently vacant. A paved gated driveway provides access to the site. At the base of each tower are small structures housing tuning network components. The site is unmanned, and visited periodically for maintenance purposes.

The adjacent land use is single-family residential neighborhoods developed in the 1950s to 1960s.

See enclosed site maps in Attachments 1.

Site Description

The parcel is approximately 40 acres. Characterization of the subject site is gently sloping topography with elevations ranging from approximately 1054 AMSL in the floodplain to 1129 AMSL in the northern corner of the site. The property contains two intermittent streams with their confluence located at the southeastern corner of the site. The Gish Branch bisects the west side of the property. An unnamed intermittent tributary to the Gish Branch drains the eastern border of the property. Springs discharge into the western bank of Gish Branch. The confluence of Gish Branch, the tributary and a spring is located in the southern portion of the site. City sewer lines are buried in the channels and along the western border of the site. The north, west and south borders of the property are forested with mature deciduous trees. Site surface drainage is to the west toward Gish Branch.

The site is predominantly maintained in the production of hay. Trees line the stream banks. The west, north and east perimeters of the site are forested. Dominant tree species included sycamore, Osage orange, hawthorne, walnut, red maple, tulip poplar, red oak, white oak, and box elder.

Zoning Classification

Although the site is an existing antenna facility, the City of Salem zoned the parcel as Residential Single Family (RFS). The City of Salem expects to complete the rezoning of the site to Industrial/Light Manufacturing (ILM) by June 2010.

Local Controversy

A public notice of the proposed project was advertised in The Roanoke Times for seven days from 9 -15 December 2009. Please see copy of notice in Appendix 6. No comments or questions were received in response to the notice. The tower array has been present in the community since 1947. The residential community was developed adjacent to the existing station site in the 1950s and 1960s. The tower array is regarded as a community service facility. There is no local controversy regarding the facility or its modification.

ANALYSIS OF ALTERNATIVES AND SITE SELECTION

Alternatives reviewed as part of this study included the following:

1) No-Action, (2) Proposed Action, (3) Alternative Actions, and (4) Alternative Sites. The following discussion describes each alternative and the reasons why the alternative was or was not selected.

No-Action Alternative

The no-action alternative would be to not modify the tower array. Both WVBE(AM) and WFIR(AM), proposed for co-location of the modified array, are station participants in the Emergency Alert System. The proposed project will allow the co-location and power increase to further serve that participation. Also, both stations are presently operating with aging antenna components in need of updating. The present location of WFIR, which is surrounded by a shopping mall of Colonial Avenue in Roanoke City, does not allow component updating without significant cost and disturbance to the mall's operation. The co-location to the 40 acre site in Salem will eliminate any actual or believed RF radiation hazard presented by WFIR to the mall and its occupants, and also eliminates RF interference problems that have plagued those businesses for many years. Without this modification as specified, the stations could not be co-located, nor could the power and coverage increase be realized. Without the construction of these towers, Mel Wheeler Inc. would likely be required to reduce power and coverage for one or both stations below present levels to realize the co-location.

Proposed Action

Mel Wheeler Inc. has applied with the Federal Communications Commission to modify the existing antenna array at the WVBE(AM) facility on Newman Road in Salem, Virginia. The proposed modification is the replacement of Tower 5 and construction of an additional tower, Tower 6. Tower 5 will be removed and replaced by a 350-foot guyed tower approximately 100 feet to the southwest of the current Tower 5 location. Tower 6 will be a 350-foot guyed tower constructed approximately 350 feet southwest of Tower 3. Tower 6 will be located within the 100-year floodplain in the vicinity of the floodway. The guy anchors will be outside the floodplain. The guyed tower is of a lattice construction with smaller cross-section than the existing line of four self-supporting towers in the array. The ground system of copper radial wires will be replaced.

Tower placement of an AM directional arrays is dictated by the distance relationship between each tower. Since this is an existing array, the most efficient and cost effective solution to achieve a power increase while allowing required signal interference protections to nearby stations is described by the design filed with the FCC (File No. BP-20090826ABS). This design not only allows for WVBE(AM)'s power increase, but also allows for the co-location of co-owned WFIR(AM) on 960kHz, as described in a separate application to the FCC (File No. 20040112ABG), which was granted in 2007.

The placement of Tower 6 was made based on electrical requirements. In AM directional antenna arrays, multiple towers are used with very specific spacing. The spacing is calculated according to the operating frequency of the station's signal and the requirements for signal strength enhancements in certain directions. Also, signal reduction in the direction of stations of similar frequency is required, as is certainly in the case on WVBE, to mitigate interference with those distant stations.

An analogy can be made using rocks thrown into a pond. The waves created by each rock add and cancel each other. The distance and direction between where the rocks enter the water become critical when trying to control the wave interaction, whether cancellation or addition. The size of the rocks and the time delay between each rock penetrating the water is analogous to the AM directional antenna array interaction. The physical location of the towers is very critical. Calculations were made by an engineer to determine the proposed location of Tower 6 given the configuration of the existing tower array, and the directional signal pattern requirements.

As described below, the engineering analysis included a search for feasible tower locations outside the floodplain, but the locations outside the floodplain were not acceptable based on interference and signal pattern requirements.

Equipment at the new towers will be housed in elevated weather-proof aluminum cabinets. The maximum size available for such cabinets, model Kintronic LTU-3P, is 35-inches high, 40-inches wide and 27-inches deep. The cabinets will be mounted on four metal posts, 4-inches in diameter. At Tower 6, three such cabinets will be installed within 36 inches of the base of the tower. Tower 6 will be located within the 100-year floodplain in the vicinity of the floodway; therefore, the cabinet base will be placed above the base flood elevation of 1076 above mean sea level (AMSL). The cabinet base will be at 6 feet above ground level, at elevation 1077 AMSL. The finished top of the tower pier shall also be constructed at 1077 AMSL. The guy anchors will be outside the floodplain.

Alternative Actions

Alternative Actions are new solutions or approaches which serve the same function or purpose of the proposed action. Practicable alternative actions, such as an alternate technology, could not be found for this highly specific technology. No alternative technology is readily available at this time.

Alternative Sites

The wavelength at which AM broadcast stations operate is large, and as such requires massive real estate to properly space towers to affect a suitable directional signal pattern. At 40 acres, the Salem site is just large enough to accommodate the 610kHz signal for WVBE(AM). Larger tracts are located outside the metropolitan area, which present additional complications for site maintenance, control and telemetry, program audio delivery, and other considerations. Also, as Emergency Alert System participants, value is placed on these stations' proximity to large

population centers. Alternative locations for Tower 6 (including outside of the floodplain) and its ground system were evaluated, and each either fall outside the property boundaries of the existing site or present problems for the 610kHz signal.

