GOVERNMENT OF THE DISTRICT OF COLUMBIA
OFFICE OF PLANNING

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MEMORANDUM

TO: Board of Zoning Adjustment

FROM: JLS for Andrew Altman, Director

DATE September 30, 2004

SUBJECT: BZA Application **17211**
4001 Nebraska Avenue, N.W. – NBC Tower (circa 1955)

APPLICATION

The applicant, National Broadcasting Corporation (NBC), is requesting special exception approval pursuant to 11 DCMR 3104.1 under Section 211 to continue operation of a commercial broadcasting tower in an R-1-B District at premises 4001 Nebraska Avenue, N.W. in Square 1722, Lot 1.

SUMMARY RECOMMENDATION

OP **recommends approval** of the 1955 tower's continuance subject to the following condition:

- Approval shall be for a period of two (2) years from the date of the Order to synchronize with the Master Plan.
- The tower is maintained in a muted gray color to minimize its appearance.
- The applicant, through its Community Liaison, shall continue to meet with neighborhood representatives upon request of Neighborhood Advisory Commissions 3E and 3C.

SITE DESCRIPTION and BACKGROUND

The subject property is located on the east side of Nebraska Avenue, with Massachusetts Avenue to the south and Upton Street to the north. The 7-acre site is developed with a three-story structure, two antenna towers, and a parking lot to accommodate up to 222 vehicles. The site abuts the U.S. Department of Homeland Security to the south, Glover-Archbold Park to the east and the National Presbyterian Church headquarters and school to the north. The church also leases additional parking spaces for use by the applicant. The property is located in an R-1-B zone District.

BZA
Case No. 17211
Exhibit No. 25

Board of Zoning Adjustment
District of Columbia
CASE NO. 17211
EXHIBIT NO. 25

MASTER PLAN

From 1965 through 1980, the applicant, NBC was granted a number of variances to permit expansion of its office and studio space to accommodate staff needs. The 1980 expansion request prompted the Board to require NBC to submit a master plan to reflect its future development and parking needs before any additional applications were accepted. BZA Order 13554 issued in November 1981, approved NBC's submission incorporating the Master Plan for a twenty-five year period. The plan envisioned a 5-story, 312,000 square-foot complex, built out in three phases over this period. The Master Plan also included a new 659-foot tall tower to replace the 1955 tower to transmit signals over buildings in Northern Virginia and Maryland. This tower was built in 1988. The approval was also conditioned by the grant of a scenic easement to the National Park Service. The Master Plan approval expires November 25, 2006.

