Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies;	)	WT Docket No. 16-421
	)	
Mobilitie, LLC Petition for Declaratory Ruling	)	
	)	ET Docket No. 13-84
Notice of Inquiry, Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies	)	ET Docket No. 03-137

SUPPLEMENTAL COMMENTS OF MONTGOMERY COUNTY, MARYLAND

Dieter Klinger, Acting Director
Mitsuko R. Herrera, ultraMontgomery Director
Marjorie Williams, TFCG Coordinator
Montgomery County, Maryland
Office of Broadband Programs
101 Monroe Street – 13th Floor
Rockville, MD 20850

Gerard Lavery Lederer
Joseph Van Eaton
Best Best & Krieger, L.L.P.
2000 Pennsylvania Avenue NW,
Suite 5300
Washington, D.C. 20006
(202) 370-5304

Counsel for Montgomery County

March 8, 2017

SUMMARY

Montgomery County, Maryland (the "County"), as part of the Smart Communities Siting Coalition, by its counsel filed comments in WT Docket 16-421.[1] The County files these additional comments to provide the Commission Montgomery County-specific systematic data gathered since 1996. This data reflects the substantial number of wireless facilities applications that Montgomery County has reviewed.

- The County has reviewed 2,900 applications in 20 years, and currently has 1,121 wireless facilities deployed at 534 unique locations throughout the County.
- The County has received approximately 250 Distributed Antenna System ("DAS") and small cell siting applications in the past nine months, and anticipates an additional 500 DAS, small cell, and 5G-related siting applications over the next eighteen months.
- In comparison to these technology-related requests, the County notes that our Department of Permitting Services processes over 60,000 permits and conducts more than 157,000 inspections annually.

Additional declaratory rulings regulating local actions are not required in order to streamline our processes. Commission action to clarify some existing rules[2] and to update its RF emissions standards would be helpful.

---

[1]Comments of Smart Communities Siting Coalition (filed Mar. 8, 2017) ("Smart Communities Comments").

[2] The County supports the clarifications of the Section 6409 rules suggested in the Smart Communities Comments. In our experience, those rules, particularly as applied in residential

The County also presents information demonstrating that Mobilitie has not put forth a reasonable effort to utilize the County's telecommunications siting process. Significant County resources have been expended to help Mobilitie use the County's siting process. Out of the 141 applications received, Mobilitie has submitted only one complete application. In the same time period that the County has been working with Mobilitie, the County has issued seventy-seven (77) other recommendations for approval of wireless siting applications. Furthermore, Mobilitie has submitted applications to install facilities in urban and suburban areas – only one of its applications would install a facility at the edge of a rural area within the County.

Additional empirical evidence from the County's historical database of telecommunications siting applications supports the following conclusions:

- The Commission's *2009 Declaratory Ruling*[3] and *2014 Infrastructure Order*[4] have not improved deployment, nor resulted in increased service to rural areas within the County.
- Deployment continues to be driven by market economics.
- Carriers will build facilities where they can serve the most people.

Lastly, the County requests that the Commission refocus its attention on completing its *2013 RF NOI*[5] proceeding to update the radio frequency (RF) emissions rules by December of

---

neighborhoods, or neighborhoods where all utilities are underground, create unnecessary barriers to developing creative local solutions for wireless deployments.

[3] *Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7) to Ensure Timely Siting Review*, Declaratory Ruling, 24 FCC Rcd 13994 (2009) ("2009 Declaratory Ruling").

[4] *Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, Report and Order, 29 FCC Rcd 12865 (2014) ("2014 Infrastructure Order").

[5] *In the Matter of Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies and Proposed Changes in Commissions Rules Regarding Human*

this year. Montgomery County does not make siting decisions on the basis of health concerns about RF emissions. But the staleness of the Commission's 1996 rules, coupled with significant changes to mobile technology in the past 20 years, adds to the public's anxiety about RF emissions closer to homes as 5G densification pushes deeper into neighborhoods.

Exposure to Radiofrequency Electromagnetic Fields, Notice of Proposed Rulemaking, ET Docket No. 13-84 and ET Docket No. 03-137 (March 29, 2013).

TABLE OF CONTENTS

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies;	)	WT Docket No. 16-421
	)	
Mobilitie, LLC Petition for Declaratory Ruling	)	
	)	ET Docket No. 13-84
Notice of Inquiry, Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies	)	ET Docket No. 03-137

SUPPLEMENTAL COMMENTS OF MONTGOMERY COUNTY, MARYLAND

Montgomery County, Maryland (the "County"), by its counsel, filed comments in WT Docket 16-421 as part of the Smart Communities Siting Coalition.[6] The County files these Supplemental Comments to provide Montgomery County-specific systematic data gathered since 1996 that reflects the substantial number of wireless facilities applications that Montgomery County has reviewed. Against this systematic documentation of timely siting decisions, the County will provide its experience in dealing with 141 incomplete applications from Mobilitie. The County believes that this empirical data, when married with the legal and policy discussions in the Smart Communities Comments,[7] will demonstrate that there is no predicate for action to further expedite treatment for the deployment of next generation wireless infrastructure – by

[6]Comments of Smart Communities Siting Coalition (filed Mar. 8, 2017)("Smart Communities Comments").

[7] *Id.*

further restricting local authority over siting, fees for permitting, or use of the rights-of-way – let alone to do so by means of a declaratory ruling.[8]

The County also believes that the systematic data in these Supplemental Comments will demonstrate:

1. The Commission's "shot clock" and Section 6409 Orders[9] have not made any meaningful difference in bringing wireless service to rural areas within the County.

2. Mobilitie's unsubstantiated claim that "many citizens who lack access to robust wireless broadband reside in urban areas"[10] is not supported by the facts in Montgomery County.

3. Mobilitie's applications demonstrate that it intends to deepen the divide between urban and rural households – only one of Mobilitie's 141 applications is positioned at the edge of the 29 percent of the County set aside as a rural Agricultural Reserve (93,000 acres or 145 sq. miles).

---

[8] *Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies; Mobilitie, LLC Petition for Declaratory Ruling*, Public Notice, WT Docket No. 16-421 (Dec. 22, 2016)("*Public Notice*").

[9] *See, Petition for Declaratory Ruling to Clarify Provision of Section 332(c)(7) to Ensure Timing Siting Review*, Declaratory Ruling, 24 FCC Rcd 13994 (2009) ("*2009 Declaratory Ruling*"), *aff'd City of Arlington v FCC*, 668 F.3d 229 (5th Cir. 2012), *aff'd*, 133 S.Ct. 1863 (2013); *Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Process*, Report and Order, 299 FCC Rcd 12865 (2014)("*2014 Infrastructure Order*"), erratum, 30 FCC Rcd (2015), *aff'd Montgomery County v FCC*, 811 F3,d 121 (4th Cir, 2015). Montgomery was party to appeals of both Orders.

[10] *Promoting Broadband for All Americans by Prohibiting Excessive Charges for Access to Public Rights of Way*, Mobilitie, LLC Petition for Declaratory Ruling, (filed Nov. 15, 2016) ("*Mobilitie Petition*") at p. 3. Mobilitie cites data regarding small cells at Footnote 6, but provides no citation for the claim that urban areas lack broadband.

Finally, as the County explained in a recent ex parte,[11] the Commission must refocus its attention on completing its *2013 RF NOI* proceeding[12] to update the radio reference (RF) emissions rules. Montgomery County residents are deeply concerned about the health effects of RF Emissions.[13] The staleness of the Commission's 1996 rules, coupled with significant changes to mobile technology in the past 20 years, creates a wireless siting challenge that will only grow in time.[14] Moreover, the continuing lack of Commission action may also create the impression that RF emissions is a complex issue for which the Commission does not have a viable resolution. In the absence of leadership by the Commission, residents' concerns about the health effects of RF emissions will continue to grow, and with it, public opposition to 5G

---

[11] *2013 RF NOI*, Letter from Montgomery County Executive Isiah Leggett to FCC Chairman Tom Wheeler, re: Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies (Jan. 17, 2017). *See* Exhibit A.

[12] *In re Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies and Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, First Report and Order, Further Notice of Proposed Rulemaking, and Notice of Inquiry, ET Docket No. 13-84, ET Docket No. 03-137 (March 29, 2013) ("*2013 RF NOI*").

[13] *See e.g.*, Informational Public Meeting on Cell Towers, October 26, 2016, available at https://www.youtube.com/watch?v=6t2Akvl9q54.

[14] The Commission has exclusive jurisdiction to regulate RF emissions. 47 USC § 332(c)(7)(B)(iv): "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." The federal standards are designed to be enforced at the state and local level. The Commission's failure to periodically update the federal rules upsets this balanced approach and undermines public confidence that government regulations will protect the public from harmful impacts of wireless devices. It is unreasonable that the Commission leaves it to local government to explain to constituents why the Commission has not updated its RF emission standards in 20 years, nor completed its work in four years on the *2013 RF NOI* it opened to address this very issue, while simultaneously finding time at the request of industry to consider whether more preemption of local decision-making for small cell deployments is necessary.

deployments deeper into neighborhoods. The County respectfully asks the Commission to exercise leadership on this issue and complete the *2013 RF NOI* by December of this year.

I. MONTGOMERY COUNTY HAS APPROVED THE VAST MAJORITY OF WIRELESS SITING APPLICATIONS IN A TIMELY MANNER

Montgomery County strongly supports the Commission's plan to "accord greater weight to systematic data" versus "merely anecdotal evidence."[15] Too often federal action is focused on creating new rules to address unnamed bad apples, with little attention paid to helping communities that want to encourage access to advanced wireless services for residents and Smart City/Smart County initiatives.[16]

In the late 1990's, in response to increased requests for deployment of telecommunications towers and antennas, the County created the Transmission Facilities Coordinating Group (TFCG) "to promote the appropriate and efficient location and co-location

---

[15] Public Notice at 9.

[16] The County also objects to Mobilitie cherry-picking the facts. The Commission should request systematic data from Mobilitie, presenting all deployments and all costs. The County can point to one lease in which the County pays over $15,000 per month to lease space for public safety antennas, and two for which it pays over $10,000 per month; but these costs are not representative of all of the County's telecommunications leases. Similarly, the Commission states: "According to Mobilitie, the phenomenon of excessive and unfair fees for use of rights of way 'is not confined to a few outlier localities – it exists nationwide.'" Public Notice at 13, citing Mobilitie Petition at 15. The County requests that the Commission require a complete accounting of where Mobilitie has been asked to pay regulatory fees, franchise or similar fees, and fees for use of property owned by municipalities (*e.g.*, streetlights and buildings), and the number of sites in each municipality before placing any reliance on Mobilitie's cherry-picked evidence.

of transmission facilities."[17] Since then, the TFCG has maintained a database of all wireless siting applications.[18]

A. Montgomery County Wireless Recommendations by the Numbers

The TFCG historical database captures the community's 20-year record of new sites, collocations and minor modifications. Systematic data shows that Montgomery County has reviewed 2,900 applications over 21 years, carefully balancing the community's interest in obtaining access to wireless services, with the necessity to protect public health and safety. The County has never faced a lawsuit claiming it has failed to act within the shot clocks specified in federal laws and regulations once a complete application is submitted. Many applications are handled relatively quickly, and those that require longer consideration are handled within the federal deadlines, or in periods agreed to with carriers.

Today, the County has 1,121 wireless facilities[19] deployed at 534 unique locations. The County's vast "Agricultural Reserve" has 76 locations where wireless facilities are deployed, and the other 458 are deployed in suburban and urban areas of the County. On average, there is one wireless facility site every 0.76 sq. miles in urban and suburban areas, and one wireless facility is deployed every 1.91 sq. miles in the County's rural areas.

---

[17] Section 2-53E(b)(3), Montgomery County Code (2014), as amended.

[18] This database is publicly available on the TFCG website and on the County's Open Data platform, found at https://www.montgomerycountymd.gov/Towers.

[19] This figure excludes previous deployments that have been replaced with newer equipment.

A deeper review, presented in TABLE 1 also demonstrates that the County's proactive efforts to encourage collocation have resulted in a super majority – 70 percent – of sites supporting more than one carrier.