**FINDINGS OF THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL INVESTIGATION (47 CFR 1.1307 (a)(1)-(8))**

The location of the proposed tower site and access road is shown in Attachment 1.

(1) Is the facility located in an officially designated WILDERNESS AREA? No.

The Wilderness Act of 1964 designates the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior (USDI) as the agencies with jurisdiction and responsibility for managing wilderness areas. Four federal offices manage designated Wilderness Areas: The USDA, Forestry Service (USFS); and the USDI, Bureau of Land Management (BLM), Fish and Wildlife Service (FWS) and National Park Service (NPS). Officially designated Wilderness Areas within the Commonwealth of Virginia are shown on maps and listed in databases prepared by the USFS and the NPS. Our review of these maps and databases provides an appropriate and customary basis for determination of whether a site is located near or within a designated Wilderness Area, according to practices recommended by the USFS and NPS.

Our review of the BLM and FWS information did not reveal any designated Wilderness Areas within the Commonwealth of Virginia. However, Wilderness Areas, National Forests and National Parks, are located in the Commonwealth of Virginia according to databases maintained by the USFS and NPS. According to the National Wilderness Preservation System (NWPS) online database, there are 18 designated wilderness areas within the Commonwealth of Virginia. Of the 18 areas, 17 are listed by the USFS and one is under the NPS. No designated Wilderness Areas under the jurisdiction of the BLM and FWS were found in the NWPS online database. Review of the listing of these areas, obtained through the NWPS database, indicated the subject site is not located within a Wilderness Area, or National Park.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the USFS and NPS on 4 December 2009 and obtained current information from applicable databases. The subject site is not located within a designated wilderness area and no designated wilderness areas were listed within the vicinity of the subject site.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the NPS *National Registry of Natural Landmark* database and obtained current information from applicable databases. The subject site is not located within a designated natural area and no designated natural areas were listed within the vicinity of the subject site.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the NPS *Wild and Scenic Rivers* database on 2 February 2007 and obtained current information. The Commonwealth of Virginia has no rivers on the National Wild & Scenic Rivers System.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the U.S. Environmental Protection Agency (EPA) *American Heritage Designated Rivers* database on 4 December 2009 and obtained current information. The subject site is not located within a designated river area and no designated rivers were listed within the vicinity of the subject site.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the U.S. Department of Transportation (DOT) *National Scenic Byways* database on 4 December 2009 and obtained current information. The subject site is not located within a designated byway area. The Blue Ridge Parkway is located south of Salem and Roanoke and is approximately nine miles from the subject site.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the Virginia Department of Conservation and Recreation (DCR) *Virginia State Parks* database on 8 December 2009 and obtained current information. The subject site is not located within a designated state park and no designated state parks listed within the vicinity of the subject site.

Based on this review of appropriate databases, maps and land deeds, it appears that the proposed facility is not located in an officially designated Wilderness Area. Maps and database searches are in Attachment 2.

(2) *Is the facility located in an officially designated WILDLIFE PRESERVE? No.*

Wildlife Preserves are designated under several authorities and regulations which are addressed in the following analysis.

The Virginia Natural Area Preserve Act, as defined at Code of Virginia 10.1-209 through 217, provides for the establishment of Natural Area Preserves within the Commonwealth of Virginia. The Natural Area Preserve System (NAPS) is under the jurisdiction of the Virginia Department of Conservation and Recreation (DCR). The Virginia DCR map of the Natural Area Preserve System (NAPS) and Areas Proposed for Natural Area Dedication locates 38 Natural Area Preserves throughout the Commonwealth of Virginia. This information was obtained via the NAPS on-line database.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the DCR NAPS on 8 December 2009 and obtained current information from the NAPS database. The subject site was not found to occur within any of the designated NAPs. Poor Mountain is a NAP located in Roanoke County approximately 14 miles southwest of the subject site.

It is noted that Natural Area Preserves must be owned, leased, or otherwise acquired by DCR in order to be included in the NAPS. Conservation easements or other deed restrictions may also be used in order to include a property within the NAPS. It is understood that legal review of the title data for this property has been completed or is to be completed prior to construction, and it is considered to be reasonable to assume the project will be completed under the condition that no evidence is found to indicate deed restriction on the subject property with respect to the NAPS.

Also, as outlined under the Virginia Natural Area Preserve Act, the DCR maintains a state registry of voluntarily protected natural areas, known as the Virginia Registry of Natural Areas for Natural Area Preserves (NAP). The registry agreements may be terminated by either the state or the owner, at any time, resulting in removal of the area from the registry. It is assumed

for the purpose of this investigation that any such voluntary protection will be rescinded prior to transfer of use of the property for the proposed action.

The Scenic Rivers Act of 1968, as outlined in the Code of Virginia at Section 10.1-400 through 410 does not restrict riparian uses of designated Scenic Rivers, except such uses which impede the natural flow of the river. The proposed action will not impede the flow of any such river; therefore, no further investigation of preserves established by the Act is recommended at this time.

The Virginia Recreational Facilities Authority Act, as outlined in the Code of Virginia at Section 10.1-1600 through 1622, provides for the acquisition of property for public use, and conceivably could be used in order to establish a wildlife preserve. It is presumed that no evidence has been found to indicate conservation easements or other deed restrictions on the subject property with respect to the Act.

The Virginia Open Space Land Act, as outlined in the Code of Virginia at Section 10.1-1700 through 1705, provides for the acquisition of property within urban areas for open space purposes, and conceivably could be used in order to establish an urban wildlife preserve. It is presumed that no evidence has been found to indicate conservation easements or other deed restrictions on the subject property with respect to the Act.

The Virginia Outdoors Foundation was established to promote preservation of open space lands, via transfer of property, conservation easements, or other deed restrictions, as outlined in the Code of Virginia at Section 10.1-1800 through 1804. Such open space lands in some cases may be officially designated as wildlife preserves. It is presumed that no evidence has been found to indicate conservation easements or other deed restrictions on the subject property with respect to the Foundation.

National Wildlife Refuges (NWR) located in the Commonwealth of Virginia are listed in a database maintained by the U.S. Department of the Interior (USDI), Fish and Wildlife Service (FWS). According the FWS, there are 14 National Wildlife Refuges within the Commonwealth of Virginia.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the FWS National Wildlife Refuge System (NWRS) database on 8 December 2009 and obtained current information from the database. The subject site was not found to occur within any of the designated NWRs.

Based on review of appropriate databases, maps, land deeds, and research of both DCR and FWS data, it appears that the proposed facility is not located in an officially designated Wildlife Preserve. Maps and database searches are in Attachment 2.

