



ARLINGTON COUNTY, VIRGINIA

County Board Agenda Item
Meeting of May 22, 2010

DATE: May 13, 2010

SUBJECT: U-96-48-1 USE PERMIT AMENDMENT for a commercial radio tower for WETA-FM located at 5217 19th Road N. (RPC# 09-015-024).

Applicant:

Pat Williamson
3939 Campbell Ave.
Arlington, Virginia 22206

C. M. RECOMMENDATION:

Approve the use permit amendment for a commercial radio tower for WETA-FM at 5217 19th Road N., with amended Conditions #1-22, and with an administrative review in one (1) year (May 2011) and a County Board review in five (5) years (May 2015).

ISSUES: This is a request for an amendment to the applicant's use permit for a commercial radio tower to remove the numerical limitation on antennas on the tower structure to be replaced with a performance standard based on maximum allowable ground-level radiofrequency emissions. In addition, staff proposes to amend and consolidate outdated and redundant conditions of approval. No issues have been identified.

SUMMARY: The applicant is a non-profit educationally chartered radio and television service. For many years, the applicant has been supplementing their revenue leasing space on their 500-foot FM radio transmitter tower in Hall's Hill to cell phone and wireless providers. Currently, the applicant is limited to 44 antennas total on the tower structure. This is a request for an amendment to the applicant's use permit to remove the numerical limitation on antennas on the tower structure, to be replaced with a performance standard based on maximum allowable ground-level radiofrequency emissions. The maximum proposed allowable emissions will be 50 microwatts per square centimeter, which is one-fourth the Federal Communications Commission's (FCC) maximum allowable limit for human health and safety. The applicant already submits annual reports on radiofrequency emissions, prepared by an independent consultant, to the Zoning Administrator and affected Civic Associations, and compliance will be monitored in this way. For as far back as the applicant has been required to submit the annual reports, the total amount of ground-level radiofrequency emissions has been a fraction of the FCC's maximum levels. With regards to potential visual impact of more antennas, over the last several years cell phone antennas and microwave dishes for wireless internet have gotten

County Manager: BMD/GA

Staff: Peter Schulz, DCPHD, Planning Division

PLA-5570

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progressively smaller. Most cell phone antennas are cylindrical and approximately two (2) feet long, and Wi-Fi dishes range for 15 inches to two (2) feet in diameter. There is also a current condition of approval that requires the applicant to require of cell phone and Wi-Fi companies the smallest feasible equipment. The applicant also agrees to a new condition to paint the antennas to match the color of the tower. Ground-level equipment associated with cell phone antennas is hidden by a masonry wall the applicant constructed several years ago that has sound baffles, and a site visit confirmed that sound is shielded well and the current cell phone antennas are visually unobtrusive. In addition, staff proposes to amend and consolidate outdated and redundant conditions of approval. County policy has been to encourage co-location of cell phone antennas in lieu of new monopoles, and this structure is the tallest in Arlington County. Therefore, staff recommends approval of the use permit amendment for a commercial radio tower for WETA-FM at 5217 19th Road N., with amended Conditions #1-22, and with an administrative review in one (1) year (May 2011) and a County Board review in five (5) years (May 2015).

BACKGROUND: The subject property has been operating under a use permit since 1948 as at first as a commercial television tower for the Dumont Network, then since the 1960s as WETA's FM transmitter (the WETA-TV transmitter is in Northwest Washington, although for a time the TV studios were located at the Arlington site). The current 500-foot tower was approved by the County Board in 1985. The last review of the subject use permit was in September 2005, when the use was renewed for five (5) years.

The following provides more information about the site:

Site: The site consists of a commercial FM radio transmitter and support buildings housing mechanical and electronic equipment. The cabinets for the cell phone and wireless antennas are housed in a screened and soundproofed outdoor area. There is a small parking lot. No workers work at the site full-time. The lot is approximately 25,000 square feet.

To the north:	Big Walnut Park, zoned "S-3A".
To the south:	Across 19 th Rd. N., single family residences, zoned "R-6".
To the east:	Single-family residences, zoned "R-6".
To the west:	Single-family residences, zoned "R-8".