TABLE 1: COLLOCATIONS

Percentage of Sites	Number of Carriers Supported by Site
30%	1 Carrier
29%	2 Carriers
22%	3 Carriers
19%	4 or More Carriers

Transparent application review requirements have also allowed applicants to seek siting in ways that conform to community use standards. By working cooperatively to ensure that collocation options are considered, and property setbacks and use standards for specifically zoned areas are met, Montgomery County has been able to recommend 99 percent of completed applications for approval.[20]

[20] 2,382 were recommended for approval while 20 were not recommended for approval.

TABLE 2: APPLICATION DISPOSITION

APPLICATION ACTION	NUMBER
Recommended	2,382
Not Recommended	20
Pending	152
Incomplete	141
Miscellaneous Disposition[21]	8
Withdrawn[22]	197

Furthermore, the County has been able to recommend hundreds of deployments for each of the four major carriers – AT&T, Sprint, T-Mobile and Verizon[23] – whose combined facilities represent seventy-nine (79) percent of all facilities currently deployed in the County.[24]

TABLE 3 FACILITIES OF MAJOR CARRIERS

Current Facilities of Major Carriers	**AT&T**	**Sprint**	**T-Mobile**	**Verizon**
Total Facilities Deployed	193	246	245	204
Oldest Deployment Approval Date	10/11/1996	4/1/1998	10/11/2000	1/5/1997
Newest Deployment Approval Date	1/4/2017	1/4/2017	2/1/2017	2/1/2017

TABLE 4, below, also provides two insights into wireless siting in the County. First, the number of sites the County has authorized on an annual basis has gradually increased over the

[21] Decommissioned tower (1), Duplicate Application (1), Informational Review (5), Required Review Without Approval (1).

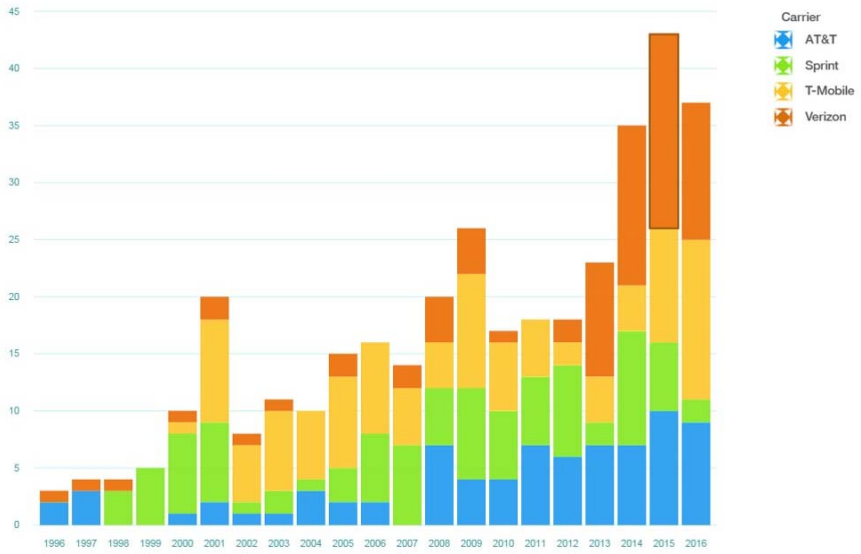
[22] The majority of these applicants never obtained legal permission from the landlord to occupy the property.

[23] This includes their various predecessors, partners, and acquisitions, such as Bell Atlantic, Singular, Nextel, etc.

[24] 888 of 1,121 current wireless facilities.

years. Second, there are surges of applications by carriers in given years as carriers seek to upgrade or densify their respective networks.

TABLE 4: MAJOR CARRIER APPLICATIONS APPROVED BY YEAR



While the surge in applications presents challenges, the County believes that it will be able to process the applications in a timely manner, working with applicants to set mutually agreeable timetables for staging and action on applications when necessary. The surge may, however, require additional resources, which will need to be recouped in either fees for applications, or in the time allotted for action on the applications.

B. The County Handles More Than 60,000 Non-Telecommunications Permits Per Year

For wireless facilities applications that meet zoning standards, upon receiving a TFCG Recommendation, the applicants are treated as any other entity that wants to perform construction within the County – *i.e.*, the applicant must be issued a building permit. In general, permitting regulatory review serves an important public safety purpose. Montgomery County has

a long history of safe construction – whether it is commercial buildings, residential decks, or telecommunications structures – because the County requires all construction to meet established safety codes. Note, as demonstrated by TABLE 3 above, once installed, telecommunications facilities may remain in use for decades. The permitting review process is essential to protect the public welfare. But permitting is also the gateway to growth within the community. Thus, the County seeks a balance between ensuring safety and ensuring a prompt review process.

Mobilitie, and to some extent the Commission, seem to view permitting as a unique requirement applicable to solely telecommunications facilities, or suggest that local governments will not be able to handle new demand for 5G building permits. This is not the case. In 2016, the Montgomery County Department of Permitting Services processed *60,543 permits*, assisted *128,489 customers* in person, reviewed *97,971 plans*, and performed *157,831 inspections*. As reflected in Table 5 below, 2016 is not an anomaly.

TABLE 5 MONTGOMERY COUNTY PERMIT PROCESSING BY YEAR

Fiscal Year	Total Permits Processed	Customers Served at DPS Counters	Information Requests	Plans Reviews	Inspections
2016	60,543	128,489	5,182	97,971	157,831
2015	55,670	110,303	4,684	92,308	157,359
2014	52,826	94,272	4,374	88,317	158,837
2013	50,744	66,600	4,376	84,728	141,443
2012	45,649	59,047	3,260	76,268	113,888
2011	46,481	60,422	2,958	70,656	102,730
2010	46,314	55,974	2,272	64,046	102,889
2009	37,566	55,291	2,290	54,477	103,974
2008	43,048	58,984	2,519	65,491	113,793
2007	43,117	55,988	2,497	63,816	114,692
2006	48,419	56,364	2,884	67,028	135,610

In comparison, in 2016, excluding Mobilitie, the TFCG assisted *a total of nine (9)* telecommunications providers with a total of *265 applications*.

Both the Commission and Mobilitie need to place telecommunications siting in the context of the total development occurring daily in America. Communities like Montgomery County have been handling permitting for 50 to 150 years. There is nothing in the record to suggest that in addition to the more than 60,000 permits the County will issue in 2017, we cannot efficiently handle a few hundred more from telecommunications providers without further regulation from the Commission. If anything, additional regulation may add to the cost of the review process, while bringing no tangible benefits.

C. Batching Creates a Strain on Resources

The County's experience supports the statements in the Smart Communities Comments that receiving hundreds of applications at one time creates challenges for local government review of wireless siting requests.[25] In response to the Commission's *2011 ROW NOI*, the County submitted the information presented below in Table 6 and Table 7 about the cyclical and clustered nature of application filings.[26]

---

[25] *See* Smart Communities Comments, Declaration Andrew Afflerbach, at 23.

[26] *In the Matter of Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facilities Siting*, Notice of Inquiry, Montgomery County Reply Comments, WC Docket No. 11-59, at pp. 14-15 (Oct. 2, 2011)("*2011 ROW NOI*").

TABLE 6: APPLICATIONS RECEIVED BY QUARTER (2007-2011)

Number of Applications Received by Quarter					
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL
FY 2007	44	36	28	47	155
FY 2008	21	12	32	48	113
FY 2009	79	32	26	128	265
FY 2010	42	37	18	26	123
FY 2011	61	36	15	80	192
TOTAL	247	153	119	329	

TABLE 7: APPLICATIONS SUMMITED BY WEEK (NOVEMBER 2009-10)

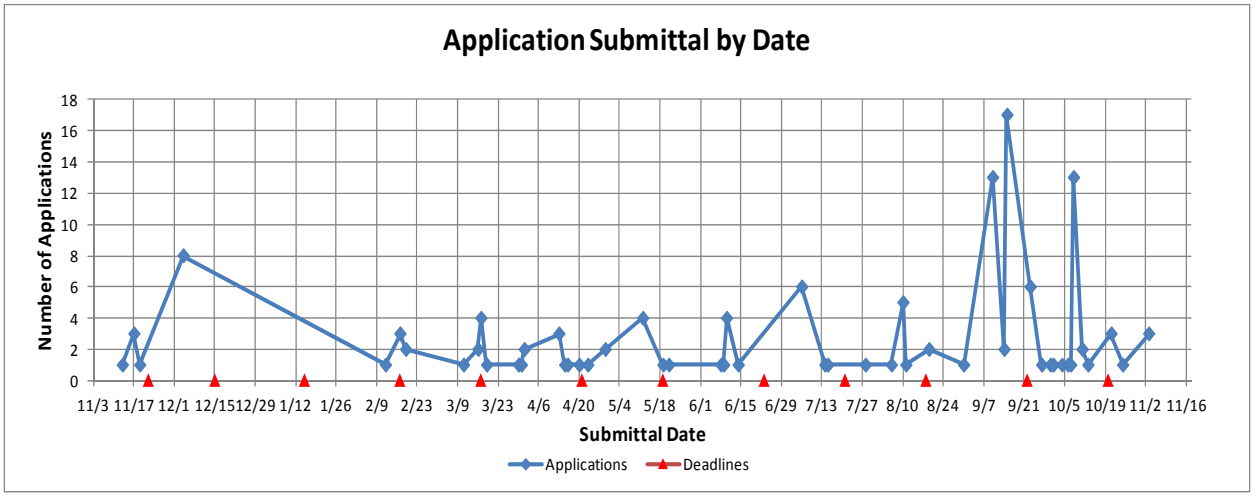
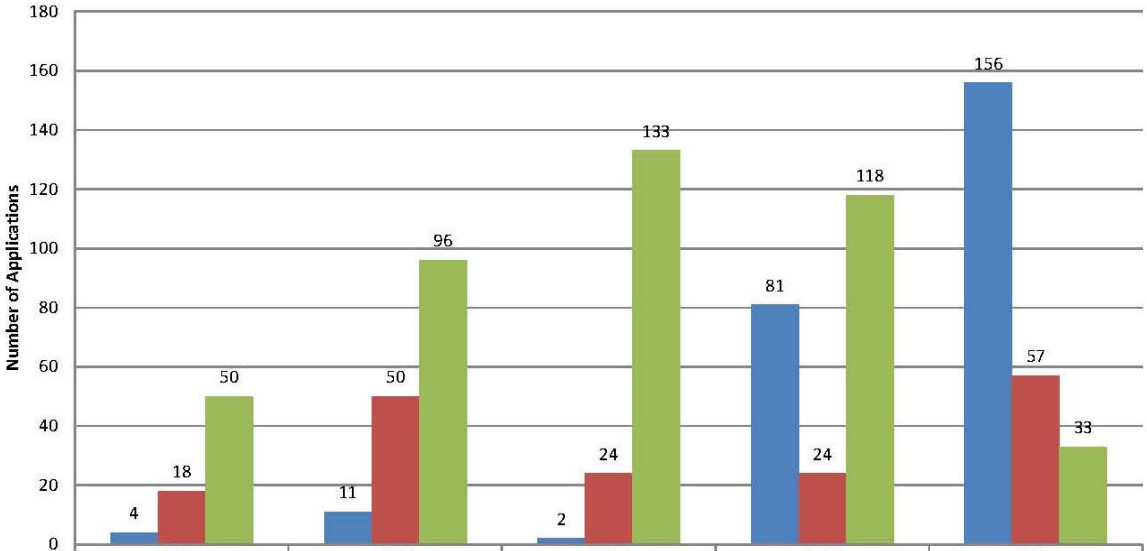


Table 8 demonstrates the recent surge in applications submitted to the County.

Table 8: Applications Received by Year (FY2013-FY2017 Partial)



	FY13	FY14	FY15	FY16	FY17
NEW	4	11	2	81	156
Colo	18	50	24	24	57
MM	50	96	133	118	33

These wild fluctuations in the volume of work make it impractical to use County employees to review applications. Use of contractors allows the County to pay for the volume of service we require. But our contractors must manage their own employee staffing levels. Batching hundreds of applications together that each require individual consideration as to placement, set back limits, and available collocations, will only exacerbate the staffing challenge.

II. A 10 MONTH ODYSSEY AND COUNTING: MOBILITIE HAS NOT PUT FORTH A REASONABLE EFFORT TO USE THE COUNTY'S TELECOMMUNICATIONS SITING PROCESS

As documented above, the County has a rich and successful history of accommodating wireless deployment. Mobilitie's complaints do not reflect problems with governmental processes; rather, in our experience, they are a reflection of problems with Mobilitie's internal processes. The complaints do not justify a declaratory ruling. Carriers need a deliberate and detailed process that is also swift. The fact that the four major carriers, and numerous other

players have been able to have their needs met in a timely manner, and Mobilitie claims it has not, is evidence of the problems with the Mobilitie process, not the County's.