(3) Will (May) the facility (i) affect listed **THREATENED** or **ENDANGERED SPECIES** or **DESIGNATED CRITICAL HABITATS**? or (ii) be likely to jeopardize the continued existence of any proposed **THREATENED** or **ENDANGERED SPECIES** or [be] likely to result in the destruction or adverse modification of proposed **CRITICAL HABITATS** as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973? **No.**

The Endangered Species Act of 1973 designates the U.S. Department of the Interior (USDI), Fish and Wildlife Service (FWS), as the lead agency with responsibility for protection of threatened and endangered species. The FWS regulations protect endangered and threatened fish, wildlife, plants, and critical habitats. This includes lists of protected species and habitats as specified at 50 CFR 17 222.23(a), 226, and 227.4.

In order to confirm the U.S. Fish and Wildlife Service (FWS) position on endangered or threatened species and designated critical habitats, the FWS Virginia Field Office, Ecological Services, was consulted. According to Mr. Eric Davis, Project Review Coordinator, 14 May 2002, the FWS recommends a search of databases maintained by both the Virginia Department of Conservation and Recreation (DCR) and the Virginia Department of Game and Inland Fisheries (DGIF). If either federally listed threatened or endangered species are found for the search area in either database, then the FWS must be contacted. If no federally listed threatened or endangered species are found for the search area in either database then contacting the FWS is not required.

The FWS relies on the Virginia Department of Conservation and Recreation (DCR), Division of Natural Heritage (DNH), to identify threatened or endangered species and designated critical habitats within the Commonwealth of Virginia.

Pursuant to a Memorandum of Agreement between the Virginia Department of Agriculture and Consumer Services, Division of Consumer Protection, and the Virginia Department of Conservation and Recreation, Division of Natural Heritage, dated 11 December 2000, the DCR is the point of contact for the Virginia Department of Agriculture and Consumer Services (DACS), with regard to threatened and endangered plants and insects.

The DCR maintains the Biological and Conservation Data System (BCDS). The BCDS geographically identifies occurrences of natural heritage resources, defined as . . . "the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations." This database details all documented occurrences of natural heritage resources from a specified project area, and includes scientific and common names, Natural Heritage Program rarity ranks, federal and state protected status information, and recommendations for resource protection. Recommendations are based on known occurrences and may also identify potential species occurrences within a specified project area. Stokes Environmental Associates, Ltd. accessed information directly by online services from the DCR Natural Heritage Resources System (NHRS) database on 8 December 2009 and obtained current information from the database for Roanoke County, Roanoke City and Salem.

The Virginia Department of Game and Inland Fisheries (DGIF) maintains a separate but similar database of threatened and endangered species, the Fish and Wildlife Information System

(FWIS), that may include information not found in the BCDS. The FWS has specifically directed applicants for federal licenses and permits to review FWIS information in addition to the BCDS information. Stokes Environmental Associates, Ltd. accessed information directly by online services from the DGIF FWIS on 8 January 2010 and obtained current information from the database for the project area. Based on the search results, three federally listed species are located within three miles of the subject site:

Federal Status	Species
Federal Endangered	Roanoke Logperch (<i>Percina rex</i>)
Federal Endangered	Indiana Bat (<i>Myotis sodalis</i>)
Federal Endangered	Smooth Coneflower (<i>Echinacea laevigata</i>)

Roanoke Logperch (*Percina rex*) is Federally Listed Endangered in Roanoke County, the City of Roanoke and the City of Salem. Roanoke Logperch is restricted to and disjunctly distributed in the Piedmont and Ridge and Valley provinces of the Roanoke drainage. This species has a reported distribution in the upper Roanoke River system. The adults dwell on gravel and rubble in runs and riffles, occasionally pools. The young and juveniles occupy slow runs and pools, most frequently sand. Limiting factors include turbidity and siltation, chemical spills and organic pollution, channelization, impoundment, cold water and small stream size. Gish Branch is an intermittent stream on the subject site and does not have suitable habitat for this species. Gish Branch drains into Mason Creek and ultimately into a reach of the Roanoke River that is listed as a threatened and endangered species water. Erosion and sediment control practices during construction and site management are important in headwater streams to protect water quality in the watershed.

The Indiana Bat (*Myotis sodalis*) is reported likely to occur within three miles of the subject site. The Indiana Bat is known or likely to dwell in caves of adjacent Craig and Montgomery counties. No known populations reside in Salem, Roanoke or Roanoke County.

Smooth Coneflower (*Echinacea laevigata*) is Federally Listed Endangered for Roanoke County. This is the only native purple coneflower in Virginia. Many non-native species are planted ornamentally and are introduced as components of wildflower mixes. *Echinacea laevigata* requires relatively open areas, usually on basic soils and is threatened by the loss of naturally open habitat through the suppression of natural disturbances. The subject site is managed as a hay field and does not contain suitable habitat for this species.

In southwestern Virginia, there are three fish and four mussel species that have federally designated Critical Habitat. No designated Critical Habitat is located in the City of Salem, City of Roanoke or Roanoke County.

Our review of the DCR and DGIF databases for Salem, Roanoke or Roanoke County found three federally listed endangered or threatened species. However, based on a preliminary survey of the subject site and its immediate vicinity, it appears that no listed species will be impacted by the proposed project. Copies of database searches are in Attachment 2. Pictures of the site are in Attachment 1.

The DCR was queried via letter, 28 December 2009, pertaining to threatened or endangered species, designated critical habitats, wilderness areas, and wildlife preserves within the vicinity of the proposed project area (Attachment 3). A response was received on 1 February 2010. DCR stated that no State Natural Area Preserves or state-listed plants or insects would be affected by the proposed project.

According to the DCR files, the Roanoke River – North and South Forks Stream Conservation Unit (SCU) is downstream of the subject site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. The Roanoke River – North and South Forks SCU has a biodiversity significance ranking of B2, which represents a site of very high significance.

The natural heritage resources of concern associated with this SCU are: Orangethin madtom (*Noturus gilberti*) and Roanoke logperch (*Percina rex*). The Orangethin madtom is classified as a species of concern. It is native to the upper Roanoke drainage in Virginia and North Carolina. The Roanoke logperch, classified as Federally Listed Endangered, is discussed above.

To minimize adverse impacts to the aquatic ecosystem as a result of construction activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control and stormwater management laws and regulations. Construction activities including clearing, grading and excavating that result in land disturbance of an area equal to or greater than 10,000 square feet are regulated under Virginia's Erosion and Sediment Control Program. DCR also recommends coordination with the USFWS and VDGIF to ensure compliance with protected species legislation.

The DCR had the Virginia Karst Program and the Virginia Speleological Survey review this project for documented sensitive karst features and caves. This project is situated on karst-forming carbonate rock. If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered, coordination with the DCR is requested to document and minimize adverse impacts. Discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to surface collapse, flooding, erosion and sedimentation, groundwater contamination, and degradation of subterranean habitat for natural heritage resources. DCR requests detailed location information and copies of design specifications that involve filling or improvement of sinkholes and cave openings. In cases where sinkhole improvement is for stormwater discharge, copies of VDOT Form EQ-120 will suffice.

