

TELECOMMUNICATIONS TRANSMISSION FACILITY COORDINATING COMMITTEE



**PRINCE GEORGE'S COUNTY
RUSHERN L. BAKER, III
COUNTY EXECUTIVE**

Cover Photo

Last year's report cover photo highlighted the installation of additional and larger antennas on a monopole to enhance coverage and enable LTE technology used to help carriers meet smartphone users' increasing demand for high-bandwidth services. The photo on this year's cover shows a single Verizon Wireless "small cell" antenna recently installed for the same purpose. Antennas like these (which, at approximately 24 inches high, are much smaller than traditional panel-type cell antenna arrays) currently are being placed in high-traffic service areas nationwide.

The antenna featured on the cover is located in a shopping center parking lot at 3500 NW Crain Highway in Bowie. The County GIS image on the left below shows the light pole (on the right in the image) before the antennas and equipment cabinet were attached. The photo on the right below shows the pole as it looks today with the antenna (circled). As these "before" and "after" images illustrate, this type of installation permits signals to target high-traffic areas with minimal visual intrusion in the community.



This type of antenna is generally placed on existing light poles, building facades, or other similar short structures capable of supporting the antennas and the small equipment box mounted below the antennas. In most cases these antennas are capable of covering an area less than one-quarter mile in diameter. (By comparison, a typical cell site with a full array of antennas services an area approximately one to two miles in diameter.)

The TTFCC has reviewed 18 applications to site these kinds of antennas in Prince George's County in recent months. We expect that trend to continue as existing large cell sites become unable to support the capacity required for reliable services. Indeed, the carriers' most recent annual plan updates indicate that many plan to install antennas at new sites close to existing antenna locations in the County.

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1. Introduction

Section 5A of the County Code requires the Telecommunications Transmission Facility Coordinating Committee (TTFCC) to submit an annual report of its activities and an annual Telecommunications Master Plan update to the County Executive and the County Council. This annual report documents the TTFCC's activities and applications reviewed during fiscal year 2015 (FY 15).

2. Executive Summary

The TTFCC received 286 new applications and reviewed 292 applications during FY 15.¹ As of the end of FY 15, the TTFCC had processed a total of 2,562 applications since its inception in 2000.

The vast majority of applications reviewed by the TTFCC in FY 15 were either for co-location of antennas on existing structures or for minor modifications to existing facilities. Only seven of the applications were for new monopoles—most proposed to be constructed for Verizon Wireless on Prince George’s County Public School property pursuant to the Board of Education’s contract with a Virginia-based tower management company.

As required by the County Code, when a new tower is proposed, public notice is sent to nearby community organizations advising them of the application and offering to conduct a public meeting on request. Applicants advised the TTFCC Chair, Michelle Lyons, of six such meetings, all of which she attended as a representative of the TTFCC.

Also in FY 15, the Federal Communications Commission (FCC) issued new rules for processing an application to co-locate antennas on an existing telecommunications facility. The new rules require the County to process all qualified applications within 60 days. The TTFCC processes applications well within those limits.

Application fees collected during FY 15 amounted to approximately \$227,500. The County’s costs for TTFCC activities, excluding indirect County staff time, were \$200,267. These costs were expenditures for outside services provided by a Transmission Facility Coordinator, presently Columbia Telecommunications Corporation.

¹ For a variety of reasons, applications are not always reviewed in the fiscal year in which they are filed. Some of the applications reviewed in FY 15 were filed in FY 14; similarly, some of the applications filed in FY 15 will be reviewed in FY 16.

3. TTFCC Membership

The current TTFCC members are:

TTFCC Chair

- Michelle Lyons, Administrator of Boards and Commissions,
Department of Permits, Inspections and Enforcement

TTFCC Vice-Chair

- Clarence Moseley, Permits Supervisor, Permits Information and Management Section,
Department of Permits, Inspections and Enforcement

TTFCC Members

- Lakisha Pingshaw, Broadband Manager,
Prince George's County Office of Information Technology
- John Ferrante, Acting Planning Coordinator, Permit Review Section,
Maryland National Capital Parks and Planning Commission
- Collette Gresham, Committee Director
Prince George's County Council
- Vincent Curl, Facility Supervisor, Maintenance Department,
Prince George's County Public Schools
- Mary Rea, Planner III, Site/Road Permit Section,
Department of Permits, Inspections and Enforcement