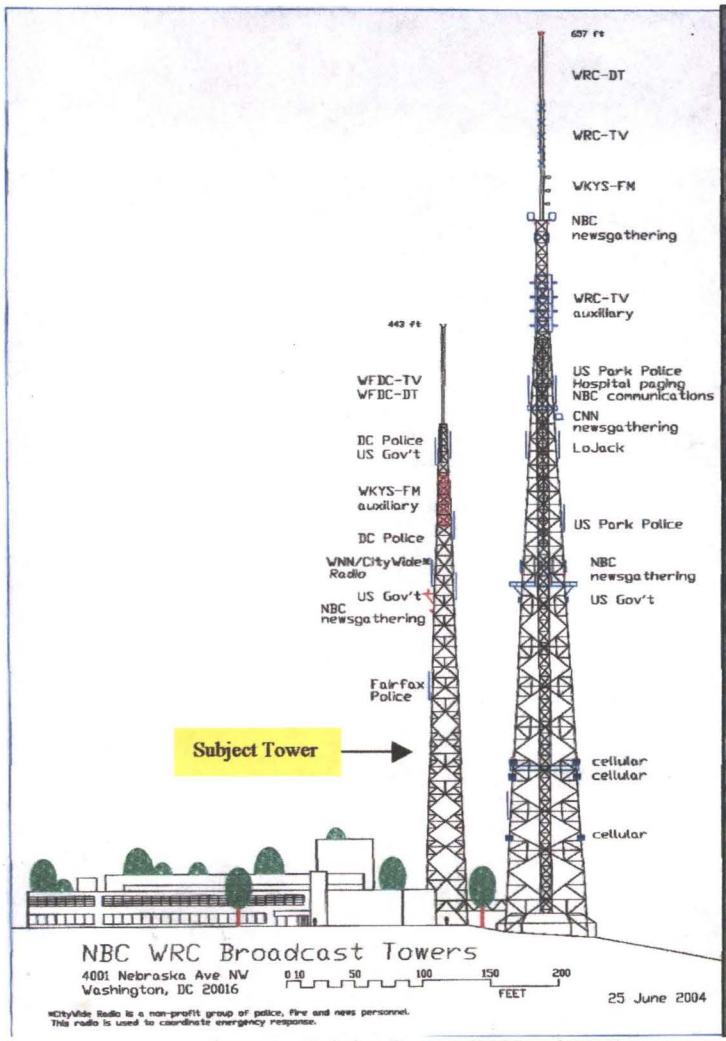
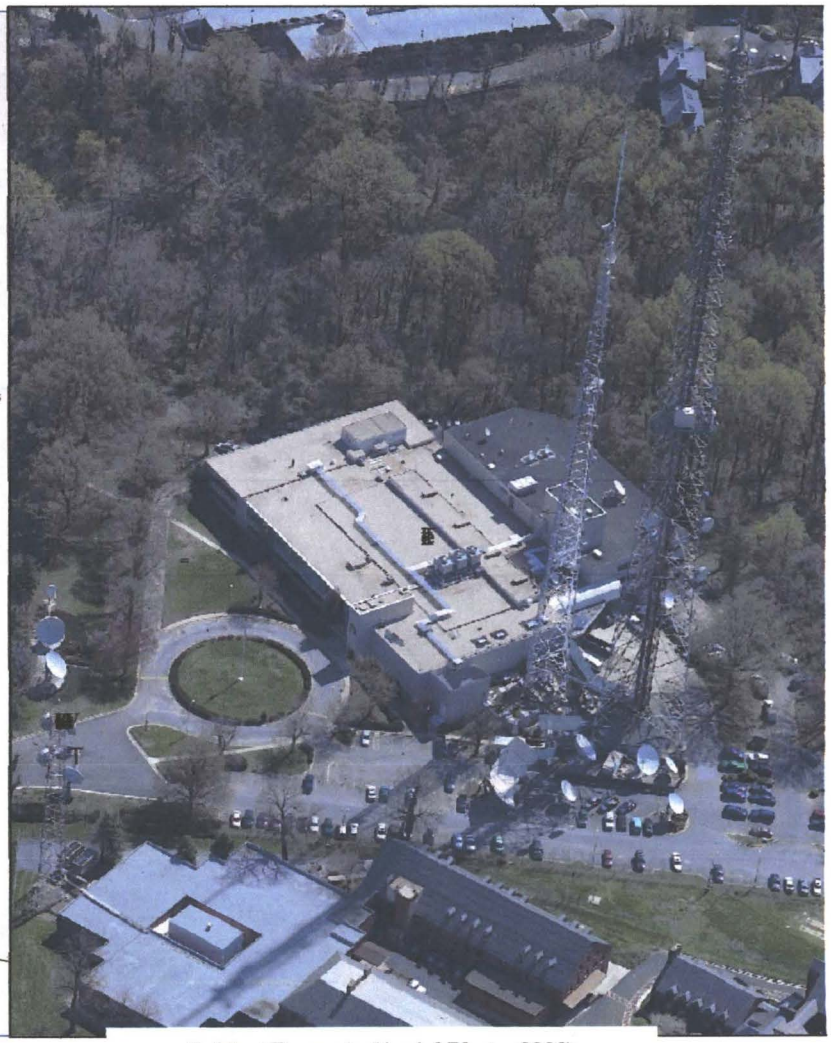


Figure 1 – Existing Towers (1955 and 1988)

(Provided by the applicant)



Subject Property (Aerial Photo, 2003)