Zoning: The site is zoned "R-6" One-Family Dwelling Districts.

Land Use: The subject site is designated "Low Residential" (1-10 du/acre).

Neighborhood: The site is located within John M. Langston Civic Association boundary, which after a public meeting with the applicant, submitted a letter of support for the request. The site is adjacent to the Tara-Leeway Heights Civic Association, and the applicant has made presented their application to a meeting of the association, and has been in constant contact with the association. However, as of the writing of this report Tara-Leeway Association has not presented any comments to staff.

DISCUSSION: The applicant is a non-profit educational media corporation. The applicant operates a commercial FM radio tower at the site, and for almost two decades has leased space on the tower to cell phone companies and other wireless providers. The use permit currently has

a limit of 44 antennas on the commercial radio tower which was put in place in 1998. Since 1998, cell phone and wireless technology use has grown exponentially, while the antennas and infrastructure associated with such technology has grown smaller. The applicant, therefore, proposes to eliminate the numerical cap on the number of antennas permitted on the radio tower, in place of a performance standard based on a maximum permissible quantity of radiofrequency emissions. The applicant proposes a maximum permissible ground-level frequency emission of 50 microwatts per square centimeter. The maximum permissible emissions by the Federal Communications Commission (FCC) is 200 microwatts per square centimeter.

The applicant has for many years submitted an annual emissions inspection report prepared by an independent consultant, as is required by the conditions of approval. The consultant measures the radiofrequency from numerous locations in the area, and the same locations as far as possible every year. The reports have been annually delivered to the Civic Associations and interested parties, and the tests have never shown emissions more than 10% of the FCC's maximum allowable standard for human health (the new standard will be a maximum of 25%). The annual emissions report will continue to be a condition of approval, and will be the basis by which County staff can monitor the applicant's compliance with the performance standard.

With regards to visual impact, antennas currently used for digital wireless telephone and internet are much smaller than they were in 1998, and the largest visual impact at the site is the tower itself and the FM master antenna on the mast. The applicant will continue to be required to request from their lessees the smallest, least obtrusive equipment available.

Staff believes it is unlikely that removing the numerical cap on the antennas will have a negative visual impact on surrounding properties. This particular tower is not very exposed to public view as it is surrounded by development and mature trees. The vast majority of the applicant's antennas are more than 100 feet above the street level (the tower is 500 feet tall) in order for the antennas to have the widest possible range. A person at the ground in the immediate vicinity has to deliberately look high up to find the antennas, and from a distance the average person would only see the tower structure itself and the FM antenna. The applicant also agrees to a new condition to paint the antennas a color to match the tower structure. As stated above, the technology has progressed over the last few decades that antennas for telecommunications have become smaller and smaller as the technology has progressed from analog transmission to digital transmission. For their part, the applicant has to take into consideration the maximum load limits of the radio tower (the applicant has regular maintenance and inspections for structural integrity of the tower mandated by the FCC), and there still will be a limit to the number of possible antennas the applicant may place on the tower, whether they reach the proposed 25% maximum or the practical load limits of the tower. Additionally, the County's policy is to encourage co-location of antennas on a structure, especially one as tall as this, where antennas can have the widest possible range, reducing the likelihood of future requests for additional telecommunications facilities, including monopoles, elsewhere in the County. Finally, the surrounding community and Civic Associations have not expressed concerns about the aesthetic impact of the applicant's request, as opposed to the impact on radiofrequency emissions.

Staff also proposes amending the conditions of approval by removing conditions that have accumulated over the years when the applicant has done various construction projects. As they currently stand, the conditions are unwieldy and repetitive, and many are one-time construction-related conditions of approval that the applicant has long fulfilled. There is also a reference to a

defunct organization, "Citizens Around the Tower", and the Highview Park Neighborhood Conservation Area is now a part of the Langston Civic Association. In another case a condition is repeated word-for-word elsewhere. Staff recommends amending the conditions to what is essential to protect adjacent land uses from any potential negative impacts from the applicant's operation in general, and the subject application specifically. In addition, staff proposes to treat microwave antennas (generally used for wireless internet) the same as cell phone antennas, as microwave technology has changed to the point that the antennas involved are extremely small (usually 15 inches around), and they focus transmissions in a narrow band from sending dish to receiving dish, and do not dissipate in the ground atmosphere as radio waves do, and therefore should not have an effect on ground-based human health. Such antennas have over the past few years been placed all over the County with no apparent ill effects. The applicant currently has only one (1) antenna on the radio tower that can be defined as a microwave antenna, but as the use of wireless internet expands, the applicant should be able to add more.