Additional support to the TTFCC is provided by:

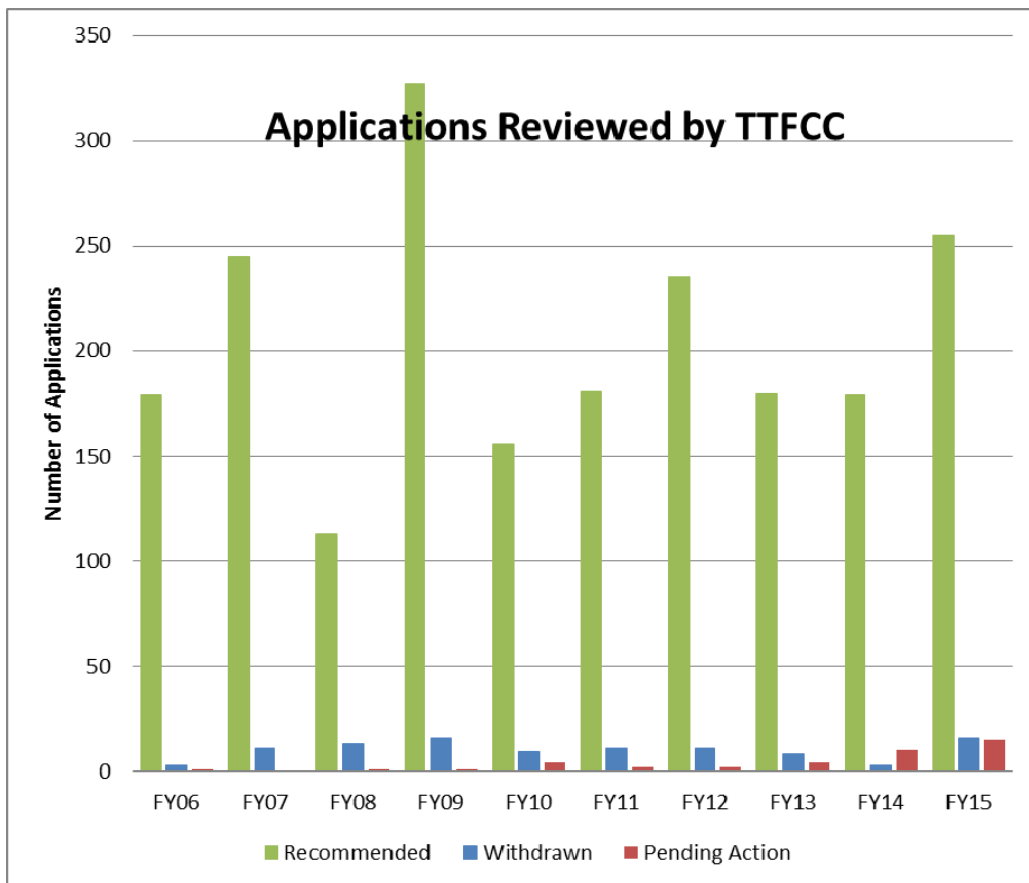
- Jared McCarthy, Associate County Attorney,
Prince George's County Office of Law
- TTFCC Facility Coordinator
Columbia Telecommunications Corporation

4. Background

Applications Reviewed by TTFCC

The TTFCC has been reviewing applications to place wireless facilities in the County since 2000, when the Committee was established by a revision to the County Code. The creation of the Committee anticipated an increase in the placement of wireless facilities in the County—a prediction that, as illustrated by the number of applications the TTFCC has processed, was accurate. Since the TTFCC’s inception, it has processed 2,562 applications, resulting in the placement of antennas at 545 locations in the County.

The table below illustrates the number of applications processed over the past 10 years, through the end of FY 2015.



Types of Support Structures

Antennas are attached to monopoles constructed specifically for mounting antennas, as well as existing tall structures including buildings, water tanks, church steeples, athletic fields including FedEx Field and the Prince George’s Stadium (Bowie Baysox), and most recently, low structures such as gas station canopies.