ZONING REQUIREMENT and ANALYSIS

Based on reviews of past records, including previous Board Orders, transcripts and the applicant's submissions, the following provides an overview of previous approvals for the subject tower and the site:

Chronology of Site Approvals

Appeal/BZA Order	Approval
App. # 4159: **(06/01/1955)**	**Use Variance** to NBC to establish office building (studio) and tower with parking for the purposes of commercial broadcasting.
App. #5494 **(05/20/1959)**	**Use Variance** to permit continuation and enlargement of parking facilities (due to change in zoning regulations).
App. # 8234 **(06/16/1965)**	**Use Variance** to permit (16,280 sq. ft.) addition to office building - from 91,370 sq. ft to 107,650 square feet. Also for an increase in parking.
App. # 10120 **(11/16/1970)**	**Use Variance** reinstated to permit 2nd floor addition permitted under # 8234 (Not constructed at that time and approval expired).
App. #12011 **(10/22/1975)**	Reinstatement of Order # 10120 with permission to locate temporary structures for offices during construction.
BZA Order # 12539 **(03/7/1978)**	Grants request for 2-year extension of temporary office structures due to increased number of staff persons.
BZA Order # 13222 **(07/28/1980)**	**Use Variance** to permit ground floor and 2nd story addition, conditioned with creation of a Master Plan before any additional applications are considered in the future.
BZA Order #13554 **(11/25/1981)**	**Use Variance for Master Plan** approval with additions to studio and offices. Master Plan also includes construction of a new tower to replace older 1955 tower. (Has 25-year time span with site expansion in 3 phases).
BZA Order # 15708 **(12/1994)**	**Special Exception** under §211 to modify a condition of Order 13554 to continue operation of the 1955 tower.
BZA Order #15708-A **(01/21/2004)**	**Special Exception** under §211 to modify a condition of Order 13554 to continue operation of the 1955 tower. (Decision and Order on Remand)

Table 1

Current zoning regulations pertaining to tower structures in residential zones are set out in §211. While installation of telecommunication systems involving towers and monopoles in residential districts require special exception approval by the Board of Zoning Adjustment, the continuation of the existing (1955) tower is also subject to provisions of §211 as follows:

Special Exception
Section 211

211.1 *Use as an antenna for commercial television and frequency modulation broadcasting to any height and in conjunction with the erection, alteration, or use of buildings for transmission or reception equipment on the same lot or elsewhere, shall be permitted as a special exception in an R-1 District if approved by the Board of Zoning Adjustment under §3104, subject to the provisions of this section.*

The property is located in the R-1-B zone district and the existing 1955 tower is governed by special exception criteria.

211.2 *The proposed location, height and other characteristics of the antenna shall not adversely affect the use of neighboring property.*

While the site consists of two towers, (an older version constructed in 1955, and a more recent addition constructed in 1988), the subject tower (circa1955) predates the existing 1958 Zoning Regulations and its height of 459 feet was previously approved by Commissioners of the District of Columbia[1]. When the tower was constructed, there were no other structures with the required height in the immediate area that would support the installation of antennas and the station's current office building is currently only three stories high, a height not suitable for the transmission and coverage needs of NBC.

The tower is located more than 600 feet from the entrance at Nebraska Avenue. As such, the health, safety, and welfare of the immediate neighborhood, including pedestrians are not affected due to the potential of falling ice, antennas, or any other structures supported by the tower.

The tower is licensed by the Federal Communications Commission (FCC) and the applicant must comply with the FCC's requirement regarding safety of radio frequency broadcasts. Since the tower must comply with FCC requirements regarding RF emissions, OP has no reason to believe that continuation of the tower will result in adverse effects of neighboring property due to the electromagnetic effects of the tower.[2] Based on the information submitted into the record, there are no residences within the 200-foot radius of the site.

OP does not believe the tower affects the use of neighboring properties and is persuaded by the Board's latest decision (#15708-A) that the continuation of the 1955 tower "would actually result in less impact on the surrounding neighborhood than if the tower approved in the 1981 master plan were constructed."