A. Mobilitie Will Take Eight Months to Submit Information Missing from Initial Applications

While the County looks forward to working with Mobilitie to enhance services in our community, it must be stated that Mobilitie has not put forth a reasonable effort to use the County's process. Mobilitie filed 22 incomplete applications on July 29, 2016. The County provided a written Request for Information on August 17, 2016, identifying missing information. As described below, the County engaged in an open dialogue with Mobilitie. Mobilitie did not provide the missing information. On September 30, 2016, Mobilitie filed another 119 incomplete applications. The County provided written Requests for Information between October 9 and November 2, 2016, identifying missing information for each of the 119 incomplete applications. Mobilitie again did not provide the missing information.

By comparison, in the seven months since Mobilitie filed its first set of applications and could have had its applications considered on the September 2016 meeting agenda, the TFCG has issued seventy-seven (77) recommendations for siting for other carriers.

Mobilitie's inability to comply with a well-established and functioning process is even more surprising given the amount of effort the County has put forth to help Mobilitie leverage the County's well-documented process.[27]

[27] All application materials are available at http://www.montgomerycountymd.gov/towers.

1. May 2016

On May 23, 2016, one of Mobilitie's Network Real Estate Specialist first contacts the Department of Permitting Services to request information to file applications to install temporary "cell on wheels" towers, 80 to 100 feet in height intended to operate for 12 to 18 months.[28] The Network Real Estate Specialist was directed to contact the TFCG Chair, informed in writing what would be needed for building permits, and offered a meeting when she had the necessary information. Inexplicably, the Network Real Estate Specialist then submits 50 building permit applications on the same day, May 23, 2016, without the prerequisite information Mobilitie was informed it would need to provide.

2. June 2016

After several back and forth e-mails, the County hosted a conference call on June 2, 2016 to explain the County process to Mobilitie's representative. Mobilitie then asserts a variety of reasons why it thinks it does not need a TFCG recommendation. The County suggests an in person meeting to answer Mobilitie's questions. On June 20, 2016, the County meets with five Mobilitie representatives to discuss Mobilitie's project. Mobilitie sends follow-up e-mails asking for information about what is needed for collocation applications and what is needed for new installations.

[28] *See e.g.* Email from Montgomery County's Simin Rasolee to Mobilitie Network Real Estate Specialist, May 26, 2016.

3. July 2016

On July 8, 2016, Mobilitie suggests a third meeting. A series of e-mails is exchanged answering Mobilitie's questions. Mobilitie sends a sample application on July 11, 2017. After further back and forth, Mobilitie submits a revised sample application on July 12, 2017. Mobilitie lists no carrier that will use the Mobilitie facilities, which leaves the TFCG with no information to determine what effect Mobilitie's facilities will have on existing telecommunications facilities, whether there are gaps in service that must be met, whether collocation can serve Mobilitie's service objectives, and what impact Mobilitie's proposed service will have on the surrounding area.[29] The County determines that it will allow Mobilitie to file County applications without carrier information and the TFCG will make its decision based on the limited information provided.

On July 29, 2016, Mobilitie files 22 more applications with the TFCG. On the same day, Mobilitie notifies the County that it is transferring its CLEC authority to its wholly-owned subsidiary, Technology Maryland Network Co. As a result, Mobilitie is required to obtain a transfer of its franchise agreement and to obtain revised bond and insurance certificates. An entity applying to place transmission facilities in the right-of-way must have a legal right to occupy the right-of-way. If the new subsidiary is going to obtain the TFCG recommendations, it must hold the right-of-way franchise.

---

[29] *See* COMCOR 02.58E.01.05.a.2.

4. August 2016

A series of communications commences in which Mobilitie asks that Permitting Services and TFCG process the Mobilitie applications without having an approved right-of-way franchise agreement or revised bond and insurance certificates. The County stands firm that legal permits must be issued to the actual legal party in interest. On August 16, 2016, Mobilitie requests a street map of Montgomery County. On August 17, 2016, the County sends Mobilitie a Request for Information, stating in writing what information is missing. Mobilitie provides no response. By the end of August 2016, Mobilitie has obtained the proper bond and a franchise agreement has been submitted for County Council approval.

5. September 2016

The TFCG issues sixteen recommendations for approval to other carriers.

On September 2, 2016, Mobilitie submits a second batch of TFCG applications. The County reaches out to Mobilitie because the Mobilitie cover letter states that Mobilitie is submitting 115 applications, but only 102 applications were received and payment was provided for 103 applications. Mobilitie informs the County on September 6 that they will be sending an additional 22 collocation applications and asks the County to go through the 103 applications and inform Mobilitie which applications are missing. The County reviews the Mobilitie applications and informs Mobilitie that five applications were submitted without application fees. Additional telephone calls and e-mails are exchanged, but none of the missing information is provided. On September 27, 2016, the County Council approves transfer of Mobilitie's right-of-way franchise to its subsidiary.

6. October 2016

The TFCG issues fifteen recommendations for approval to other carriers.

On October 3, 2016, the County informs Mobilitie that two applications for other jurisdictions have been mistakenly filed with the County and need to be filed in the proper jurisdictions. On this same day, Mobilitie files two more TFCG applications. Between October 9 and November 2, 2016, the County provides Requests for Information for 116 applications, stating in writing what is missing. On October 24, 2016, Mobilitie provides a revised Certificate of Insurance to Permitting Services.

On October 31, 2016, Mobilitie informs the County that a new Network Real Estate Specialist will be taking over responsibility for the Montgomery County applications.

7. November 2016

The TFCG issues ten recommendations for approval to other carriers.

On November 1, 2016, the County holds a conference call with the new Mobilitie representative. Mobilitie requests that all applications for new structures be placed on hold and tells the County that Mobilitie will decide over the next few weeks how to proceed with the new structure applications, but requests to move forward with its collocation applications. On November 10, 2016, the County contacts Mobilitie to inquire when the missing information from the collocation applications (first requested on August 17, 2016) will be provided. The County suggests a conference call to move forward.

On November 23, 2016, a conference call is held with five parties. The Mobilitie engineer on the call states that he has never seen the County's Request for Information. The new

Network Real Estate Specialist states that he will forward the Request for Information to the engineer. Mobilitie also informs the County that they are no longer going to pursue installing new structures at approximately 25 locations. The County summarizes the call and agreed upon actions in an e-mail, including: the County's offer to set a meeting for Mobilitie with the TFCG senior engineer; Mobilitie's pledge that it will provide a list of the sites they no longer wish to pursue; and that Mobilitie will submit the Request for Information responses by December 15, 2016. In response to this e-mail, a Mobilitie engineer informs the County that Mobilitie will file complete applications within two weeks, and the new Network Real Estate Specialist provides the list of sites that Mobilitie will no longer pursue.

8. December 2016

The TFCG issues eight recommendations for approval to other carriers.

On December 6, 2016, the County hosts a conference call with nine parties to discuss the still missing application information. Once again, a Mobilitie engineer on the call states that he has not seen the Request for Information. The County suggests that Mobilitie try to focus on submitting applications for ten locations of their choosing. On December 28, 2016, the new Network Real Estate Specialist submits ten collocation applications. The County determines on the same day that the applications do not contain the missing information and are less complete than the original applications.

9. January 2017

The TFCG issues fifteen recommendations for approval to other carriers.

On January 6, 2017, the County informs Mobilitie that the applications remain incomplete. On January 24, 2017, the County sends Mobilitie an e-mail noting that Mobilitie has not followed through on previous promises to provide the missing information within two weeks, and suggests a conference call to discuss how to move forward. On January 27, 2017, the County provides a third Request for Information, itemizing everything that is missing from the subset of ten applications resubmitted by Mobilitie in December 2016. A conference call is scheduled for February 9, 2017.

10. February 2017

The TFCG issues three recommendations for approval to other carriers.

On February 9, 2017, a conference call is held with eleven parties. Mobilitie agrees to submit one complete application for review before resubmitting additional applications. Mobilitie suggests that it continue to work on the applications with no specific target date to submit the missing information. Having spent eight months working with Mobilitie to get complete applications, the County informs Mobilitie that because of the length of time since the initial submission, the multiple reviews, and resources required to continually re-review applications, the County would like to close out this matter and consider the applications withdrawn; Mobilitie could refile the applications with payment of new filing fees when Mobilitie is ready to move forward. Mobilitie tells the County it will discuss the matter internally. On February 10, 2017, Mobilitie and the County have a conference call and Mobilitie agrees to provide complete applications by April 30, 2017, or it will resubmit applications with new filing fees. On February 16, Mobilitie submits one collocation test application. On February 24, 2017, the County informs Mobilitie that the test application is complete.

11. March 2017

The TFCG issues ten recommendations for approval to other carriers.

B. Mobilitie's Actions Demonstrate How Representatives of Carrier Host Companies Can Increase Costs for All Applicants

Mobilitie spent two months discussing application requirements with the County and will take another ***eight months*** to provide information required for it applications. Mobilitie had complete control over the timing of its submissions. Based on the one complete application, the County believes that Mobilitie should be able to submit complete applications for deployments within Montgomery County. The fact remains that the process has required immense amounts of staff time and resources. When costs are calculated and reviewed in relation to fee payments received, work required to assist companies or representatives like Mobilitie can drive up overall average costs. In its *2009 Declaratory Ruling* and *2014 Infrastructure Order*, the Commission imposed timelines for local government action, but failed to address how carriers may contribute to the problem by providing incomplete or inaccurate information. Furthermore, the Commission did not address how unprepared carriers may be driving up the costs for well-prepared carriers.

Mobilitie states that it has filed "thousands of applications for permits or franchises in 50 states."[30] Given Montgomery County's experience, the County respectfully suggests that the Commission request from Mobilitie copies of any correspondence relating to the completeness of its applications. If the great majority of their applications were returned as being incomplete, one must determine if this is inconsistent training of a few front-line representatives, willful

[30] Mobilitie Petition at 13.

refusal to comply with any process, or a systematic effort to artificially create the perception that it takes a long time for applications to be reviewed.

III. MARKET FORCES, NOT FCC RULINGS, HAVE AND WILL CONTINUE TO DRIVE DEPLOYMENT IN MONTGOMERY COUNTY

The Commission's *2009 Declaratory Ruling* has had no discernable impact. The demand for wireless deployments in Montgomery County has been primarily driven by market and technology factors, not regulatory changes. As stated in the Smart Communities Comments, local public-private collaboration has proven to be the best way to speed deployment.[31] Montgomery County's experience supports this premise. The County enacted a zoning ordinance to encourage collocation and deployment, and created an incentivized zoning classification in areas where reasonable setback and height requirements could be met. It resulted in a streamlined process that balances everyone's interest in expanding access to advanced networking services and protecting public safety, without sacrificing community-specific aesthetic concerns.

A. Federal Regulatory Changes Have Not Resulted in Increased Service to Rural Areas

Montgomery County's experience indicates that changing regulatory policies or further restricting local authority will not solve the problem of inadequate broadband deployment in rural areas. Over one-third of the land mass of the County is designated as an Agricultural Reserve.[32] Housing density in this area is 17 housing units per square mile, where as it is

---

[31] Smart Communities Comments, Declaration Andrew Afflerbach, at 23.

[32] *See* "Agricultural Reserve in Montgomery County" available at http://www.montgomerycountymd.gov/agservices/Resources/Images/mcagreservemap.jpg and

1,117 per square mile in other areas of the County. Incomes and home values are similar to other areas of the County. As a result, the County is a living laboratory that demonstrates that both wireline and wireless broadband telecommunications deployment will flow to the areas with the largest concentration of people.

Montgomery County, like Chairman Pai, agrees that wireless broadband is important to modern agriculture.[33] The County's Innovation Program is supporting pilots to expand broadband applications in farming. The County's Office of Agriculture is using digital communications to connect farmers to "farm-to-table" restaurants and residents interested in Community Support Agriculture (*i.e.*, farm shares).[34] The County is working in creative partnerships to expand wireline broadband.[35] And our school-aged children should not have to choose between being able to do their homework, or continuing the County's agricultural heritage. But as demonstrated herein, more federal preemption of local authority is not going to bring more broadband to rural areas; nor is Mobilitie planning to bring more broadband to rural Montgomery County.