Furthermore, DCR recommends voluntary implementation of USFWS interim guidelines for Recommendations on Communication Tower Siting, Construction, Operation, and Decommissioning. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Tower designs using guy wires for support which are

located in known raptor areas or daily movement routes, or in major diurnal migratory bird movement routes, should have daytime visual markers on the wires to prevent collisions by diurnally moving species. A reference for guidance on guy wire markers is provided in the copy of the USFWS is in Attachment 3.

The DGIF was queried via letter, dated 29 December 2009, pertaining to threatened or endangered species, and designated critical habitats, wilderness areas, and wildlife preserves within the vicinity of the proposed project area (Attachment 3). A response was not received as of the completion of this report.

Based on the results of this preliminary investigation, there appear to be no federally listed endangered or threatened species or proposed federally listed species or critical habitats at the subject site or near the subject site.

(4) Will (May) the facility affect districts, sites, buildings, structures or objects, significant in AMERICAN HISTORY, architecture, archeology, engineering or culture, that are listed, or are eligible for listing in the National Register of Historic Places? No.

The National Historic Preservation Act of 1966 authorizes the Secretary of the Interior to manage a National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. This National Register of Historic Places (NRHP) is in the custody of the State Historic Preservation Office (SHPO), as approved by the U.S. Department of the Interior (USDI), National Park Service (NPS). Protection of Historic and Cultural Properties by the Advisory Council on Historic Preservation is outlined in 36 CFR 800 including procedures for implementation of the NEPA.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the NPS National Register Information System (NRIS) on 8 January 2010 and obtained current information from the database for the City of Salem. Based on the search results, four historic resources were listed. These sites were greater than one mile from the subject site.

Stokes Environmental Associates, Ltd. accessed information directly by online services from the National Register of Historic Places (NRHP) on 8 January 2010 and obtained current information from the database for the City of Salem. Based on the search results, 11 historic resources were listed.

The Virginia Department of Historic Resources (DHR) maintains listings and related maps showing known historic sites and sites which are listed or eligible for listing in the NRHP. A 0.75-mile area of potential effect (APE) was reviewed on these maps. This analysis was limited to preliminary evaluation of data readily available to us at the time of our review. The 0.75-mile APE is within the City of Salem. The (DHR) archive search for historic properties in the APE resulted in the identification of 35 historical site records. The table on the following page summarizes the properties identified, provides location, and National Register eligibility status.

The archives search identified two sites recommended eligible for the National Register.

DHR ID#44RN0186 Valley Railroad Bridge over Gish Branch
Alternate ID: DHR ID#129-5023 Gish Branch Bridge

The Valley Railroad Bridge over Gish Branch is located on the subject site. The bridge is a single span arched bridge site of dressed limestone masonry constructed in 1874 by the Valley Railroad Company. The partially finished railroad bed over the Gish Branch was intended to be part of the 113 mile Valley Railroad chartered by the General Assembly in 1866. It was intended to help link the Baltimore and Ohio RR at Harrisonburg with the Virginia & Tennessee RR at Salem, but the project was never completed due to financial difficulties. The site was recommended eligible for the National Register of Historic Places on 18 June 2009.

DHR ID# Williams-Brown House-Store

The Williams-Brown House, constructed in 1837, was moved to its present location at 523 East Main Street, houses the Salem Museum and Historical Society.

Copies of the data base searches and DHR file records are in Attachment 4.

Historic Resources Within 0.75 Miles of WVBE(AM) Antenna Array Modification				
DHR #	National Register Eligibility Status	Address	Description	Age
129-0010	Recommended	523 E. Main Street	Williams Brown House-Store	1837
129-0058	Not Evaluated	335 High Street	oldest residential St	1855
129-0059	Not Evaluated	429 High Street	Miller House	1921
129-0064	Not Evaluated	703 Kessler Mill Road	Rae House	1930
129-0071	Not Evaluated	1519 Garst Street	Blount House	1900
129-0072	Not Evaluated	730 Kessler Mill Road	Miller House	1920
129-0074	Not Evaluated	511 Craig Avenue	Hundley House	1840
129-0077	Not Evaluated	East Main Street	East Hill Cemetery	1869
129-0078	Not Evaluated	709 Monroe Hill	house	1920
129-0102	Not Evaluated	901 Lynchburg Turnpike	house	1920
129-0103	Not Evaluated	917 Lynchburg Turnpike	house	1900
129-0104	Not Evaluated	929 Lynchburg Turnpike	house	1920
129-0105	Not Evaluated	963 Lynchburg Turnpike	house	1920
129-0106	Not Evaluated	651 Monroe Street	house	1870
129-0107	Not Evaluated	202 Braxton Street	house	1930
129-0108	Not Evaluated	212 Braxton Street	house	1910
129-0109	Not Evaluated	14 Wortham Avenue	house	1930
129-0110	Not Evaluated	17 Wortham Avenue	house	1930
129-0111	Not Evaluated	900 E. Main Street	house	1940
129-0112	Not Evaluated	900 E. Main Street	house	1930
129-0113	Not Evaluated	940 E. Main Street	motel	1940
129-0114	Not Evaluated	14 Bratton Lane	house was demolished	1900
129-0115	Not Evaluated	Evans Road	house was demolished	1910
129-0116	Not Evaluated	Evans Road	house	1870
129-0117	Not Evaluated	913 E. Main Street	house	1920
129-0118	Not Evaluated	917 E. Main Street	house	1900
129-0119	Not Evaluated	925 E. Main Street	house	1900
129-0120	Not Evaluated	1319 E. Main Street	house; currently a car dealership	1920
129-0121	Not Evaluated	1386-1388 E. Main Street	house; currently offices	1920

DHR #	National Register Eligibility Status	Address	Description	Age
129-0122	Not Evaluated	1408 E. Main Street	store	1870
129-0127	Not Evaluated	424 High Street	Old Painter House	1880
129-0128	Not Evaluated	429 Cleveland Avenue	Stonewall House	1855
129-5007			N&W Railroad Bridge	
129-5019	Not Eligible	VDOT Salem District Complex		
129-5023	Recommended	Gish Branch Bridge	bridge on WVBE (AM) site	1874
Historic District within 1 mile of site				
Salem	Recommended	Downtown Main Street		

The WVBE(AM) antenna array was constructed in 1947. It is situated in a valley surrounded by residential and commercial development established in 1950 to 1960 following the tower construction. Within the 0.75-mile APE, 35 identified historic resources were constructed from 1837 to 1930 within the City of Salem. Two of these sites have been recommended eligible for listing on the National Register of Historic Places. The age of the antenna array qualifies it for evaluation as a historic resource as well. The towers are 350 to 380 feet tall and have been visible from many of the historic sites since construction in 1947. A visual impact assessment was conducted of the historic resources identified. The replacement of Tower 5 and addition of Tower 6 will not have an adverse effect on historic properties listed or found eligible for listing in the National Register.