The majority of antenna placements in the County have occurred on existing monopoles or towers already constructed to support cell antennas. A monopole is a large steel pole, 99 to 199 feet high, constructed specifically to support wireless antennas. The antennas are typically attached to large (15- to 20-foot-wide) triangular platforms vertically spaced approximately 10 feet apart on the monopole. Each platform may have three to 15 antennas attached (one to five on each side of the platform). In some cases the antennas are attached directly to the monopole. The photo on the left below shows two typical monopoles located on the University Baptist Church in College Park.

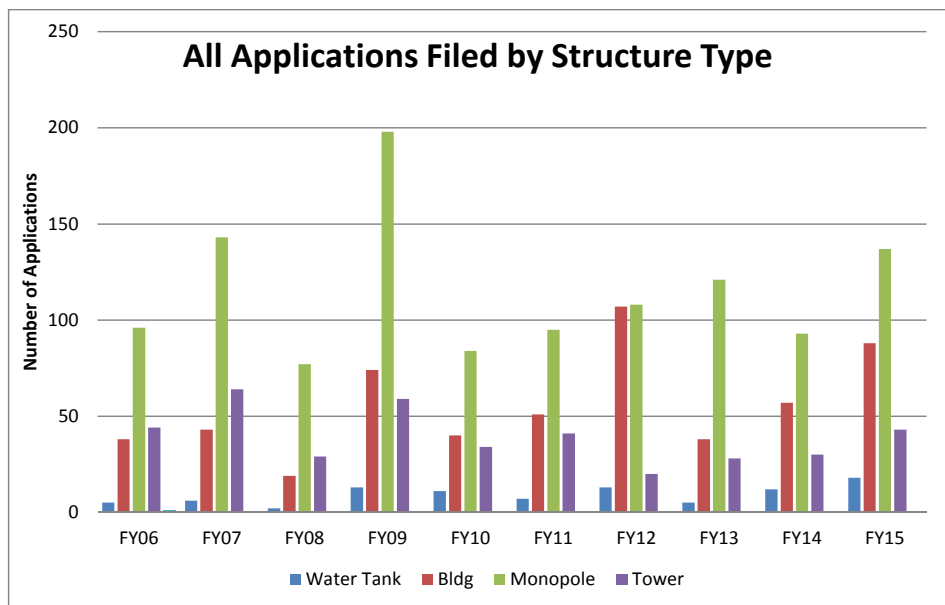
When a monopole reaches its capacity, structural modifications can be made to strengthen the monopole to support additional weight and wind loading. The monopole on the left in the photo below was modified to support additional antennas. Ultimately, however, another carrier wanted to place antennas at the same location—the University Baptist Church in College Park—and even with the structural modifications, the existing monopole reached capacity a second time. Thus, a second monopole, the one on the right in the photo, was constructed at this location.



Towers include existing structures often constructed for other purposes such as those used to support electric utility transmission lines or AM radio broadcasting antennas. Towers can support multiple types of antennas for various communications purposes.

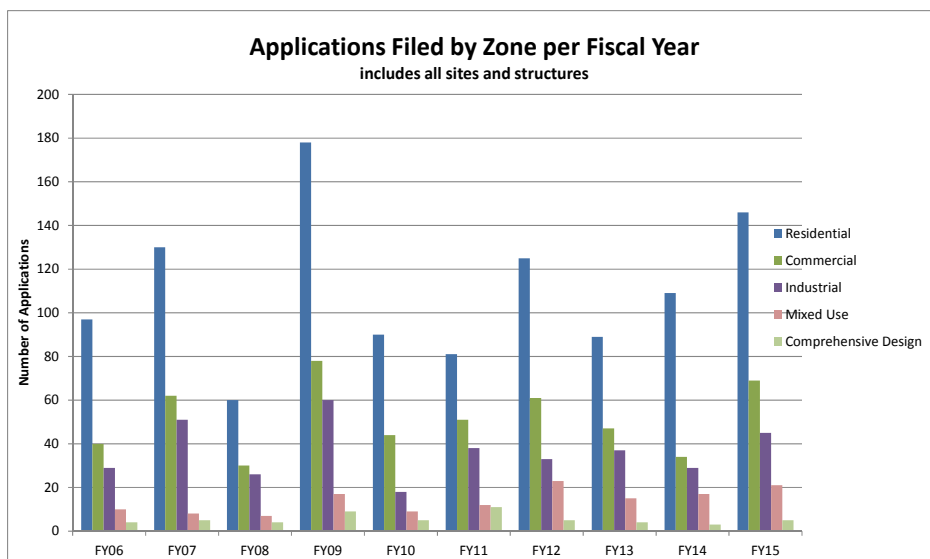
The tower shown in the photo on the right above, which is located at Silver Hill Materials in Clinton, has omni-directional “whip” antennas for land-mobile radio communications, microwave antennas for “line-of-sight” communications links to other antenna sites, and triangular arrays of cell phone antennas.