---

visit the County's Office of Agriculture for general information http://www.montgomerycountymd.gov/agservices/.

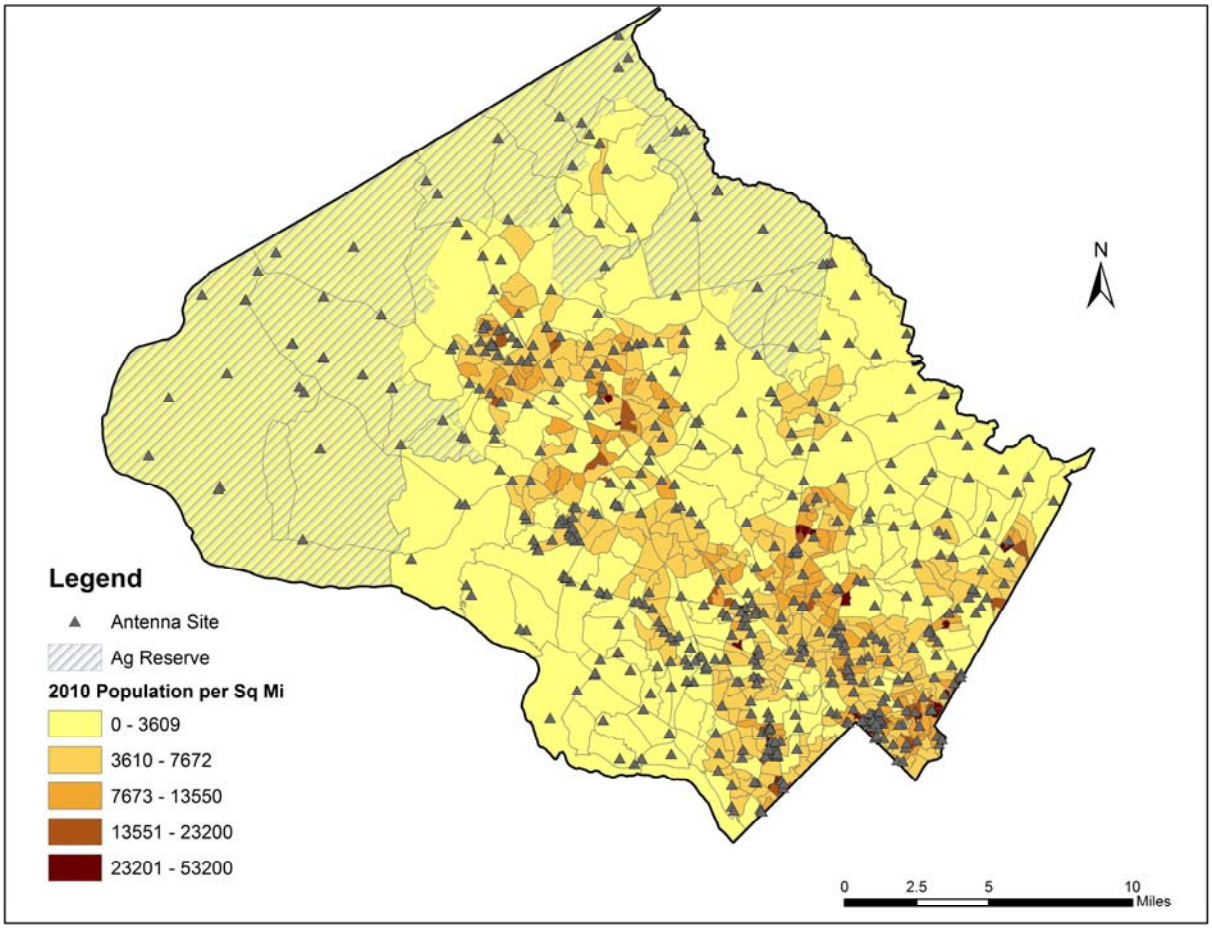
[33] Remarks of FCC Commissioner Ajit Pai at the Bandery, "Digital Empowerment Agenda," Cincinnati, Ohio ("Pai Digital Empowerment Agenda Speech")(September 13, 2016) ("But the benefits of wireless broadband in rural America extend far beyond that. Take precision agriculture. High-speed wireless connections can make America's farms more productive and efficient. Not long again, I had the chance to visit Clear Meadow Farm, in a rural part of northern Maryland. I saw first-hand how machine-to-machine communications, GPS-controlled combines, and remote weather and soil sensors – all powered by wireless connections – can transform our nation's agriculture industry.")

[34] *See* http://www.montgomerycountymd.gov/agservices/.

[35] *See e.g.* Fn 41 *supra*.

FIGURE 1 below supports the statement made in the Smart Communities Comments: "The fundamental dynamic of broadband investment is that network deployments and upgrades are capital intensive and capital flows to areas where projected returns are greatest because demand is most concentrated and per customer costs lowest."[36] The majority of sites were created in the most densely populated areas of the County. In addition, as TABLE 1 demonstrated, seventy (70) percent of sites have more than one carrier. There are more carriers collocating at sites in the densely populated areas.

FIGURE 1: ALL WIRELESS FACILITIES DEPLOYMENT SITES

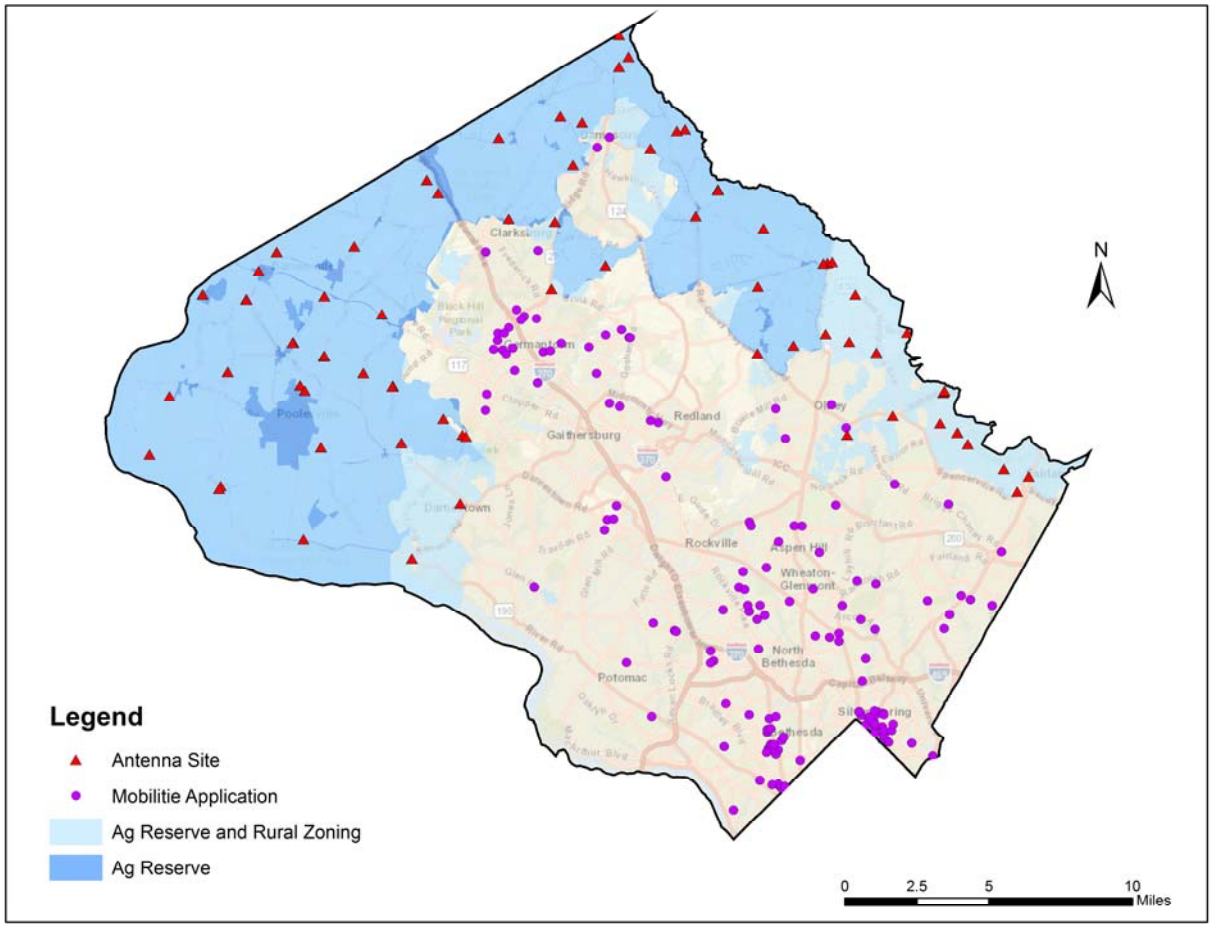


[36] Smart Communities Comments, Affidavit of Andrew Afflerbach, at 22.

Furthermore, the Mobilitie applications filed in Montgomery County support the statement in the Smart Communities Comments that: "It is deeply misleading to suggest that 'streamlining' processes for reviewing small cell deployments will lead to increased buildout in rural areas—because such processes and fees are limited or non-existent in those areas already, and the technology is not well-suited to rural areas."[37] As FIGURE 2 demonstrates, Mobilitie's deployments will not provide much of any additional wireless broadband service to the rural areas of the County.

[37] Smart Communities Comments, Affidavit of Andrew Afflerbach at 19.

FIGURE 2: MOBILITIE PROPOSED SITES AND OTHER RURAL DEPLOYMENT SITES

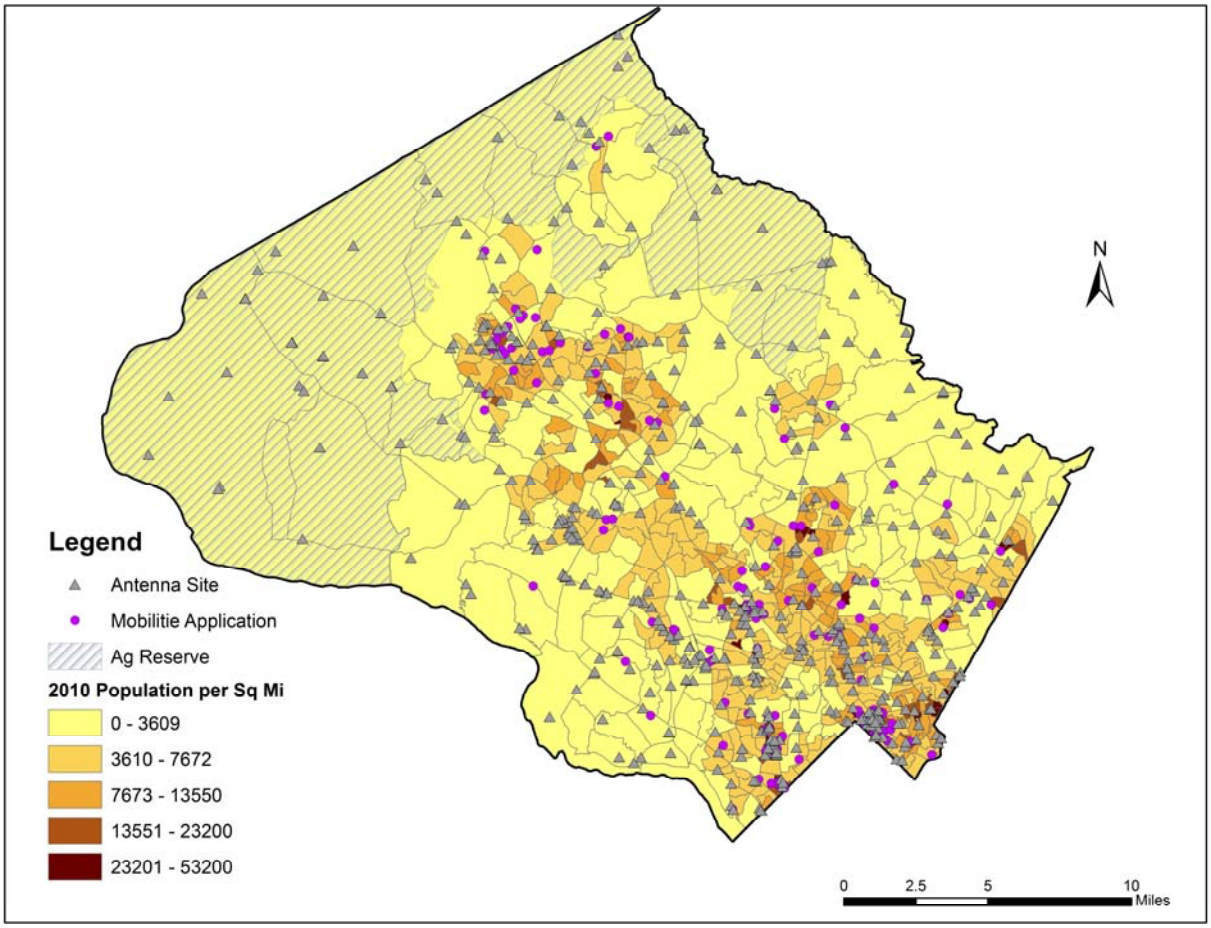


Mobilitie claims that 5G small cell and DAS deployment will bring broadband deployment to all Americans.[38] But as Mr. Afflerbach wrote in his affidavit, this is deeply misleading. Only one