CONCLUSION: The proposed use permit amendment to replace a numerical cap on antennas and replace that cap with an annually-monitored (by a third party) performance standard cap of 25% of the FCC's maximum permissible ground-level radiofrequency emissions will not adversely affect the health and safety of adjacent citizens, and will not have a negative visual impact on adjacent properties. It is also County policy to promote co-location of cell phone antennas onto existing tall structures, lessening the need for additional monopoles. Therefore, staff recommends approval of the use permit amendment for a commercial radio tower for WETA-FM at 5217 19th Road N., with amended Conditions #1-22, and with an administrative review in one (1) year (May 2011) and a County Board review in five (5) years (May 2015).

Amended conditions:

- ~~1. A surety agreement in the amount of \$6,300.00 shall be executed with Arlington County to ensure the completion of landscaping and soundproofing.~~
- ~~1. 2. Additional structural or technological changes to the tower structure and mast or transmit/receive equipment for use by GWETA or others not previously approved its successors in ownership shall require an amendment to the use permit. These changes may be considered administratively as long as they are smaller than or equal to existing improvements, stay at the same location on the tower, and replace existing improvements.~~
- ~~3. A landscaping and site development plan including improved access to Big Walnut Park shall be approved by the County Manager or his designee prior to the installation of any site, structural or technological improvements. The landscaping shall be completed within 90 days of the approval of the landscape plan by the County Manager or his designee.~~
- ~~4. Sound baffling materials for fans and generators shall be approved by the County Manager or his designee. This equipment shall be installed within 90 days of the approval of the building permit. The County shall test the equipment for compliance with the noise ordinance following installation.~~
25. The applicant shall continue to permit access through the GWETA site to Big Walnut Park. GWETA shall grant a permanent access easement for the GWETA property outside

the fence. Maintenance of the easement area shall be the responsibility of Arlington County. The applicant shall prepare a plat of the easement area subject to the approval of the County Manager. The deed of easement shall be subject to the approval of the County Attorney.

36. The GWETA liaison shall contact the Presidents of the John M. Langston Civic Association and the Tara-Leeway Heights Civic Association, ~~the Highview Park Neighborhood Conservation Area representative, the Citizens Around the Tower representative,~~ and residents of North 19th Road prior to commencing any tower work involving climbers or site or structural improvements other than routine maintenance of the grounds. In an emergency situation, neighborhood notification shall occur within 24 hours, or the next business day.
47. Employee cars, maintenance and construction vehicles shall park in the GWETA parking lot. Residents of 19th Road North shall be notified in advance of any circumstances that would require employee or contractor parking on 19th Road North.
58. Sunday work on the tower or property is not permitted, except in emergency situations.
69. ~~Semi-a~~Annual radiation tests shall be conducted by an independent authority at the expense of GWETA to be selected by GWETA, a citizen representative, and the County Manager's representative. If the independent authority finds that any ~~American National Standards Institute or Federal Communications Commission Guidelines~~ standards for emissions by the tower are being violated, the review date shall be advanced to the earliest date after the report to the County Manager for which a County Board hearing can be advertised. Radiofrequency emissions shall not exceed 50 microwatts per square centimeter.
- ~~10.~~ The applicant shall secure the approval of the County Manager or his designee of the materials to be used on the exterior facade of the accessory building prior to issuance of a building permit.
- ~~11.~~ The applicant shall add a brick facade to the existing cinder block walls.
- ~~12.~~ The applicant shall secure the approval of the County Manager or his designee of a landscape plan for the proposed changes.
713. ~~The number of antennas which may be installed on the applicant's tower shall not exceed 44. The applicant shall be permitted to install the additional 12 antennas up to the 44 antenna limit;~~ Additional antennas may be installed with no limit on the number, subject to such additional antennas complying with the equipment design and use specifications as set forth in the County Manager's November 4, 1998 report, and approved by the County Board on November 18, 1998, provided that the applicant shall include in every lease that all antenna placed on the tower pursuant to the lease must be the smallest, least visible design that is technologically feasible. The applicant agrees further that each of its own antennae will also meet this criteria. Antennas must be painted to match the color of the tower structure.