In Prince George’s County, there are presently 222 monopole sites, 154 tower locations, 149 buildings with antennas attached, and 13 water towers with antennas atop those structures. A majority of those structure support antennas from two or more carriers. The table below shows the number of applications filed in the County by structure type over the past 10 years.



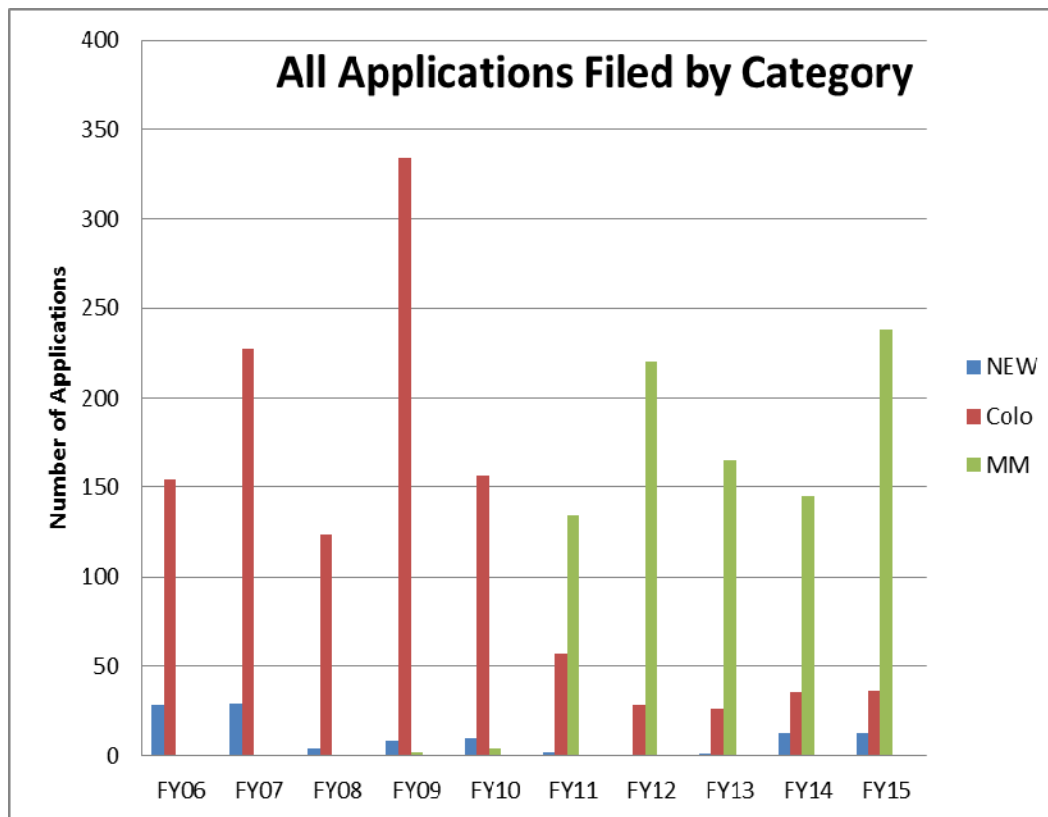
Applications Filed by County Zone

Applicants have placed antennas in nearly all zones of the County, but primarily in residential zones where demand has been the greatest in recent years—especially in the most densely populated areas inside the Beltway. As can be seen in the table below, the percentage of applications in residential areas has steadily grown in recent years, reflecting the carriers’ interest in improving coverage in those areas. Presently there are antennas located at 333 properties zoned residential, 99 in commercial zones, 66 in industrial, 32 in mixed-use, and eight in comprehensive design zones.