Archaeological survey of the site is not feasible due to the current operation of the radio facility. The antenna array includes a ground system for AM antennas consisting of a series of 120 "radial" wires, #10AWG solid copper wires, buried 6 to 14 inches in the ground. The wires are laid out evenly every three degrees stretched out away from the towers for approximately the length of the towers. A diagram of the extensive ground system is enclosed. Installation of this dense grid of buried cables required thorough soil excavation and trenching the grid system across the site such that the upper part of the soil profile has been mixed by removal, grading and redeposition. Ground disturbance by shovel testing at the site could damage the ground system and disrupt operation of the facility.

Archaeological resources present at the site would be significantly disturbed by the construction activities that have occurred approximately 50 to 60 years ago. The property has been subject to significant ground disturbance in the construction of the antenna array ground system. The floodplain of the Gish Branch has been disturbed during the channelization of the stream and a municipal sewer line is buried along side and beneath the streams.

On October 5, 2004, the Federal Communications Commission released a Report and Order, FCC 04-222, adopting the Nationwide Programmatic Agreement regarding the Section 106 National Historic Preservation Act Review Process (NPA), signed by the Advisory Council on Historic Preservation (ACHP) and the National Conference of State Historic Preservation

Officers (NCSHPO) and amending Section 1.1307(a)(4) of the Commission's rules, 47 C.F.R. §1.1307(a)(4). A New Tower Submission Packet Form 620 was prepared in compliance with the Nationwide Programmatic Agreement and submitted on 15 January 2010 for State Historic Preservation Office (SHPO) review and clearance. Based on this investigation of historic resources, it was determined that no historic resources will be adversely impacted by the proposed tower. The SHPO concurred that the proposed project will have No Adverse Effect on historic properties listed or eligible for the National Register of Historic Places. SHPO clearance letter dated 22 February 2010 is in Attachment 4.

(5) *Will (May) the facility affect INDIAN RELIGIOUS SITES? No.*

Section 106 of the National Historic Preservation Act of 1966, as amended ("NHPA") (codified at 16 U.S.C § 470f), requires federal agencies to take into account the effects of certain of their Undertakings on Historic Properties included in or eligible for inclusion in the National Register of Historic Places ("National Register"), and to afford the Advisory Council on Historic Preservation ("Council") a reasonable opportunity to comment with regard to such Undertakings.

Section 101(d)(6) of the NHPA provides that federal agencies "shall consult with any Indian tribe" that attaches religious and cultural significance to properties of traditional religious and cultural importance that may be determined to be eligible for inclusion in the National Registry and that might be affected by a federal undertaking. The "Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by The Federal Communication Commission," effective 7 March 2005 provides the appropriate method to meet the NHPA requirements.

The Tower Construction Notification System (TCNS), developed by the FCC, is used to facilitate consultation with Indian tribes that potentially attach religious or cultural significance to proposed project sites. The TCNS provides Indian tribes an opportunity to identify the geographic areas in which Historic Properties to which they attach religious and cultural significance may be located. Applicants may ascertain which participating Indian tribes have identified such an interest in the geographic area in which they propose to construct a facility. Applicants may provide electronic notification of proposed facilities construction for the Commission to forward to participating Indian Tribes, State Historic Preservation Offices and Tribal Historic Preservation Offices.

Our review of the National Register with the respect to the subject site has found no evidence of historic or archeological resources at the subject site. Review for effects on Indian religious sites entailed submittal of the project description into the TCNS on 9 October 2009. The Tower Notification IDs are 56905 and 56906 in Salem, Virginia. The following tribes identified Virginia as an area of historic interest and were notified through the TCNS of the proposed project:

Tuscarora Nation response stated that if the Tuscarora Nation does not respond to the Applicant within 30 days after notification through TCNS, the Tuscarora Nation has no interest in participating in pre-construction review of the site. TCNS notification to the

tribal historic preservation offices was 9 October 2009. In the event that archaeological properties are discovered during construction, the Tuscarora Nation must be notified immediately. A response was not received within 30 days of notification or prior to the completion of this submittal.

Cherokee Nation, Tahlequah, Oklahoma response requested that supplemental information be provided by email to Richard L. Allen at rallen@cherokee.org. A response to the supplemental information was received 16 November 2009. The Cherokee Nation has no knowledge of any historic, cultural or sacred sites within the affected area. Should any ground disturbance reveal an archaeological site or human remains, the Cherokee Nation requests that all activity cease and appropriate agencies be contacted immediately.

The Eastern Shawnee Tribe of Oklahoma A response was received on 16 October 2009 stating that the tribe has no objection to the proposed construction. However, if any human skeletal remains and/or any objects falling under Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered during construction, immediately stop construction and notify the state and tribal NAGPRA representatives.

Shawnee Tribe, Miami Oklahoma requested project information submitted per tribal procedures to Ms. Kim Jumper, Tribal Historic Preservation Officer, Shawnee Tribe, 29 south Highway 69A, Miami, Oklahoma 74354. A response was received 6 January 2010. The Shawnee Tribe concurs that no known historic properties will be impacted by the tower. If archaeological materials are found, the Shawnee would like to resume consultation.

Based on the above research, Indian religious or cultural sites were not found within the proposed site, and it appears that the proposed action will not affect any Indian religious or cultural sites. Copies of TCNS submittal and responses from Tribal Historic Preservation Offices are in Attachment 5.

(6) Is the facility located in a FLOODPLAIN? Yes, Tower 6.

Executive Order 11988 - Floodplain Management, dated 24 May 1977, requires federal agencies to determine whether any proposed federal action will occur in a floodplain, and stipulates procedures to be followed for any federal action to be located within a floodplain. The term "floodplain" is defined in the Executive Order to mean the lowland and relatively flat area adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent (1%) or greater chance of flooding in any given year. The Federal Emergency Management Agency (FEMA) Flood Insurance Manual, dated 1985, indicates that the floodplain described in the Executive Order is, by definition, the 100-year floodplain. FEMA regulations for Floodplain Management and Flood Hazard Identification (44 CFR 59 through 77) provide further clarification and was relied on in this investigation.