- ~~14. The applicant shall remove the three dipole antennas not currently in use.~~
- ~~8+5. No additional building shall be built nor shall there be an increase in the footprint of the existing buildings shall be permitted without consideration of a use permit amendment by the County Board.~~
~~No microwave antenna, except those previously approved or substitutions for the same as allowed by condition number two shall be installed on the tower. If the current lessee using microwave antennas terminates its use of same, and further, if applicant's lease with said lessee so permits, those microwave antennas will be removed and non-microwave substitutions of the current dipole type antenna or antenna type as approved herein may be installed on the tower, subject to the 44 antenna limit.~~
- ~~16. No microwave antenna, except those previously approved or substitutions for the same as allowed by condition two, shall be installed on the tower. If the current lessee using microwave antenna terminates its use of same, and further, if applicant's lease with said lessee so permits, those microwave antennas will be removed and non-microwave substitutions of the current dipole type antenna or antenna type as approved herein may be installed on the tower subject to the 44 antenna limit.~~
- ~~17. The applicant shall not install any antennas which will result in an increase in the microwave emission level above that of the existing and previously approved microwave antennas.~~
- ~~18. The applicant shall be allowed to move and/or install existing or future dipole type antennas, such as are currently present on the tower or are of the antenna type as approved herein, to other locations on the tower, subject to the 44 antenna limit and administrative review but without need for an amendment to this use permit.~~
- ~~19. If all microwave antennas are removed from the tower, the applicant shall only be required to conduct annual emission tests.~~
- ~~20. The applicant shall extend the sound baffling wall currently by the generators around and as high as the prefabricated accessory building approved herein to provide additional sound baffling and with brick facade.~~
- ~~21. The applicant shall confer with the proper County officials to check the adequacy of grounding of the lightning rod on the tower subsequent to the installation Of the prefabricated accessory building.~~
- ~~922. At the earliest possible opportunity, the applicant shall include in every lease that all antenna placed on the tower pursuant to the lease must be the smallest, least visible design that is technologically feasible. The applicant agrees further that each of its own antennae will also meet this criteria. In addition, the applicant agreed to provide, within 90 days of County Board approval of the use permit, a letter of intent to the County Board detailing the applicant's willingness to provide enhanced landscaping at Big Walnut Park and to work with the Program Director of the Head Start Program and the principals of Tuckahoe and Glebe Elementary Schools to establish educational alliances~~

between these groups and GWETA. The applicant agrees to continue to offer educational alliances to the Director of the Head Start Program, and the principals of the Glebe and Tuckahoe Elementary Schools.

10. The applicant agrees, and agrees to require of lessees, to remove unused equipment from the tower immediately upon cessation of use.

PREVIOUS COUNTY BOARD ACTIONS:

July 13, 1948	Approved a use permit (U-96-48-1) for a 450-foot television tower.
November 2, 1963	Approved a use permit (U-1583-63-2) for an educational television studio.
July 24, 1965	Denied a use permit (U-1670-65-3) to construct and operate a second 475 foot commercial radio tower.
July 7, 1979	Denied a use permit (U-2214-79-4) to operate a communications satellite earth receiving station.
October 5, 1985	Approved a use permit amendment (U-96-48-1) to increase the maximum permitted height of the tower to 496 feet, subject to new conditions and review in one (1) year.
October 18, 1986	Renewed a use permit (U-96-48-1) for a 496-foot radio/television tower subject to all previous conditions and with a review in one (1) year. .
April 25, 1987	Renewed a use permit for 496-foot radio/television tower subject to all previous conditions and with a review in one (1) year.
August 15, 1987	Approved a use permit amendment (U-96-48-1) to add six pole-type receive/transmit antennas to the existing radio tower and to install accessory building under the tower, subject to previous conditions and new conditions, and with a review in one (1) year.
August 13, 1988	Continued the use permit amendment (U-96-48-1) permitting the addition of six pole-type receive/transmit antennas to the exiting radio tower, and installation of an accessory building, for one (1) month to September 10, 1988.
September 10, 1988	Renewed a use permit amendment (U-96-48-1) for the operation of a radio tower and accessory uses including six pole-type receive/transmit antennas and an accessory building, with an amended condition #9 and review in three (3) years.
September 18, 1991	Continued a use permit (U-96-48-1) for operation of a radio tower and accessory uses including six pole-type receive/transmit antennae and an accessory building, subject to all previous conditions and a review in one (1) year.

- September 12, 1992 Continued the use permit (U-96-48-1) for the operation of a radio tower and accessory uses including six pole-type receive/transmit antennae and an accessory building, subject to all previous conditions and with a review in three (3) years.
- September 9, 1995 Continued the use permit (U-96-48-1) for the operation of a radio tower and accessory uses including six pole-type receive/transmit antennae and an accessory building, subject to all previous conditions and with a review in five (5) years.
- October 17, 1998 Deferred consideration of a use permit amendment (U-96- 48-1) to increase the number of antenna on the tower from 32 to 48.
- November 18, 1998 Approved a use permit amendment (U-96-48-1) to change the allowable number of antennas on the tower for an additional 12 antennas (from 32 to 44) for applicant and County cable uses, subject to previous conditions and new conditions, and with a review in one (1) year.
- November 13, 1999 Continued the use permit amendment (U-96-48-1) permitting to change the allowable number of antennas on the tower from 32 to 44 for applicant and County cable uses, subject to all previous conditions, and with a review in three (3) years.
- November 16, 2002 Continued the use permit amendment (U-96-48-1) to increase the maximum number of antennas on the tower from 32 to 44 for applicant and County cable uses, subject to all previous conditions, and with a review in three (3) years.
- September 17, 2005 Renewed a use permit amendment subject to all previously approved conditions, modified condition #2, and review in five (5) years (September 2010).

Approved Conditions:

1. A surety agreement in the amount of \$6,300.00 shall be executed with Arlington County to ensure the completion of landscaping and soundproofing.
2. Additional structural or technological changes to the tower structure, mast or transmit/receive equipment for use by GWETA or others not previously approved shall require an amendment to the use permit. These changes may be considered administratively as long as they are smaller than or equal to existing improvements, stay at the same location on the tower, and replace existing improvements.
3. A landscaping and site development plan including improved access to Big Walnut Park shall be approved by the County Manager or his designee prior to the installation of any site, structural or technological improvements. The landscaping shall be completed within 90 days of the approval of the landscape plan by the County Manager or his designee.
4. Sound baffling materials for fans and generators shall be approved by the County Manager or his designee. This equipment shall be installed within 90 days of the approval of the building permit. The County shall test the equipment for compliance with the noise ordinance following installation.
5. The applicant shall continue to permit access through the GWETA site to Big Walnut Park. GWETA shall grant a permanent access easement for the GWETA property outside the fence. Maintenance of the easement area shall be the responsibility of Arlington County. The applicant shall prepare a plat of the easement area subject to the approval of the County Manager. The deed of easement shall be subject to the approval of the County Attorney.
6. The GWETA liaison shall contact the Presidents of the John M. Langston Civic Association and the Tara-Leeway Heights Civic Association, the Highview Park Neighborhood Conservation Area representative, the Citizens Around the Tower representative, and residents of North 19th Road prior to commencing any site or structural improvements other than routine maintenance of the grounds.
7. Employee cars, maintenance and construction vehicles shall park in the GWETA parking lot. Residents of 19th Road North shall be notified in advance of any circumstances that would require employee parking on 19th Road North.
8. Sunday work on the tower or property is not permitted, except in emergency situations.
9. Semi-annual radiation tests shall be conducted by an independent authority at the expense of GWETA to be selected by GWETA, a citizen representative, and the County Manager's representative. If the independent authority finds that any American National Standards Institute standards for emissions by the tower are being violated, the review date shall be advanced to the earliest date after the report to the County Manager for which a County Board hearing can be advertised.