5. FY 15 TTFCC Activities

In FY 15, 286 applications were filed with the TTFCC. As the table below shows, the majority of applications in FY 15 (85 percent) and the past several years were for minor modifications to existing antenna sites. Additionally, we note that there were a far greater numbers of minor modification applications in FY 15 compared to FY 14 – 238 to 144 as the carriers accelerate their upgrades to existing sites—deploying new technology to support subscribers’ demand for smartphone applications.

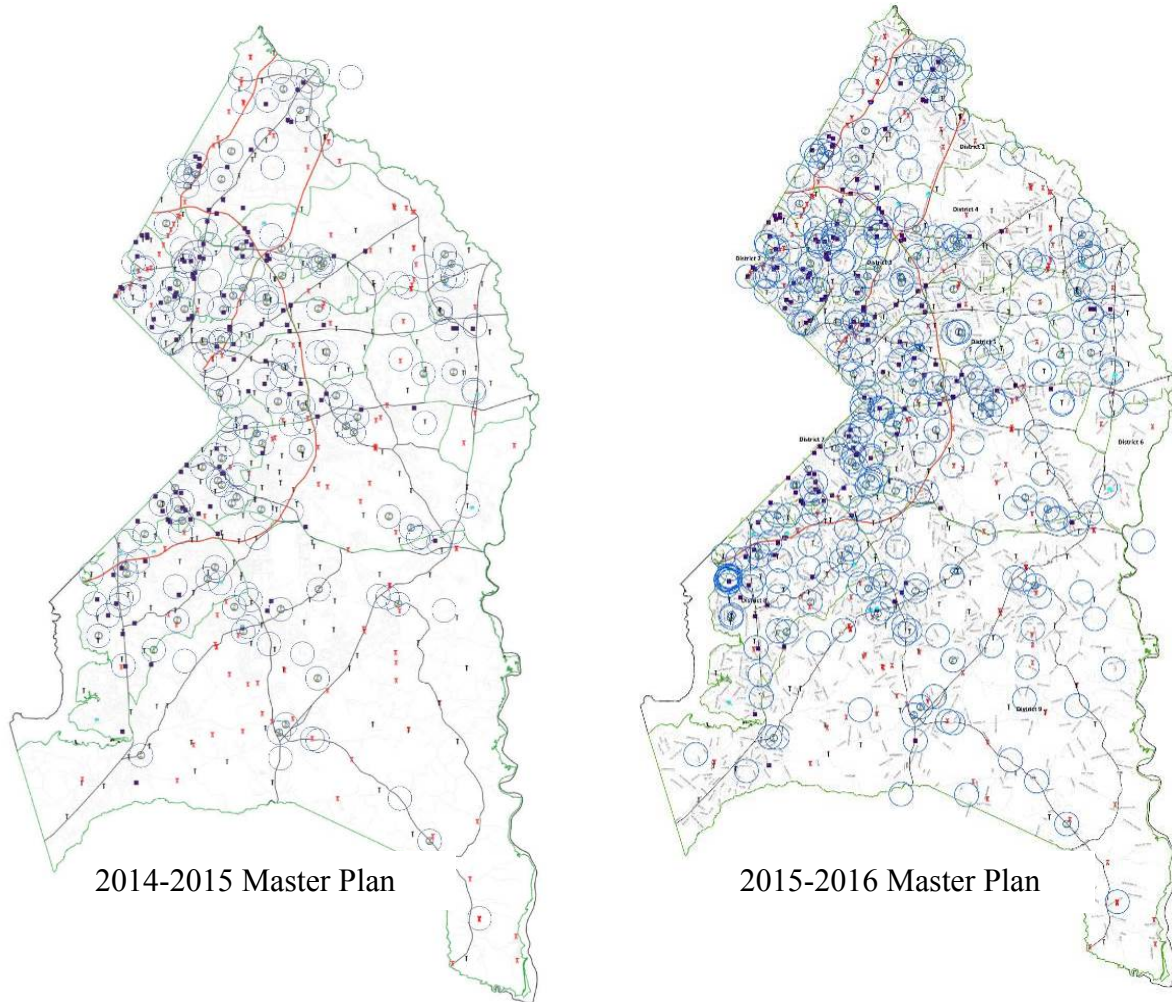


We expect this trend of modifying existing sites and adding small cell “in-fill” sites to continue as the carriers battle for market share. Based on the carriers’ annual plans for new sites, however, we expect to see more co-location applications to in-fill among existing antenna sites with smaller cell coverage areas; this will add capacity to the carriers’ service areas to meet the demand for services requiring higher data capacity.