Flood Insurance Rate Maps and Flood Hazard Boundary Maps, as prepared by FEMA, provide the usual and customary basis for determining whether a site occurs within a 100-year floodplain. Our review of FEMA, Roanoke County, Virginia, Community Panel Number 51161C0141G, indicated that the western and southern portion of the subject site is located within Zone AE and is within the 100-year floodplain to Gish Branch. The floodway area in Zone AE is the channel of the stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1 percent annual chance flood can be carried without substantial increase in flood heights. Zone X, the flood area adjacent to Zone AE, is an area of 0.2 percent annual chance flood with average depths of less than 1 foot. (FEMA map is in Attachment 1).

Tower 6 will be constructed within Zone AE, the 100-year floodplain, in the vicinity of the floodway. The guy anchors will be outside the floodplain.

(7) Will (May) the construction of the facility involve SIGNIFICANT CHANGE IN SURFACE FEATURES; i.e., wetland fill, deforestation or water diversion? No.

Sensitive surface features, including wetlands, other surface water (i.e., streams, creeks, lakes, or rivers), forests, and other characteristics are of importance to the human environment due to the functions and values of such features. The subject property was visually and physically evaluated for the presence of sensitive surface features in order to determine whether the project would present any potential for significant change in such features.

According to the Natural Resources Conservation Service (NRCS), *Virginia Hydrologic Unit Atlas* (1995), the site is within Hydrologic Unit 03010101, the Roanoke River/Mason Creek. It is within the Roanoke River Drainage Basin. The Roanoke River is listed a threatened and endangered species water.

Stokes Environmental Associates, Ltd. accessed information directly by on-line services from the FWS Wetlands Online Mapper and obtained current information from the database. U. S. Fish and Wildlife Service (FWS) wetland map shows Gish Branch. The U.S. Geological Survey (USGS) topographic map Salem, Virginia Quadrangle, shows Gish Branch and an unnamed tributary located of the subject site.

Characterization of the subject site is gently sloping topography ranging from 1054 to 1128 amsl. Site surface drainage is to the west toward Gish Branch. An unnamed intermittent tributary to Gish Branch drains the eastern border of the property. Springs discharge into the western bank of Gish Branch. The confluence of Gish Branch, the tributary and a spring is located in the southern portion of the site.

The site is predominantly maintained in the production of hay. Trees line the stream banks. The west, north and east perimeters of the site are forested. Dominant tree species included sycamore, Osage orange, hawthorne, walnut, red maple, tulip poplar, red oak, white oak, and box elder.

The subject site was evaluated for the presence of jurisdictional wetlands in accordance with the onsite determination methods specified in the U.S. Army Corps of Engineers (COE), *Wetlands Delineation Manual (Technical Report Y-87-1)* (1987), including interpretations specified by the U.S. Army Corps of Engineers (Memorandum from Major General Arthur E. Williams, Directorate of Civil Works, March 1992). A wetland delineation is in Attachment 6.

The streams and springs are Army Corp of Engineer (COE) jurisdictional Waters of the U.S. Based on the visual inspection, no other jurisdictional wetlands were found at the subject site. Modification of the antenna array does not involve a significant change in surface features or impact to waterways on the subject site. If the project requires impacts to streams or springs, permits are required from the COE and Virginia Department of Environmental Quality.

(8) *Is the facility an antenna tower and/or supporting structure that is equipped with HIGH INTENSITY WHITE LIGHTS which are to be located in RESIDENTIAL NEIGHBORHOODS, as defined by the applicable zoning law?* **No.**

Based on information provided, the existing 350- to 380-foot antennas are equipped with red lights in accordance with Federal Aviation Administration (FAA) requirements. Towers 1 and 4 are lit with red LED obstruction lighting kits including four marker lights at two levels, and a single flashing beacon on each tower. Tower 5 is lit with incandescent lamps employing the same obstruction marker/beacon scheme found on Towers 1 and 4. The new towers will be equipped to comply with FAA guidelines.

Based on the presence of red lights on the existing towers, it appears that the proposed action will have no significant new adverse affect on the human environment or physical environment with respect to lighting in residential neighborhoods.

ENVIRONMENTAL CONSEQUENCES FCC/NEPA COMPLIANCE CHECKLIST

Site Name: WVBE(AM) Antenna Array

Location (City/State): 1002 Newman Drive, Salem, Virginia

Checklist	YES	NO
1. Is the facility located in an officially designated WILDERNESS AREA? Our review included evaluation of all appropriate agency information including the Virginia Department of Conservation and Recreation, the U.S. Fish and Wildlife, and the Virginia Department of Game and Inland Fisheries and all appropriate federal maps and ownership data.	_____	X _____
2. Is the facility located in an officially designated WILDLIFE PRESERVE? Our review included evaluation of all appropriate agency information including the Virginia Department of Conservation and Recreation, the U.S. Fish and Wildlife, and the Virginia Department of Game and Inland Fisheries and all appropriate federal maps and ownership data.	_____	X _____
3. Will (May) the facility (i) affect listed THREATENED or ENDANGERED SPECIES or DESIGNATED CRITICAL HABITATS? or (ii) jeopardize the continued existence of any proposed ENDANGERED OR THREATENED SPECIES or be likely to result in the destruction or adverse modification of proposed CRITICAL HABITATS? Our review included consultation with all appropriate agencies including the Virginia Department of Conservation and Recreation and the U.S. Fish and Wildlife data as mapped by the State of Virginia, the Virginia Department of Game and Inland Fisheries, and other appropriate reviews.	_____	X _____
4. Will (May) the facility affect districts, sites, buildings, structures or objects significant in AMERICAN HISTORY, architecture, archeology, engineering or culture, that are listed, or are eligible for listing, in the National Register of Historic Places? Our findings are based on review of archive data maintained by the Virginia Department of Historic Resources, review of a list of eligible National Register sites obtained from the Keeper of the National Register, and visual examination of the viewshed in the vicinity of selected historic sites near the subject tower, and consultation with the State Historic Preservation Office (SHPO). The SHPO concurred that the proposed project will have No Adverse Effects on historic properties listed in or eligible for the National Register of Historic Places on 22 February 2010.	_____	_____
5. Will (May) the facility affect INDIAN RELIGIOUS SITES? Our review and background research included consultation with the State Historic Preservation Office, and appropriate Indian tribes through the FCC's Tower Construction Notification System.	_____	X _____
6. Is the facility located in a FLOOD PLAIN? Our review included evaluation of the Federal Emergency Management Agency flood map (FEMA). Roanoke County, Virginia, Community Panel Number 5H161C0141G. Tower 6 will be located within the 100-year floodplain, in the vicinity of the floodway.	X _____	_____
7. Will (May) the construction of the facility involve SIGNIFICANT CHANGE IN SURFACE FEATURES (i.e., wetland fill, deforestation or water diversion)? Our review included onsite inspection, wetland delineation and evaluation of site plans.	_____	X _____
8. Is the facility an antenna tower and (or) supporting structure that is equipped with HIGH INTENSITY WHITE LIGHTS which are to be located in RESIDENTIAL NEIGHBORHOODS, as defined by the applicable zoning law? The existing 350- to 380-foot antennas are equipped with red lights in accordance with Federal Aviation Administration (FAA) requirements. The proposed towers will comply with FAA Requirements.	_____	X _____