The tower has existed in this neighborhood for approximately half a century and the neighborhood has expanded around the tower. The existence of the tower since 1955 has not affected the surrounding neighborhood's acclaimed character and development. The tower does not detract from the neighborhood's existing streetscape or the future development of the residential neighborhoods, which abut Glover-Archbold Park or the immediate neighborhood along Nebraska Avenue.

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[1] Permitted under the Act to Regulate the Height of Buildings in the District of Columbia (36 Stat. 452, as amended; D.C. Official Code §§6-601.01 – 6-601.09).

[2] **RF & Safety Standards**
Radio frequency (RF) energy is widely used for telecommunication purposes and is closely regulated by the Federal Communication Commission (FCC). The FCC mandates that all communication facilities meet strict exposure guidelines that have been established by leading scientific and medical research associations. The RF energy is measured based upon the type of transmitter, power of the transmission, the angle of the transmission, and distance to the site being measured. RF energy drops exponentially as distance grows from the source.

211.3 *The antenna shall be mounted in a location that minimizes to the greatest practicable degree its visibility from neighboring property and from adjacent public space, or that is appropriately screened by landscaping or other techniques so as to soften or minimize the visibility of the antenna.*

The location of the tower, approximately six hundred feet off Nebraska Avenue, to the rear of U.S. Government buildings which front Nebraska Avenue, as well as the presence of the existing trees on the property and the abutting Glover-Archbold Park, shield immediate visibility of the subject tower from the public right-of-way. The distance from Nebraska Avenue and the property line abutting the Park property, create setbacks from all property lines, which are greater than those required by the Zoning Regulations. The location of the tower provided, and continues to provide the least visual impact on the surrounding neighborhood and this attempt to maintain the scenic beauty of the Nation's Capital was supported in the previous decision on the tower's continuance. There are telecommunications sites throughout the District located near residential neighborhoods. However, the distance from this site to the nearest residence is far greater, (approximately 700 feet), thereby minimizing the visual impact to residential properties.

As shown in the submitted plans, the tower is not easily accessed by the public. Since no additional development is proposed, there seems no need for additional landscaping at this time. The site is well landscaped and buffered by Glover-Archbold Park and other buildings which front Nebraska Avenue, thereby shielding the tower's immediate view from the public right-of-way at grade.

211.4 *Each part of the ground mounted commercial broadcast antenna, including support system and guy wires, shall be removed a minimum of ten feet (10 ft.) from each lot line or a distance of at least one-sixth of the mounted height of the antenna, whichever is greater.*

The tower is a self-supporting structure and does not require guy wires. As previously stated, the tower is removed from all lot lines at a distance greater than the minimum requirement of the regulations (77 feet). It is approximately 600 feet from the lot line which fronts Nebraska Avenue and more than 200 feet to the nearest portion of the lot line which abuts the National Park Service property.

211.5 *The proposed height of the tower shall not exceed that which is reasonably necessary to render satisfactory service to all parts of its service area.*

The height of the tower is necessary to support the required coverage area for all the communication services supported by the tower.[3] Based on the applicant's submitted drawings, the older tower accommodates up to ten different antennas, including those required for public safety communication. The tower supports antenna services for various metropolitan police departments including the District and Fairfax County, the U.S. Government, and NBC's newsgathering services, and local area community radio and television. The whip antennas on the towers receive and transmit data and other information and their allotted heights on the tower are necessary for their efficiency.

Both towers are not readily visible from public right-of-ways. While the consolidation of two towers into one was suggested in previous hearings, the height and structure of the larger tower would have to be increased and altered respectively, to support the displaced equipment of the subject tower, in order to render satisfactory service to all parts of service areas of the tower's users.

Standard RF engineering practice dictates a vertical separation of 7 to 10 feet between antennas to minimize interference between various carriers[4]. Based on this information, OP believes an approximate minimum increase of 80 feet of tower height would be required to accommodate these antennas on the 1988 tower. In addition, while the master plan's proposal may have been able to support the older tower's antennas, co-location on a single tower, with an increase in height, would negatively impact the District's skyline. This is supported by the Board's determination, which stated that the master plan's tower would have had larger structural members, and a greater load bearing capacity, which most likely would have resulted in larger and more antennas than the 1955 tower.