Based on the carriers’ annual plans filed with the TTFCC to identify proposed locations for new antenna sites, 222 areas in the County have been targeted for potential new antenna sites. Some of those new locations may require the construction of a new monopole to support the antennas. The TTFCC reviewed seven new monopole applications in FY 15, two fewer than in FY 14.

The maps below shows the potential locations for new antennas in the County. The map on the left shows the current plan based on last year’s information about where new antennas might be placed within the next two years. The map on the right is the map to be presented to the County

Council by this October, as required, showing the updated information from the carriers. Clearly the upcoming plan shows many new sites in the County's urban areas within the Capital Beltway, adding capacity to neighborhoods where there is already more coverage than in the rural areas.



There have been several industry changes in the past few years that also lead us to believe that changes to antennas at existing sites will be the predominant type of application filed for FY 16.

First, in January, 2015, the FCC conducted an auction to award spectrum licenses in the “AWS-3” band. This band consists of a variety of spectrum blocks ranging from 1695 MHz to 2180 MHz. In the Washington, D.C. area, AWS-3 spectrum was acquired by Verizon and AT&T. As a result, both Verizon and AT&T filed applications in FY 15 to install antennas covering these new bands at numerous sites around the County. We expect similar applications to continue as these spectrum acquisitions will enable Verizon and AT&T to increase their system capacities.

In March, 2014, AT&T acquired Cricket, along with Cricket's spectrum holdings in the “AWS-1” band. Consequently, the TTFCC has reviewed some applications from AT&T to replace the Cricket antennas with AT&T antennas, which are capable of operating in Cricket's former spectrum bands (1710-1720/2110-2120 MHz).

Finally, as discussed in last year's report, Sprint obtained spectrum in the BRS/EBS band (2496-2690 MHz) and T-Mobile acquired spectrum in the Lower 700 MHz band (698-704/728-734 MHz), and both carriers began installing antennas capable of operating in those bands. The installation of these antennas continued in FY 15, and is expected to continue on into FY 16, enabling Sprint and T-Mobile to continue to expand their network capacities and improve the wireless services they provide in the County. The table below shows the FCC's frequency licenses in the Washington, D.C. area as of the date of this report.

Lower 700 MHz Band

698-704/728-734 MHz (A-Block) – **T-Mobile**
704-710/734-740 MHz (B-Block) – **AT&T**
710-716/740-746 MHz (C-Block) – **AT&T**
716-722 MHz (D-Block) – Not currently licensed
722-728 MHz (E-Block) – **Dish Network**

Upper 700 MHz Band

746-757/776-787 MHz (C-Block) – **Verizon**

Cellular

824-835/869-880 MHz and 845-846.5/890-891.5 MHz (A-Block) – **AT&T**
835-845/880-890 MHz and 846.5-849/891.5-894 MHz (B-Block) – **Verizon**

PCS Band

1850-1865/1930-1945 MHz (A-Block) – **Sprint**
1865-1870/1945-1950 MHz (D-Block) – **AT&T**
1870-1885/1950-1965 MHz (B-Block) – **AT&T**
1885-1890/1965-1970 MHz (E-Block) – **T-Mobile**
1890-1895/1970-1975 MHz (F-block) – **T-Mobile**
1895-1910/1975-1990 MHz (C-Block) – **Verizon**
1910-1915/1990-1995 MHz (G-Block) – **Sprint**
1915-1920/1995-2000 MHz (H-block) – **Dish Network**