CONCLUSION

This NEPA Environmental Assessment reviewed the proposed modification of the WVBE antenna array with regard to items described at 47 CFR 1.1307 (a) (1)-(8). The proposed project will trigger environmental effects addressed in CFR 1.1307 (a)(7) *Is the facility located in a FLOODPLAIN?* Our review of FEMA, Roanoke County, Virginia, Community Panel Number 51161C0141G, indicated that the western and southern portion of the subject site is located within Zone AE and is within the 100-year floodplain to Gish Branch in the vicinity of the floodway. Tower 6 will be constructed within Zone AE where the base flood elevation determined by FEMA is 1076 above mean sea level (AMSL). The guy anchors will be outside the floodplain. To mitigate for potential flood damage, equipment at the Tower 6 will be housed in elevated weather-proof aluminum cabinets constructed 6 feet above ground level, at elevation 1077 AMSL. The finished top of the tower pier shall also be constructed at 1077 AMSL.

The WVBE(AM) antenna array was constructed in 1947. It is situated in a valley surrounded by residential and commercial development established in 1950 to 1960, following the tower construction. Within the 0.75 mile APE, 35 identified historic resources were constructed from 1837 to 1930 within the City of Salem. Two of these sites have been recommended eligible for listing on the National Register of Historic Places. The age of the antenna array qualifies it for evaluation as a historic resource as well. The towers are 350 to 380 feet tall and have been visible from many of the historic sites since construction in 1947. A visual impact assessment was conducted of the historic resources identified. The replacement of Tower 5 and addition of Tower 6 will not have an adverse effect on historic properties listed or found eligible for listing in the National Register.

Based on this investigation, the proposed array modification will not adversely affect historic resources. On October 5, 2004, the Federal Communications Commission released a Report and Order, FCC 04-222, adopting the Nationwide Programmatic Agreement regarding the Section 106 National Historic Preservation Act Review Process (NPA), signed by the Advisory Council on Historic Preservation (ACHP) and the National Conference of State Historic Preservation Officers (NCSHPO) and amending Section 1.1307(a)(4) of the Commission's rules, 47 C.F.R. §1.1307(a)(4). A New Tower Submission Packet Form 620 was completed for State Historic Preservation Office (SHPO) review. The SHPO concurred in a letter dated 22 February 2010 that the proposed project will have No Adverse Effect on historic properties listed in or eligible for the National Register of Historic Places.

According to the Department of Conservation and Recreation files, the Roanoke River – North and South Forks Stream Conservation Unit (SCU) is downstream of the subject site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. The Roanoke River – North and South Forks SCU has a biodiversity significance ranking of B2, which represents a site of very high significance. Gish Branch is within the Roanoke River watershed. The Roanoke River is listed as a threatened and endangered species water. Erosion and sediment control practices during construction and site management are important in headwater streams to protect water quality in the watershed.

The natural heritage resources of concern associated with this SCU are: Orangefin madtom (*Noturus gilberti*) and Roanoke logperch (*Percina rex*). The Orangefin madtom is classified as a species of concern. It is native to the upper Roanoke drainage in Virginia and North Carolina. The Roanoke logperch, classified as Federally Listed Endangered, is endemic to the Roanoke and Chowan River drainages in Virginia.

To minimize adverse impacts to the aquatic ecosystem as a result of construction activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control and stormwater management laws and regulations. Construction activities including clearing, grading and excavating that result in land disturbance of an area equal to or greater than 10,000 square feet are regulated under Virginia's Erosion and Sediment Control Program. DCR also recommends coordination with the USFWS and VDGIF to ensure compliance with protected species legislation.

The DCR had the Virginia Karst Program and the Virginia Speleological Survey review this project for documented sensitive karst features and caves. This project is situated on karst-forming carbonate rock. If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered, coordination with the DCR is requested to document and minimize adverse impacts. Discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to surface collapse, flooding, erosion and sedimentation, groundwater contamination, and degradation of subterranean habitat for natural heritage resources. DCR requests detailed location information and copies of design specifications that involve filling or improvement of sinkholes and cave openings. In cases where sinkhole improvement is for stormwater discharge, copies of VDOT Form EQ-120 will suffice.

DCR recommends voluntary implementation of USFWS interim guidelines for Recommendations on Communication Tower Siting, Construction, Operation, and Decommissioning. Unless otherwise required by the FAA, only white (preferable or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Tower designs using guy wires for support which are located in known raptor areas or daily movement routes, or in major diurnal migratory bird movement routes, should have daytime visual markers on the wires to prevent collisions by diurnally moving species. A reference for guidance on guy wire markers is provided in the USFWS guidelines in Attachment 3.

This NEPA Environmental Assessment has found no potential for significant environmental effects at the subject site resulting from the proposed action. The construction of Tower 6 within Zone AE will be mitigated by raising the base level of all structures housing equipment to a minimum elevation of 1077 AMSL. We recommend issuance of a Finding of No Significant Impact (FONSI) in order to allow the project to proceed without further environmental analysis.

DISCLAIMER AND LIMITATIONS

Stokes Environmental Associates, Ltd. is pleased to assist Mel Wheeler, Inc., in the assessment of environmental conditions at the subject property, as outlined in this report. This report has been prepared solely for the exclusive use of Mel Wheeler, Inc., their agents, and applicable regulatory agencies for specific application to the property assessed. No other person or business entity shall have any rights with regard to our contract for this project, or any rights of reliance on this report or related documents prepared by Stokes Environmental Associates, Ltd. The scope of services included in this study may not be appropriate to the needs of other users of this document, and any such use is at the risk of user.

This work has been performed using reasonable care within the scope of work and in accordance with reasonable budgetary limitations. Stokes Environmental Associates, Ltd. strives to conduct its services in keeping with industry standards and in accordance with generally accepted environmental science practice. No other warranty, expressed or implied, is made.

Our conclusions and recommendations are based upon our observations at the site, the reviewed documentation, any test results reviewed, interviews, any other information provided and our previous experience in this area. The conclusions and recommendations assume that data and other information provided are reasonably accurate. A legal review of easements, including existing or contemplated conservation easements or other deed restrictions, was beyond the scope of this environmental investigation; we have relied upon review of data provided by others with regard to existing or prior deed restrictions, and cannot guarantee the accuracy of work performed by others.