10. The applicant shall secure the approval of the County Manager or his designee of the materials to be used on the exterior facade of the accessory building prior to issuance of a building permit.
11. The applicant shall add a brick facade to the existing cinder block walls.
12. The applicant shall secure the approval of the County Manager or his designee of a landscape plan for the proposed changes.
13. The number of antennas which may be installed on the applicant's tower shall not exceed 44. The applicant shall be permitted to install the additional 12 antennas up to the 44 antenna limit, subject to such additional antennas complying with the equipment design and use specifications as set forth in the County Manager's November 4, 1998 report, and approved by the County Board on November 18, 1998.
14. The applicant shall remove the three dipole antennas not currently in use.
15. No additional building shall be built or installed on the premises, except as mentioned above. No increase in the footprint of the existing building shall be permitted without consideration of a use permit amendment by the County Board.
No microwave antenna, except those previously approved or substitutions for the same as allowed by condition number two shall be installed on the tower. If the current lessee using microwave antennas terminates its use of same, and further, if applicant's lease with said lessee so permits, those microwave antennas will be removed and non-microwave substitutions of the current dipole type antenna or antenna type as approved herein may be installed on the tower, subject to the 44 antenna limit.
16. No microwave antenna, except those previously approved or substitutions for the same as allowed by condition two, shall be installed on the tower. If the current lessee using microwave antenna terminates its use of same, and further, if applicant's lease with said lessee so permits, those microwave antennas will be removed and non-microwave substitutions of the current dipole type antenna or antenna type as approved herein may be installed on the tower subject to the 44 antenna limit.
17. The applicant shall not install any antennas which will result in an increase in the microwave emission level above that of the existing and previously approved microwave antennas.
18. The applicant shall be allowed to move and/or install existing or future dipole-type antennas, such as are currently present on the tower or are of the antenna type as approved herein, to other locations on the tower, subject to the 44 antenna limit and administrative review but without need for an amendment to this use permit.
19. If all microwave antennas are removed from the tower, the applicant shall only be required to conduct annual emission tests.

20. The applicant shall extend the sound baffling wall currently by the generators around and as high as the prefabricated accessory building approved herein to provide additional sound baffling and with brick facade.
21. The applicant shall confer with the proper County officials to check the adequacy of grounding of the lightning rod on the tower subsequent to the installation Of the prefabricated accessory building.
22. At the earliest possible opportunity, the applicant shall include in every lease that all antenna placed on the tower pursuant to the lease must be the smallest, least visible design that is technologically feasible. The applicant agrees further that each of its own antennae will also meet this criteria. In addition, the applicant agreed to provide, within 90 days of County Board approval of the use permit, a letter of intent to the County Board detailing the applicant's willingness to provide enhanced landscaping at Big Walnut Park and to work with the Program Director of the Head Start Program and the principals of Tuckahoe and Glebe Elementary Schools to establish educational alliances between these groups and GWETA.



*The John M. Langston Civic Association
2106 North Emerson Street
Arlington, VA 22207
(703) 524-3948*

Meets at 7:00 p.m. on the 4th Wednesday at the Langston-Brown Community Center.

March 29, 2010

The Honorable Jay Fisette
Chairman, Arlington County Board
2100 Clarendon Blvd. – Suite 300
Arlington, VA 22201

Dear Mr. Chairman:

Re: Use Permit #U-96-48-1

On Wednesday, March 24, 2010, representatives of WETA, lead by Mrs. Pat Williamson, appeared before the John M. Langston Civic Association seeking our support for their request for renewal of the subject Use Permit.

This letter is to inform you that the John M. Langston Civic Association voted unanimously to support WETA and we look forward to the Board approving their request.

Sincerely yours,

Willie Jackson-Baker
President