AWS-1 Band

1710-1720/2110-2120 (A-Block) – **AT&T**
1720-1730/2120-2130 (B-block) – **Verizon**
1730-1735/2130-2135 (C-Block) – **Verizon**
1735-1740/2135-2140 (D-Block) – **T-Mobile**
1740-1745/2140-2145 (E-Block) – **T-Mobile**
1745-1755/2145-2155 (F-Block) – Not currently licensed

AWS-3 Band

1695-1700 MHz (A1-Block) – Not currently licensed
1700-1710 MHz (B1-Block) – Not currently licensed
1755-1760/2155-2160 MHz (G-Block) – Not currently licensed
1760-1765/2160-2165 MHz (H-Block) – **AT&T**
1765-1770/2165-2170 MHz (I-Block) – **AT&T**
1770-1780/2170-2180 MHz (J-Block) – **Verizon**

WCS Band

2305-2320/2345-2360 MHz – **AT&T**

BRS/EBS Band

2496-2690 MHz – **Sprint**²

² Sprint has access to the entire BRS/EBS band, either through direct licensing or spectrum leases.

6. Administration of the Antenna Siting Review Process

The TTFCC reviewed 292 applications in FY 15, including some not completed in FY 14. As of the end of FY 15 there were 14 applications pending completion which will be reviewed in FY 16. The pending applications include three to co-locate new antennas (i.e., to place antennas on an existing structure where other carriers already have antennas) or modify existing antenna arrays.

TTFCC application filing fees paid to the County in FY 15 were approximately \$227,500. County expenditures for administrative and engineering consulting services provided by the Facility Coordinator amounted to approximately \$200,267.

During FY 15 the Federal Communications Commission (FCC) issued rules governing the County's processing of applications to place or modify antennas at existing antenna sites. The rules were issued by the FCC's authority to administer federal law, which, in this case, includes a provision to preclude local authority from denying any application for co-location of antennas on structures that meet certain criteria.³

The FCC also expanded its prior rules governing the time it takes to process and application for such work, reducing the limits from 90 days to 60 days. The government of Montgomery County, Maryland has appealed the rules on the grounds that the rules are arbitrary and capricious. At the time of this report, we understand that a ruling by the courts may be expected in the fall of 2015. Regardless, the TTFCC has been processing complete and accurately filed applications within 22 days, on average, which is well within the new requirements.

The County process includes a provision for the Chair of the TTFCC to administratively approve applications filed for simple modifications to existing antennas or related equipment. This process permits the applicant to apply for a building permit without having to wait for the next TTFCC meeting at which the full Committee makes a recommendation on each application for. Overall, 243 applications were reviewed administratively in FY 15. This process was in place prior to the FCC's recent rule change, and the TTFCC's processing times were well within the rules.

³ In general the rules apply to applications for antennas at existing structures that already have antennas, as long as the changes to the site do not 1) involve expansion to the use of ground space for the facility, or 2) increase the size of the tower by more than the greater of 10 percent of its existing height or width, or 20 feet.

7. Public Participation

Interested parties may find all general public information about the TTFCC at the Committee's website (<http://www.goprincegeorgescounty.com/Government/BoardsCommissions/tfcc.asp>). Included on the website, once the material is approved by the County Council, is a Master Plan map illustrating all of the carriers' proposed locations for new antennas based on the information the carriers provide the County with each annual update of their future planned antenna sites.

TTFCC meetings are held on the third Wednesday of each month. All meetings are open to the public.

In addition, the County requires that a carrier seeking to construct a new tower or monopole in the County send a public notice to property owners and community organizations within a mile of the location proposed for the structure. The carriers are also obligated to notify the TTFCC Chair of any meetings that are subsequently held in response to those notices.

In FY 15 applicants notified the Chair of the TTFCC, Michelle Lyons, of six community meetings scheduled in response to the notices. Ms. Lyons attended all of those meetings as a representative of the TTFCC.

At each meeting, members of the community expressed some opposition to the proposed new facilities, especially those at public school locations. Some of the objections include concern over harmful RF emissions from the antennas. However, federal law preempts local government from denying a new facility based on public concerns about RF emissions levels—deferring a determination of what constitutes harmful emissions to the FCC, which has established limits on emission levels and guidelines for the carriers to follow. The TTFCC application requires that the applicant state that the antennas comply with the FCC limits.