[38] *See generally*, Mobilitie Comments at 3 ("Removing obstacles to deploying small cell networks in rights of way is particularly important because the wireless broadband those networks deliver will play a vital role in closing any gaps in nationwide broadband deployment."); at 4 (rights of way "now can serve the public by making broadband, the newest essential service, available to all"); at 6 (achieving "FirstNet's vision" to support public safety communications "in cities and rural communities across America" "will depend on dense deployments of many sites across localities"); at 7 ("Rights of way are also the key to expanding the availability of robust broadband to all Americans."); and at 9 ("federal telecommunications policy has been designed to increase the availability of wireless broadband (including 5G) to meet the needs of all Americans.")

of Mobilitie's 141 applications seeks to site a facility in a rural area.[39] And unfortunately for the residents, businesses and farms in the County's Agricultural Reserve, as FIGURE 3 illustrates, Mobilitie's applications, like eighty-six (86) percent of other sites hosting wireless facilities, are seeking to deploy to serve the most densely populated areas of the County.

FIGURE 3: MOBILITIE PROPOSED SITES AND ALL OTHER SITES



[39] The one site is located a few feet over the zoning boundary and is thus technically located within a rural zone.

B. Deployment Continues to be Driven by Market Economics

Montgomery County is fortunate to have the characteristics that are attractive to providers:

- Densely populated housing
- Strong home values
- Reasonable construction costs (which is also driven by the number of potential users per site deployment)
- A significant number of residents and businesses that use wireless technology

Montgomery County has significantly more wireless deployments than the average county. The County believes that the reasonable regulatory practices the County has put into place facilitate access to robust wireless services. They serve to make the County more attractive. The lack of deployment in the rural parts of the County suggests that regulatory practices are not the controlling factor – capital flows where demand is most concentrated and per customer costs lowest place to deploy.

The FCC cannot preempt the rules of economics or physics. If wireless carriers cannot make a business case in rural areas today because there are too few customers to support the deployment costs, then 5G deployments which may cover smaller areas and require more densely deployed facilities, will only exacerbate that challenge. Subsidies[40] and creative public-private partnerships will continue to be necessary to change the market equation and render rural areas sufficiently attractive.[41]

---

[40] *See generally*, Pai Empowerment Agenda Speech at 4.

[41] Montgomery County and Comcast have engaged in a partnership to expand broadband deployment in the Agricultural Reserve. The County worked with residents to obtain commitments that more than 65 percent of residents in a pilot area would sign up for broadband

IV. PUBLIC SUPPORT FOR ADVANCED DEPLOYMENT OF 5G WIRELESS SERVICES REQUIRES THE COMMISSION TO COMPLETE ITS 2013 PROCEEDING TO UPDATE THE RF EMISSIONS RULES

The elected leadership of Montgomery County has already shared with the Commission by means of an ex parte[42] the constant and growing concerns of members in our community with the health effects of RF emissions. The Commission's failure to act on RF rulemakings is resulting in growing public concern and potential opposition to 5G deployments in residential neighborhoods. The Commission has exclusive jurisdiction to regulate RF emissions. The Commission should not be dedicating scarce staffing resources to contemplating whether to take further action to preempt local government authority while the Commission has unfinished work that has been languishing for four years in the *2013 RF NOI*.

On October 26, 2016, the County Council hosted a public meeting to discuss small cells and anticipated densification of networks in neighborhoods. In addressing the importance of public acceptance of 5G deployments, former Chairman Tom Wheeler stated, that the Commission needs to "to help leaders at the local level" help the public understand the benefits of 5G.[43] The entire meeting is available online.[44] The County has also edited together the questions residents asked about RF emissions. Residents were particularly concerned about how

---

service. In exchange, Comcast agreed to waive construction charges that would have required individual residents to pay $2,000 or more to receive service.

[42] *2013 RF NOI*, Letter from Montgomery County Executive Isiah Leggett to FCC Chairman Tom Wheeler, re: Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies (Jan. 17, 2017). *See* Attachment A.

[43] Remarks of FCC Chairman Tom Wheeler, CTIA Super Mobility Show 2016, Las Vegas (Sept. 7, 2016).

[44] Informational Meeting on Cell Towers, October 26, 2016, available at https://www.youtube.com/watch?v=6t2Akvl9q54

close these new antennas would be deployed to their houses and children. These questions include:

- Rick Popovitch: “Why does it have to be in residential areas when these same towers can be put in other areas that are non-residential, not with the proximity of children and others.”
- Sonya Beakman: “I would like just a simple explanation, why concentrating all this energy is not going to further *increase* the health risks?”
- Peter Chung: “The World Health Organization has categorized these RF signals as level 2 or class B carcinogenic.”
- Lisa Klein: “Let’s set a precedent for precautionary safety measures to protect the people.”
- Bob Salwani: “It’s likely to cause DNA damage, it’s likely to cause cancer, specifically brain cancer, and more specifically in children. The County has to be responsible for ensuring there are no longer term health effects of these frequencies on kids.”
- Debra Hines: “Why can’t we do a health assessment here and find out what the real health effects are ***to our children***?!”
- Unidentified Man: “You blew off that health thing, that’s the first thing you said, ‘that there are studies, you can go look at them.’ Well that’s the main concern of everybody in this room!”
- Jim Sledge: “If you go through with these installations, my grandson will have an antenna 35 feet from his bedroom.”

- Vasilis Maginis: "But still the question remains, why [does] this thing have to be right outside my bedroom window? That's the basic question! And you hear health studies, you hear depreciation of the houses – nobody wants it!"

In response, Montgomery County staff held several meetings with staff from U.S. Representative John Delaney's office to determine how best to address residents' concerns about RF emissions in light of the fact that Congress: gave exclusive authority to establish RF emission standards to the Commission; prohibited local governments from basing wireless facility siting decision on RF emissions (except to the extent that local governments enforce the federal standards enacted by the Commission); required that local government regulations "shall not prohibit or have the effect of prohibiting the provision of personal wireless service;" and required that local governments "approve, any eligible facilities request for a modification of an existing tower or base station that does not substantially change the physical dimension of such tower or base station." But also, that the Commission, has not updated the RF emissions standards since 1996.[45]

Montgomery County does not make siting decisions on the basis of health concerns about RF emissions. But acceptance of reasonably managed wireless deployment by the public is important. And the message from the October 26, 2016 public meeting to local officials was residents want their local elected officials and federal representatives to do much more to get federal agencies to act in this area. After further research, the County determined:

[45] *See* 47 USC §§332(c)(7)(b)(i)(II) and 332(c)(7)(b)(ii); 2013 RF NOI at ¶ 5.

- In 2012 the GAO Commission had recommended that the "FCC formally reassess and, if appropriate, change its current RF energy exposure limit and mobile phone testing requirements." The GAO felt that the Commission's standards did not adequately address what happens to the body when phones are used close to the body. The GAO further stated: "By not formally reassessing its current limit, FCC cannot ensure it is using a limit that reflects the latest research on RF energy exposure."[46]

- Almost four years ago, on March 29, 2013, the Commission opened a proceeding to address changes in the RF emissions standards related to human exposure, "received nearly a thousand comments totaling more than 20,000 pages,"[47] but had taken no further action to complete its review of its RF emission rules and determine if any updates were necessary.[48]

---

[46] United State Government Accountability Office, Report to Congressional Requestors, *TELECOMMUNICATIONS: Exposure and Testing for Mobile Phones Should Be Reassessed*, GAO-12-1771 (July 2012). The GAO recommended: "FCC formally reassess and, if appropriate, change its current RF energy exposure limit and mobile phone testing requirements related to likely usage configurations, particularly when phones are held against the body."

[47] Letter from Federal Communications Commission Chairman Wheeler to U.S. Senator Richard Blumenthal (Nov. 24, 2015) available at http://eshoo.house.gov/issues/economy/eshoo-blumenthal-urge-fcc-to-enforce-exposure-limits-for-those-who-work-near-wireless-towers/ ("*Eshoo Blumenthal Letter*").

[48] *See 2013 RF NOI* at ¶ 5: "*Inquiry*. We initiate a new proceeding with a *Notice of Inquiry* to determine whether there is a need for reassessment of the Commission radiofrequency (RF) exposure limits and policies. The *Inquiry* focuses on three elements: the propriety of our existing standards and policies, possible options for precautionary exposure reduction, and possible improvements to our equipment authorization process and policies as they relate to RF exposure. ***We adopted our present exposure limits in 1996***, based on guidance from federal safety, health, and environmental agencies using recommendations published separately by the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers, Inc. (IEEE).[48] Since 1996, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) has developed a recommendation supported by the World Health Organization (WHO), and the IEEE has revised its recommendations several times, while the NCRP has continued to support its recommendation as we use it in our current

- Three years ago, in response to the *2013 RF NOI*, members of the Smart Communities Coalition called attention to concerns of having more wireless infrastructure sited closer to homes and people: "Unlike early cell tower deployment, today's new repeater network technologies are deployed in closer proximity to users. As such, ***potential exposure comes*** not from the receiving device – the phone – but rather ***the transmission device***."[49]

- Two years ago, in February 2015, Congress asked the Commission to complete the *2013 RF NOI* proceeding. U.S. Senator Richard Blumenthal and U.S. Representative Anna Eshoo were concerned about worker exposure on rooftops when working within mere feet of wireless facilities, given that RF emissions are strongest within a few feet of the antennas.[50]

- Two years ago, in 2015 in response to the Congressional letter, then-Chairman Wheeler stated that he had directed his staff to prioritize this proceeding. Yet no further action was taken during the final two years of Chairman Wheeler's term as Chairman.

On January 17, 2017, Montgomery County Executive Isiah Leggett sent a letter to the Commission, asking that the Commission take action to complete its work on the *2013 RF NOI*.[51] No further action was taken by the Commission to update or confirm current RF emissions

---

rules. ***In the Inquiry, we ask whether our exposure limits remain appropriate given the differences in the various recommendations that have developed and recognizing additional progress in research subsequent to the adoption of our existing exposure limits.***" (emphasis added).

[49] *2013 RF NOI*, Reply Comments of the Cities of Boston and Philadelphia (Nov. 18, 2013) at 3 (emphasis added).

[50] *See* Eshoo Blumenthal Letter.

[51] *See* Exhibit A.

standards. Rather, at the request of Mobilitie, the Commission released the *Public Notice*, to determine whether further prohibitions on local governments collecting compensation for right-of-way use should be considered, whether local governments review siting applications in a reasonable period of time, and whether local government rules have the effect of prohibiting the provision of service.

At the very least, before imposing additional "speed up" obligations on local governments, and given the years the Commission has had to review information submitted in the *2013 RF NOI* docket, the Commission should complete the revision of its RF emission rules.

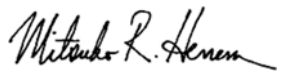
V. CONCLUSION

The County urges the Commission to exercise leadership where it has exclusive authority and complete work on the *2013 RF NOI* by December of this year. There is no need for a further declaratory ruling by the Commission. Systematic data presented by the County herein demonstrates that federal declaratory rules have little impact on deployment overall, and do little to spur deployment in rural areas.

Local governments work every day to develop public-private partnerships to promote broadband deployments in ways that do not sacrifice community interests. The Commission should work to promote public acceptance of 5G technology by addressing the community

concerns about the health effects of RF emissions as soon as possible.