211.6 *No transmission equipment shall be located in a Residence District, unless location in the district is necessary for technically satisfactory and reasonably economical transmission.*

The site has been developed and operated as a commercial broadcast studio by NBC since 1955, predating the 1958 Zoning Regulations. In granting previous

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[3] **Coverage & Antennas**
Each site in the system provides coverage to that local area which allows communication with all of the other sites through a prime site. The antennas and equipment located at each site provide a radio communication link between the system and its members as well as between each site and the central communications office. The transmit antennas send the transmissions in a focused direction. The whip antennas receive the transmissions from mobile or portable radios important for public safety personnel. The site also has microwave dishes, which provide a site-to-site link, or backbone, for the system.

[4] Based on information provided by RF engineers from various carriers including, Sprint, Verizon, Cingular, T-Mobile.

use variances for NBC's offices and studio space, to which the tower is an accessory use, the Board recognized that:

- "The site is peculiarly shaped and almost land locked by institutional uses...and may not be feasibly developed under the existing zoning; and
- That there are no alternative plans that would result in the economical use of the property..." [5]

which makes it unfeasible for residential development. Therefore, as a property owner, NBC developed its property as a studio, accompanied by a transmission tower, which would enable technically satisfactory and reasonably economical transmission for its operation. The applicant has stated it would become technically inefficient for NBC to accommodate advances in newsgathering at its current location without use of its transmission tower (s) on site. In addition, transmission is economical since all these functions are located on the same property.

Its radio frequency requirements (RF) requires optimal transmission and feedback from important sites in the Nation's Capital, including the White House and it also serves as an important co-location site for public safety communications among various agencies in the District and the metro area, as well as the U.S. Government. The ability of the public safety agencies to co-locate on existing structures relieves these agencies of the need to allocate public funds and find scarce available locations to construct additional transmission towers.

211.7 *If review by the Historic Preservation Review Board or Commission of Fine Arts is required, concept review and approval shall occur before review by the Board of Zoning Adjustment.*

The application does not require reviews by the HPRB or the CFA.

211.8 *No height of an antenna tower in excess of that permitted by the Act to Regulate the Height of Buildings in the District of Columbia... shall be permitted, unless the height is approved by the Mayor.*

The height of the tower was granted approval in 1955 by the Commissioners of the District of Columbia, which predates mayoral appointees.

211.9 *Before taking final action on an application for use as an antenna tower, the Board shall submit the application to the D.C. Office of Planning for review and report.*

The application was timely submitted by the Board for OP's review and report.

211.10 *The applicant shall have the burden of demonstrating the need for the proposed height, and that full compliance with the matter-of-right*

[5] BZA Order 13554– Conclusions of Law and Opinion (11/25/1981)

standards would be unduly restrictive, prohibitively costly, or unreasonable.

§2520 of the Zoning Regulations states that the purpose of the regulation of antennas is to regulate the size, height, construction, design, and location of … antenna structures that have the greatest potential for adverse impact on the health, safety and welfare of the population neighborhood quality, and the scenic beauty of the Nation's Capital. Reviews of past available records do not indicate reasons for the tower's height. However, since the question to be considered in this instance is the tower's continued existence, OP believes that the applicant established the need for the tower's height in its earliest approval by the Commissioners of the District and the most recent decision issued by the Board.

In its most recent decision (BZA #15708-A), the Board concurred that the applicant had shown that the matter-of-right standard for installation of the necessary antennas would be unreasonable at 40 feet. Further, the Board decided that the applicant demonstrated the need for a taller tower as depicted in the Master Plan, which included the 659-foot tower located on top of a proposed 3-story parking structure. However, the parking structure was not built and the newer 1988 tower was built at grade.