While some of the data provided by the agencies may be incorrect or incomplete, complete verification of agency data is generally beyond the scope and cost allowances of this investigation. However, the Environmental Professionals performing the review have made a reasonable effort to compensate for any evident mistakes or insufficiencies in the information reviewed that are obvious in light of other information actually known to the Environmental Professional. It should also be recognized that information may be available which was not found or reviewed in this assessment. The conclusions and recommendations are based on a limited review of the site and cannot provide complete assurance that all liabilities were detected. The conclusions and recommendations do not reflect variations in site conditions not visually apparent or which could exist in the future.

Stokes Environmental Associates, Ltd., has analyzed the information obtained in this investigation in keeping with existing guidelines and regulations, but cannot accurately predict what actions or interpretations any given agency may take presently, or what standards and practices may apply to the site in the future. Should such variations in regulations, guidelines or site conditions become apparent in the future, it will be necessary to reevaluate our conclusions and recommendations based upon additional analyses and on-site observations as appropriate. It should be noted that only the appropriate regulatory agencies can make the final decision with respect to interpretations or the extent of their jurisdiction. Unless known conditions indicate other durations, it may be generally assumed that a site assessment is viable for a period of 180 days.

The pricing for this work is based on the absence of personal liability of the preparers with respect to the work, and the understanding that any claim associated with the work shall look solely to Stokes Environmental Associates, Ltd.

Stokes Environmental Associates, Ltd., acknowledges that it maintained in full force and effect at the time the services described in the investigation were performed, professional liability (errors and omissions) insurance with minimum policy limits of one million dollars each occurrence and one million dollars in the aggregate. Stokes Environmental Associates, Ltd., currently maintains such insurance in full force and effect and currently has no plan to terminate such insurance in the foreseeable future. Stokes Environmental Associate's total aggregate liability in connection with the investigation shall not exceed that amount actually covered by insurances on any such claim.

Please note that no environmental investigation can wholly eliminate uncertainty regarding the potential for occurrence of environmental conditions in connection with a property. This study is intended to reduce, but not eliminate, such uncertainty. The investigation recognizes reasonable limits of time and cost, and is designed to provide an appropriate level of inquiry, based on existing industry standards.

REFERENCES AND COMMUNICATIONS

Introduction

Title 40 CFR, U.S. Environmental Protection Agency (EPA).

Title 47 CFR, Telecommunication, Chapter I, Federal Communication Commission (FCC).

Mel Wheeler, 2009, WVBE(AM) Array Modification Information Packet.

Question 1: Officially Designated Wilderness Areas

Title 36 CFR, Parks, Forests, and Public Property, Chapter II, U.S. Department of Agriculture (USDA), Forest Service (USFS).

Federal Legislation:

Wilderness Act of 1964.

Wild and Scenic Rivers Act of 1968.

Eastern Wilderness Act of 1975.

Federal Land Policy and Management Act of 1976.

National Trails System of 1968.

National Wilderness Preservation System (on-line database)

U.S. Department of Agriculture (USDA), Forest Service Database.

USDI, Bureau of Land Management (BLM) Database.

USDI, Fish and Wildlife Service Database.

USDI, National Park Service Database.

USDI, NPS, National Scenic Trails (online database).

USDI, NPS, National Parkways (online database).

USDI, NPS, National Wild and Scenic Rivers (online database).

U.S. Department of Transportation (DOT), National Scenic Byways Program (online database).

U.S. Environmental Protection Agency (EPA), American Heritage Designated Rivers (online database).

Virginia, Department of Conservation and Recreation (DCR), Natural Area Preserve System (on-line database).

Virginia, DCR, Virginia State Park System (on-line database).

Question 2: Officially Designated Wildlife Preserves

Title 36 CFR, Parks, Forests, and Public Property, Chapter II, U.S. Department of Agriculture (USDA), Forest Service (USFS).

Virginia, Agricultural and Forestal Districts Act, Code of Virginia 15.1-1506 through 1513.8.

Virginia, DCR Regulations at Code of Virginia 10.1-209 through 217, Virginia Natural Area Preserves Act.

Virginia, DCR Regulations at Code of Virginia 10.1-400 through 410, Scenic Rivers Act.

Virginia, DCR Regulations at Code of Virginia 10.1-1600 through 1622, Virginia Recreational Facilities Authority Act.

Virginia, DCR Regulations at Code of Virginia 10.1-1700 through 1705, Virginia Open Space Land Act.

Virginia, DCR Regulations at Code of Virginia 10.1-1800 through 1804, Virginia Outdoors Foundation.

Virginia, DCR, Natural Area Preserve System (on-line database).

Virginia, DCR, Virginia State Park System (on-line database).

U.S. Department of the Interior (USDI), Fish and Wildlife Service (FWS), National Wildlife Refuge System (on-line database).

USDI, FWS, Environmental Conservation Online System (on-line database).

Question 3: Threatened or Endangered Species or Critical Habitats

Title 50 CFR, Wildlife and Fisheries, Chapter I, U.S. Department of the Interior (USDI), Fish and Wildlife Service (FWS).

Federal Legislation:

Migratory Bird Treaty Act of 1918.

Bald Eagle Protection Act of 1940.

Maritime Mammal Protection Act of 1972.

Endangered Species Act of 1973.

Wild Bird Conservation Act of 1992.

Terwilliger, Karen. 1991. Virginia's Endangered Species.

USDI, FWS, Virginia Field Office, "Communications Tower Consultation in Virginia" and Recommendations on Communication Tower Siting, Construction, Operation, and Decommissioning."

USDI, FWS, Virginia Field Office, Mr. Eric Davis, (804) 693-6694 ext. 104, 26 September 2006.

Virginia, Department of Conservation and Recreation (DCR), Division of Natural Heritage, Biological and Conservation Data System.

Virginia, DCR, Natural Heritage Resources System (online database).

Virginia, Department of Game and Inland Fisheries (DGIF), Fish and Wildlife Information System (online database).

Question 4: Impact on Historical Sites, etc. important in American History

Title 36 CFR, Parks, Forests, and Public Property, Chapter I, U.S. Department of the Interior (USDI), National Park Service (NPS).

Title 36 CFR, Parks, Forests, and Public Property, Chapter II, U.S. Department of Agriculture (USDA), Forest Service (USFS).

Federal Legislation:

Antiques Act of 1906.

Historic Sites Act of 1935.

National Historic Preservation Act of 1966.

National Trails System of 1968.

Federal Communications Commission, Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission.

USDI, BLM, National Historic Trails (online database).

USDI, NPS, National Register Information System (online database).

USDI, NPS, National Historic Landmarks (online database).

USDI, NPS, National Historic Trails (online database).

Virginia, DCR, Virginia State Park System (on-line database).

Virginia, DHR. 2003. Virginia Landmarks Register - National Register of Historic Places. (Updated through DHR and NPS.)

Virginia, DHR. Online Historic Resources Data Sharing System.

Question 5: Indian Religious Sites

Federal Legislation:

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