Respectfully submitted,



Dieter Klinger, Acting Director
Mitsuko R. Herrera, ultraMontgomery Director
Marjorie Williams, TFCG Coordinator
Montgomery County, Maryland
Office of Broadband Programs
101 Monroe Street – 13th Floor
Rockville, MD 20850

Gerard L. Lederer
Joseph Van Eaton
Best Best & Krieger, L.L.P.
2000 Pennsylvania Avenue NW,
Suite 5300
Washington, D.C. 20006
(202) 370-5304

Counsel for Montgomery County

March 8, 2017

Montgomery County, MD Supplemental Comments
WT Docket No. 16-421, ET Docket No. 13-84, ET Docket No. 03-137

Exhibit A

Letter from Montgomery County Executive Isiah Leggett to FCC Chairman Tom Wheeler, re: Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies (Jan. 17, 2017)

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Isiah Leggett
County Executive

January 17, 2017

The Honorable Tom Wheeler, Chairman
The Honorable Mignon Clyburn, Commissioner
The Honorable Ajit Pai, Commissioner
The Honorable Michael O'Rielly, Commissioner
Federal Communications Commission
445 12th Street S.W.
Washington, DC 20554
Filed Electronically

RE: 2013 NOI – Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies (ET Docket No. 13-84, ET Docket No. 03-137)

Dear Chairman Wheeler and Commissioners:

I am writing to ask that you expedite completion of your 2013 Notice of Inquiry (NOI) to Reassess the Commission's Radiofrequency (RF) Exposure Limits and Policies (ET Dockets 13-84, 03-137). The best way the federal government can help speed the deployment of 5G technology would be to complete the 2013 NOI with all deliberate speed.

Montgomery County, Maryland is adjacent to our nation's capital, and we pride ourselves on being one of the most tech-savvy, tech-friendly counties, where our residents and businesses can have unparalleled access to the most advanced wireline and wireless broadband, and where our government, educational and research institutions are actively seeking to support innovation in Internet of Things devices, sensors, and applications. Indeed, there are 15 wireline and four major wireless broadband service providers occupying and operating within our public rights-of-way, and over 1,600 antennas deployed in over 800 locations throughout the County.

Recently, our County has received in four months, more applications for Distributed Antenna System (DAS) antennas and new mobile backhaul towers and poles, than we received

in the past eighteen years combined.[1] The requirements of 5G are likely to increase demands to place facilities in residential areas, where there has previously been very little deployment.[2]

A recent bill introduced by the Montgomery County Council to speed deployment of facilities shorter than 30 feet in residential areas was met by significant residential opposition.[3] The majority of residents expressed concerns about the health effects of RF emissions. In particular, residents are concerned about having so many antennas situated so close to home bedrooms.[4]

As you are aware, the County does not regulate wireless service facilities on the basis of the environmental effects of RF emissions, except to the extent that we may ensure compliance with the Commission's rules. However, the Commission adopted its present RF exposure limits in 1996. Lack of action by the Commission to either determine that the current rules are still adequate, or to take action to update the RF rules, is undermining public confidence that antennas can be safely operated in residential neighborhoods.[5]

This public doubt is echoed by the GAO. In July 2012, the GAO stated: "By not formally reassessing its current limit, FCC cannot ensure it is using a limit that reflects the latest research on RF energy exposure."[6] In response, the Commission opened the 2013 NOI to examine whether the current exposure limits remain appropriate in light of new research.

Yet, in the past three years, the Commission has not completed work on this NOI, which prompted U.S. Senator Richard Blumenthal and U.S. Representative Anna Eshoo in February

---

[1] See Attachment A, New/Replacement Pole & Tower Applications (FY97-FY17), New/Replacement Pole & Tower Applications (FY13-FY17), Map of Recent Wireless Facility Applications, Applications by Type of Structure, Applications by Height of Structure (June-Nov 2016). Montgomery County's regulatory and zoning review processes are in compliance with all applicable FCC "shot clock" requirements, and we can process colocation applications within 30 days. However, in newer subdivisions where utilities are required to installed underground, there may be very little existing infrastructure upon which to collocate antennas.

[2] We expect to receive another 500 applications in the next few years, which is consistent with the Chairman's statement that "there may be millions of small cell sites in the 5G future." Chairman Wheeler speech, CTIA Super Mobility Show 2016 (September 7, 2016).

[3] A video recording of the October 26, 2016, meeting is available at http://www.montgomerycountymd.gov/cable/Towers/small-cell-towers.html Over 250 residents appeared in person to express their concerns about expanding deployment of antennas in residential areas. 50 percent of meeting participants asked questions or expressed concerns about the health effects of RF emissions.

[4] *In re Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies and Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, First Report and Order, Further Notice of Proposed Rulemaking, and Notice of Inquiry, ET Docket No. 13-84, ET Docket No. 03-137 (March 29, 2013) ("2013 NOI") at ¶ 5. In this proceeding, the Cities of Boston and Philadelphia noted: "Unlike early cell tower deployment, today's new repeater network technologies are deployed in closer proximity to users. As such, potential exposure comes not from the receiving device – the phone – but rather the transmission device." 2013 NOI Reply Comments of the Cities of Boston and Philadelphia (Nov. 18, 2013) at p. 3.

[5] See Attachment B for a partial list of citations to post-1996 RF studies submitted by Montgomery County residents to their elected officials.

[6] United State Government Accountability Office, Report to Congressional Requestors, *TELECOMMUNICATIONS: Exposure and Testing for Mobile Phones Should Be Reassessed,* GAO-12-1771 (July 2012). The GAO recommended: "FCC formally reassess and, if appropriate, change its current RD energy exposure limit and mobile phone testing requirements related to likely usage configurations, particularly when phones are held against the body." See summary excerpt, Attachment C.

2015, to ask the Commission to complete the 2013 RF proceeding. Chairman Wheeler responded that he directed his staff "to prioritize this proceeding."[7] And yet, almost two years later, the 2013 NOI has not been completed and the 1996 RF rules remain in place.

While the Commission may believe that the 1996 RF rules are still appropriate, we support the work of the Commission and other federal agencies to either confirm that the current rule and procedures are still appropriate, or to update them. We also appreciate Chairman Wheeler's statement that the Commission needs "to help leaders at the local level" help the public understand the benefits of 5G.

The best way for you to help us is to complete your work on the 2013 NOI within the next 150 days. This will allow us to assure the public that the current federal RF rules reflect the most recent scientific research and address deployment of 5G antenna sites closer to residents. At the local level, we will continue to work to help residents understand how access to 5G services will benefit everyone and can help improve home values, and to find reasonable solutions to address deployment of antennas in residential neighborhoods.

Thank you for your work and attention to this matter, and to our mutual partnership to continue to support better broadband for all Americans.

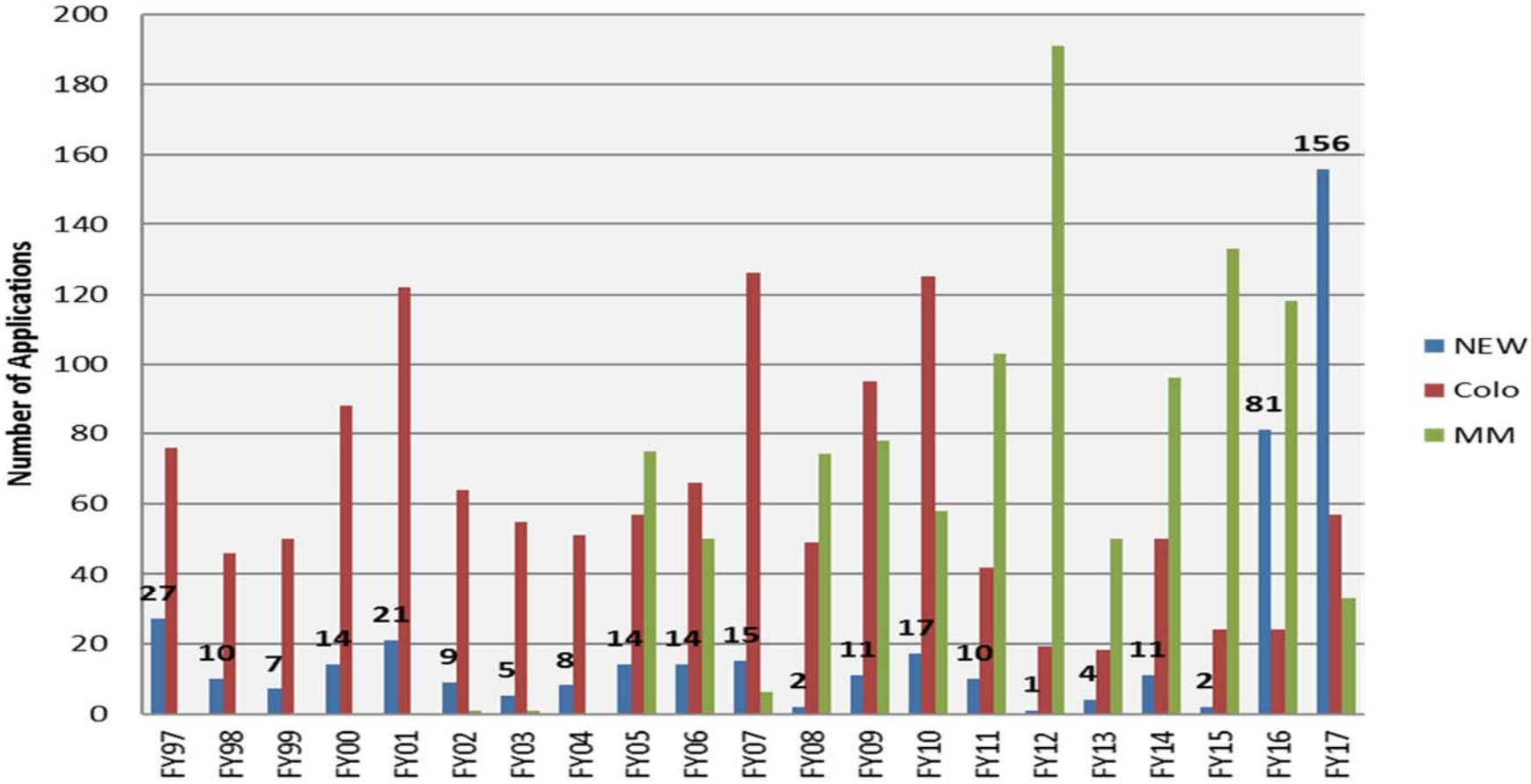
Sincerely,

Isiah Leggett
County Executive

cc: Senator Ben Cardin
Senator Chris Van Hollen
Congressman John Sarbanes
Congressman John Delaney
Congressman Jamie Raskin
Senator John Thune
Senator Bill Nelson
Senator Roger Wicker
Senator Brian Schatz
Senator Jerry Moran
Senator Richard Blumenthal
Congressman Greg Walden
Congressman Frank Pallone
Congresswoman Marsha Blackburn
Congressman Michael Doyle
Montgomery County Councilmembers

[7] See Attachment D.