OP believes the originally proposed location of the 1988 tower as described in the Master Plan would have appeared taller and would have had a negative impact on the visual aesthetic of the skyline and character of the neighborhood. OP concludes the combined use of both the 1955 and 1988 tower has less impact on the skyline.

Section 3104

Based on the above reasons, OP does not believe that continuation of the tower would harm the intent of the Zoning Regulations and adversely affect the use of neighboring property. The tower has been in continuous use since 1955, predating the Zoning Regulations and continues to be integral to the studio's operation. Based on the studio's needs, the addition of the 1988 tower did not render the subject tower obsolete and it continues to support communication equipment for the studio, as well as public safety communications in support of Homeland Security. While the applicant's Master Plan did not include the 1955 tower, the Board approved the plan's modification (BZA #15708-A) to include the tower's continuance subject to conditions, including:

- The applicant shall grant the National Park Service a permanent scenic easement of a portion of the site consistent with Exhibit No. 48 of the record.
- The applicant shall repaint the 1955 tower a color subject to the approval of the National Park Service.

The applicant informed OP that the deed for the scenic easement will be issued to the Park Service and the tower has recently been painted a muted gray with the Park Service's approval.

At present, there is no increase in office space, number of employees, vehicular and pedestrian traffic, or other uses on the site. There has been no indication on record that the conditions and reasons for approval have substantially changed to discontinue the subject tower's use by the applicant.

COMMUNITY COMMENTS

OP understands that NBC maintains a community liaison for ANC 3E and ANC 3C. While the tower is located in ANC 3E's district, ANC 3C, whose boundaries abut ANC 3E, has also weighed in at previous hearings.

OP understands that ANC 3C is concerned about the impact of electromagnetic frequencies of the tower on residents in the nearby McLean Garden Condominiums and the immediate neighborhood in ANC3C's jurisdiction. OP notes for the record that in its findings of fact in BZA Order 15708 the Board noted "that the regulation of such impacts falls beyond its jurisdiction and must be more properly reviewed and controlled by the appropriate Federal and District government agencies during the licensing process."

Both ANCs have heard the applicant's request at their regularly scheduled meetings held in September 2004 and will issue a report for the hearing.

CONCLUSION

The Office of Planning does not object to the continuation of the existing 1955 lattice tower to accommodate NBC's and local area public safety networks. Whenever possible, co-location of antennas on an existing tower is encouraged to limit the visual intrusion of antennas. The continuation of the tower complies with current and proposed Zoning Regulations[6], which encourage co-location on structures to diminish the adverse visual impact of numerous antennas at various locations within a given coverage area. The tower's presence is not readily visible from public space at grade and it is removed from public right-of-ways thereby ensuring the safety of the public from falling ice and any other mounted structure on the tower's frame. This tower preserves that intent, since OP estimates that the newer 1988 tower would require a substantial height increase to support the additional equipment currently supported by the 1955 tower.

OP concludes that the applicant has sufficiently demonstrated the need for the tower's continuance and that none of the reasons for the Board's approval granted on January 21, 2004, (BZA Order 15708-A) has changed to deny the tower's continuance.

The maintenance of this facility is beneficial to the public good and the special exception may be granted without substantially impairing the intent, purpose, and integrity of the

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[6] **ZC 01-02**: *Text Amendment – Regulation of Antennas, Antenna Towers and Monopoles, February 24, 2003.*

zone plan. Therefore, since the tower complies with the specified criteria of §211, it is deemed consistent with the existing R-1-B zoning.

The Master Plan for the site expires on November 25, 2006. In order to synchronize the 1955 tower with the overall Master Plan, OP recommends that the approval of the continuance be for two (2) years, to expire simultaneously with the Master Plan. This synchronization would not only fulfill the intent of a Master Plan but would also result in administrative efficiency.

Therefore, OP **recommends approval** of the tower's continuance subject to the following conditions:

- Approval shall be for a period of two (2) years from the date of the Order.
- The tower is maintained in a muted gray color to minimize its appearance.
- The applicant, through its Community Liaison, shall continue to meet with neighborhood representatives upon request of Neighborhood Advisory Commissions 3E and 3C.

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