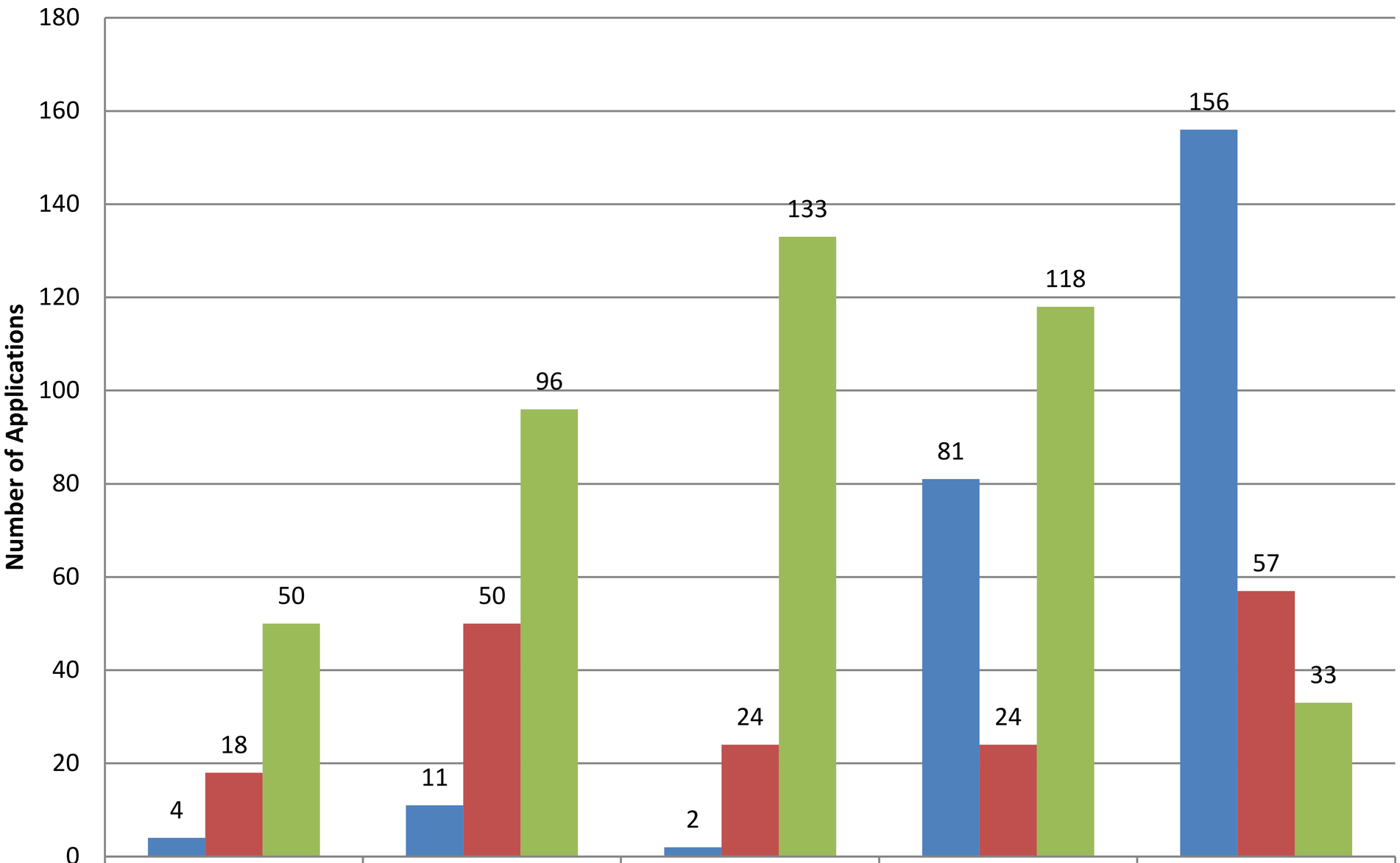
Montgomery County, Maryland Transmission Facilities Coordinating Group
New/Replacement Poles & Towers, Co-Located Antennas, and Antenna Modifications FY97-FY17 (partial)



More application for New/Replacement Poles were received between June and October 2016, than in the previous 18 years combined (County Fiscal Year runs July 1 to June 30)

Transmission Facilities Coordinating Group

NEW/REPLACEMENT POLES AND TOWERS
CO-LOCATED ANTENNAS & ANTENNA MODIFICATIONS



	FY13	FY14	FY15	FY16	FY17
NEW	4	11	2	81	156
Colo	18	50	24	24	57
MM	50	96	133	118	33

Transmission Facilities Coordinating Group

Recent Wireless Facility Applications

2016 Applications, DAS and Small Cell

Find address or place

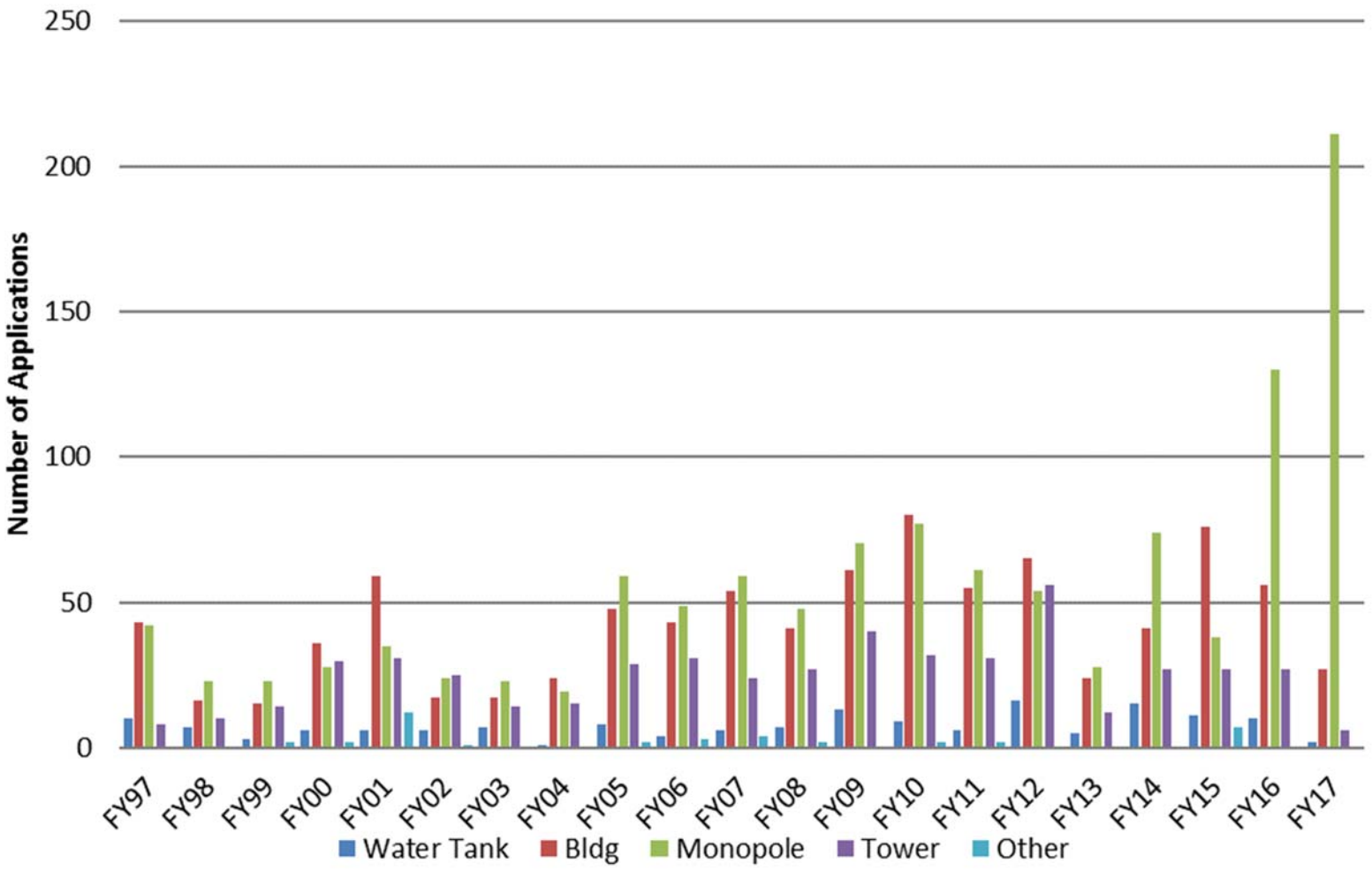
Legend

Small DAS

- Crown - Legacy DAS
- Crown DAS - Decorative Light
- Crown DAS - Metal Light
- Crown DAS - Wooden Pole
- Crown DAS – New Solo Pole
- Mobilitie – New Pole
- Mobilitie – Colocated
- Verizon Small Cell - Collocated

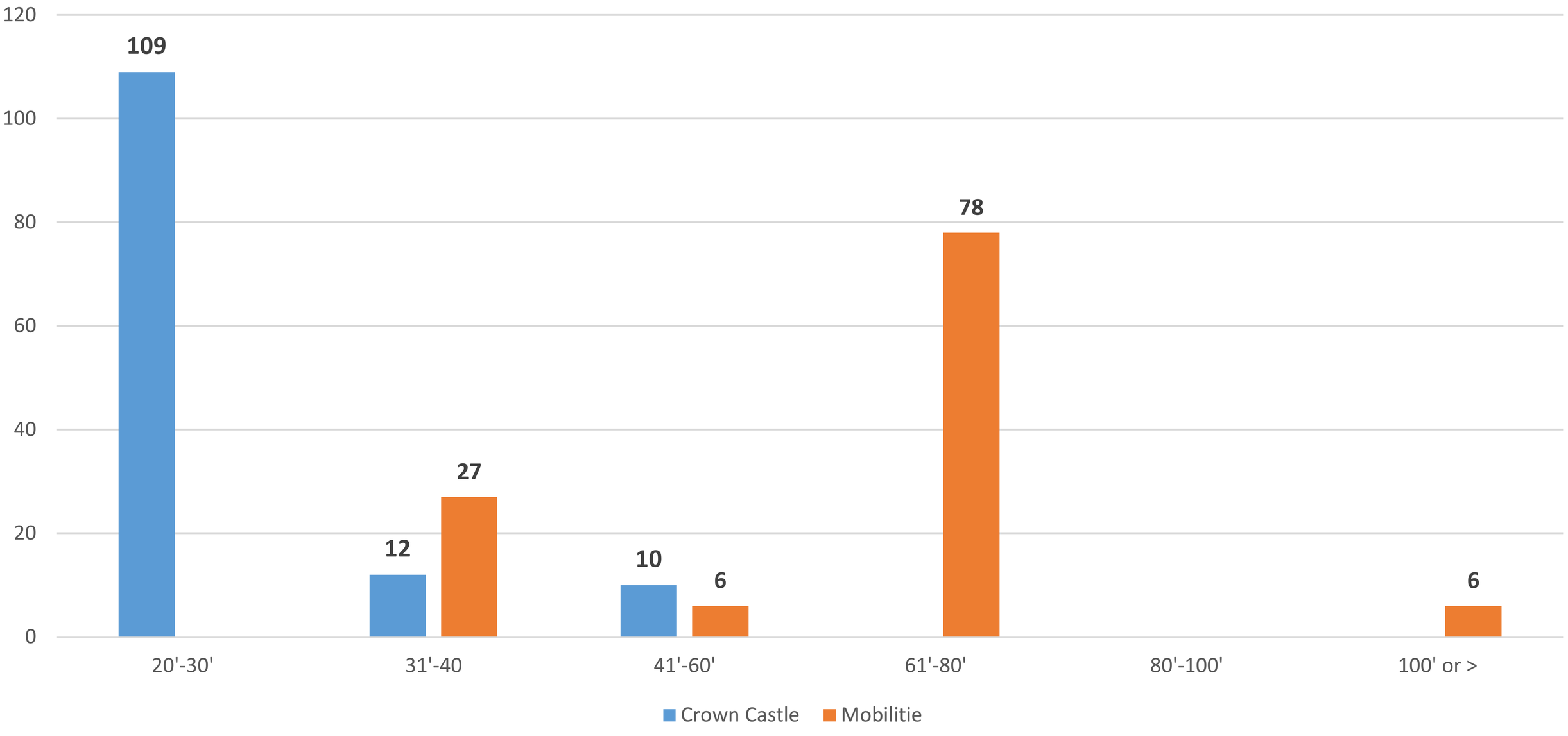
"Available at https://gis3.montgomerycountymd.gov/WirelessApplications/"

Transmission Facilities Coordinating Group
Applications Received by Type of Type of Structure



Transmission Facilities Coordinating Group

JUNE TO NOVEMBER 2016
APPLICATIONS RECEIVED BY HEIGHT OF STRUCTURE



Attachment B

Post-1996 RF Research Studies
Submitted by Montgomery County Residents to Elected Officials

Research on RF Radiation Effects on Humans

Gulati S, Yadav A, Kumar N, Kanupriya, Aggarwal NK, Kumar R, Gupta R. **Effect of GSTM1 and GSTT1 Polymorphisms on Genetic Damage in Humans Populations Exposed to Radiation From Mobile Towers** Arch Environ Contam Toxicol. 2015 Aug 5. [Epub ahead of print] (2016)

- In our study, 116 persons exposed to radiation from mobile towers and 106 control subjects were genotyped for polymorphisms in the GSTM1 and GSTT1 genes by multiplex polymerase chain reaction method. DNA damage in peripheral blood lymphocytes was determined using alkaline comet assay in terms of tail moment (TM) value and micronucleus assay in buccal cells (BMN). Our results indicated that TM value and BMN frequency were higher in an exposed population compared with a control group and the difference is significant. In our study, we found that different health symptoms, such as depression, memory status, insomnia, and hair loss, were significantly associated with exposure to EMR. Damaging effects of nonionizing radiation result from the generation of reactive oxygen species (ROS) and subsequent radical formation and from direct damage to cellular macromolecules including DNA.

A cross-sectional case control study on genetic damage in individuals residing in the vicinity of a mobile phone base station. Ghandi et al, 2014 (India):

- This cross-sectional case control study on genetic damage in individuals living near cell towers found genetic damage parameters of DNA were significantly elevated. The authors state, " The genetic damage evident in the participants of this study needs to be addressed against future disease-risk, which in addition to neurodegenerative disorders, may lead to cancer."

Shinjyo, T. & Shinjyo, A. (2014), Signifikanter Rückgang klinischer Symptome nach Senderabbau – eine Interventionsstudie. (English-Significant Decrease of Clinical Symptoms after Mobile Phone Base Station Removal – An Intervention Study) Tetsuharu Shinjyo and Akemi Shinjyo
Umwelt-Medizin-Gesellschaft, 27(4), S. 294-301.

- This research was undertaken to investigate the validity of concerns about whether chronic exposure to radiofrequency electromagnetic fields (RF-EMFs) emitted from mobile phone base station antennas could cause adverse health effects. Methods: We investigated possible adverse effects on the health of condominium inhabitants who were exposed from 1998 to 2009 to the radiation from mobile phone base station antennas installed on top of their condominium. To accomplish this, in January and November 2009, 107 of 122 inhabitants were interviewed and underwent medical examinations. The first examination was carried out while the base station was in operation, the second examination three months after the base station antennas were removed once and for all. Results: In several cases, significant effects on the inhabitants' health could be proven. The health of these inhabitants was shown to improve after the removal of the antennas, and the researchers could identify no other factors that could explain this health improvement. Conclusions and recommendations: The results of these examinations and interviews indicate a connection between adverse health effects and electromagnetic radiation from mobile phone base stations. Further research and studies are recommended regarding the possible adverse health effects of RF-EMFs. These results lead us to question the construction of mobile phone base stations on top of buildings such as condominiums or houses.

Carpenter, D. O. **Human disease resulting from exposure to electromagnetic fields,** Reviews on Environmental Health, Volume 28, Issue 4, Pages 159172 (2013).

- This review summarizes the evidence stating that excessive exposure to magnetic fields from power lines and other sources of electric current increases the risk of development of some cancers and neurodegenerative diseases, and that excessive exposure to RF radiation increases risk of cancer, male infertility, and neurobehavioral abnormalities.

Attachment B

Post-1996 RF Research Studies
Submitted by Montgomery County Residents to Elected Officials

SAFETY ZONE DETERMINATION FOR WIRELESS CELLULAR TOWER Nyakyi et al, Tanzania (2013)

- This research looked at the radiation that cell towers emit and states at safety zone is needed around the towers to ensure safe sleeping areas. The authors state that "respective authorities should ensure that people reside far from the tower by 120m or more depending on the power transmitted to avoid severe health effect."

Long-term exposure to microwave radiation provokes cancer growth: evidences from radars and mobile communication systems. Yakymenko , 2011

- We conclude that recent data strongly point to the need for re-elaboration of the current safety limits for non-ionizing radiation using recently obtained knowledge. We also emphasize that the everyday exposure of both occupational and general public to MW radiation should be regulated based on a precautionary principles which imply maximum restriction of excessive exposure.

Eskander EF et al, (November 2011) **How does long term exposure to base stations and mobile phones affect human hormone profiles?** Clin Biochem. 2011 Nov 27.

- Showed significant decrease in volunteers' ACTH, cortisol, thyroid hormones, prolactin for young females, and testosterone levels from RF exposures from both mobiles and cell towers.

Mortality by neoplasia and cellular telephone base stations. Dode et al., 2011 (Brazil):

- A clearly elevated relative risk of cancer mortality at residential distances of 500 meters or less from cell phone transmission towers. This 10 year study on cell phone antennas was released by the Municipal Health Department in Belo Horizonte and several universities in Brazil. Shortly after this study was published, the city prosecutor sued several cell phone companies and requested that almost half of the cities antennae be removed. Many were.

Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations Khurana, Hardell et al., Int. J Occup. Envir Health, Vol 16(3):263267, 2010

- 10 epidemiological studies that assessed for putative health effects of mobile phone base stations. Seven of these studies explored the association between base station proximity and neurobehavioral effects and three investigated cancer. We found that eight of the 10 studies reported increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances < 500 meters from base stations.
- None of the studies reported exposure above accepted international guidelines, suggesting that current guidelines may be inadequate in protecting the health of human populations. We believe that comprehensive epidemiological studies of long-term mobile phone base station exposure are urgently required to more definitively understand its health impact.

Levitt & Lai,**Biological Effects from Exposure to Electromagnetic Radiation Emitted by Cell Tower Base Stations and Other Antenna Arrays,** Environmental Reviews, 2010

- Over 100 citations, approximately 80% of which showed biological effects near towers. “Both anecdotal reports and some epidemiology studies have found headaches, skin rashes, sleep disturbances, depression, decreased libido, increased rates of suicide, concentration problems, dizziness, memory changes, increased risk of cancer, tremors, and other neurophysiological effects in populations near base stations. Built case for ‘setbacks’ and need for new exposure guidelines reflecting multiple and cumulative exposures

Oberfeld et al, 2008 (Austria)

- All subjects reported various symptoms during exposure including buzzing in the head, heart palpitations, unwellness, lightheadedness, anxiety, breathlessness, respiratory problems, nervousness, agitation, headache, tinnitus, heat sensation, and depression.

Neurobehavioral effects among inhabitants around mobile phone base stations, Neurotoxicology, G. Abdel-Rassoul, et al., (2007)

- "Conclusions and recommendations: Inhabitants living nearby mobile phone base stations are at risk for developing neuropsychiatric problems and some changes in the performance of

neurobehavioral functions either by facilitation or inhibition.So, revision of standard guidelines for public exposure to RER from mobile phone base station antennas and using of NBTB for regular assessment and early detection of biological

Abdel-Rassoul et al, 2007 (Egypt)

- Residents living beneath and opposite a long established mobile phone mast reported significantly higher occurrences of headaches, memory changes, dizziness, tremors, depressive symptoms and sleep disturbance than a control group.

Hutter et al, 2006 (Austria)

- A significant correlation between measured power density and headaches, fatigue, and difficulty in concentration in 365 subjects.

Hutter HP et al, (May 2006) **Subjective symptoms, sleeping problems, and c ognitive performance in subjects living near mobile phone base stations,** Occup Environ Med. 2006 May;63(5):307-13

- Found a significant relationship between some cognitive symptoms and measured power density; highest for headaches. Perceptual speed increased, while accuracy decreased insignificantly with increasing exposure levels. There was no significant effect on sleep quality.

Bortkiewicz et al, 2004 (Poland)

- Residents close to mobile phone masts reported: more incidences of circulatory problems, sleep disturbances, irritability, depression, blurred vision and concentration difficulties the nearer they lived to the mast.
- The performed studies showed the relationship between the incidence of individual symptoms, the level of exposure, and the distance between a residential area and a base station.

Wolf et al, 2004 (Israel)

- A four-fold increase in the incidence of cancer among residents living within 300m radius of a mobile phone mast for between three and seven years was detected.

Eger et al, 2004 (Germany)

- A three-fold increase in the incidence of malignant tumours was found after five years' exposure in people living within 400m radius of a mobile phone mast.

The Microwave Syndrome: A preliminary Study. Navarro E, 2003 (Spain)

- Statistically significant positive exposure-response associations between field intensity and fatigue, irritability, headaches, nausea, loss of appetite, sleeping disorder, depressive tendency, feeling of discomfort, difficulty in concentration, loss of memory, visual disorder, dizziness and cardiovascular problems. Two different exposure groups also showed an increase of the declared severity in the group with the higher exposure.

Investigation on the health of people living near mobile telephone relay stations: Incidence according to distance and sex Santini et al, 2002 (France)

- 530 people living near mobile phone masts reported more symptoms of headache, sleep disturbance, discomfort, irritability, depression, memory loss and concentration problems the closer they lived to the mast. This first study on symptoms experienced by people living in vicinity of base stations shows that, in view of radioprotection, minimal distance of people from cellular phone base stations should not be < 300 m.

Additional Research on RF Radiation

L. Lloyd Morgan, Santosh Kesari, Devra Lee Davis. **Why children absorb more microwave radiation than adults: The consequences.** Journal of Microscopy and Ultrastructure. DOI: 10.1016/j.jmau.2014.06.005. In press. Published online Jul 15, 2014.

- International Cancer registries are showing a rise in brain cancer. Children absorb more microwave radiation, a Class 2 B possible carcinogen than adults.The fetus is in greater danger than children from exposure to MWR. The legal exposure limits have remained unchanged for

decades. Cellphone manuals warnings and the 20 cm rule for tablets/laptops violate the "normal operating position" regulation.

Coureau G, Bouvier G, Lebailly P, Fabbro-Peray P, Gruber A, Leffondre K, Guillamo JS, Loiseau H, Mathoulin-Pélissier S, Salamon R, Baldi I. (2014). **Mobile phone use and brain tumours in the CERENAT case-control study**.Occup Environ Med. 71(7), 514-22.

- "However, the positive association was statistically significant in the heaviest users when considering life-long cumulative duration for meningiomas and number of calls for gliomas Risks were higher for gliomas, temporal tumours, occupational and urban mobile phone use.These additional data support previous findings concerning a possible association between heavy mobile phone use and brain tumours."

Davis DL, Kesari S, Soskolne CL, Miller AB, Stein Y.(2013). **Swedish review strengthens grounds for concluding that radiation from cellular and cordless phones is a probable human carcinogen.** Pathophysiology. 20(2), 123-9.

- "If the increased brain cancer risk found in young users in these recent studies does apply at the global level, the gap between supply and demand for oncology services will continue to widen. Many nations, phone manufacturers, and expert groups, advise prevention in light of these concerns by taking the simple precaution of "distance" to minimize exposures to the brain and body. We note than brain cancer is the proverbial "tip of the iceberg"; the rest of the body is also showing effects other than cancers."

Hardell L, Carlberg M, Söderqvist F, Mild K.(2013)**. Case-control study of the association between malignant brain tumours diagnosed between 2007 and 2009 and mobile and cordless phone use.** International Journal of Oncology 43(6), 1833-45.

- "This study confirmed previous results of an association between mobile and cordless phone use and malignant brain tumours. These findings provide support for the hypothesis that RF-EMFs play a role both in the initiation and promotion stages of carcinogenesis".

The Bioinititive 2012 Report;

- A Comprehensive Overview of the Science by experts in the field. It is broken down into Chapters on various health effects. Notably, it also has the abstracts of the research (All research since 2007 with a SEARCH feature). It also has color charts so that you can see the levels of radiation and compare this to the effects shown in research studies.

Aldad et al., **Fetal Radiofrequency Radiation Exposure From 800-1900 Mhz-Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice.** Scientific Reports, 2012; 2 DOI:

- Mice that were exposed to radiation tended to be more hyperactive and had reduced memory capacity. Authors attributed the behavioral changes to an effect during pregnancy on the development of neurons in the prefrontal cortex region of the brain.

Hardell L, Carlberg M, Hansson, Mild K. (2006). **Pooled analysis of two case-control studies on the use of cellular and cordless telephones and the risk of benign brain tumours diagnosed during 1997-2003**. International Journal of Oncology. 509-18.

- In the multivariate analysis, a significantly increased risk of acoustic neuroma was found with the use of analogue phones.

Martin L. Pall. **Microwave electromagnetic fields act by activating voltage-gated calcium channels: why the current international safety standards do not predict biological hazard.** Recent Res. Devel. Mol. Cell Biol. 7(2014).

- "It can be seen from the above that 10 different well-documented microwave EMF effects can be easily explained as being a consequence of EMF VGCC activation: oxidative stress, elevated single and double strand breaks in DNA, therapeutic responses to such EMFs, breakdown of the blood-brain barrier, cancer, melatonin loss, sleep dysfunction, male infertility and female infertility."

Attachment B

Post-1996 RF Research Studies
Submitted by Montgomery County Residents to Elected Officials

Additional Research

Kesari et al., Effect of 3G cell phone exposure with computer controlled 2-D stepper motor on non-thermal activation of the hsp27/p38MAPK stress pathway in rat brain. Cell Biochem Biophys. 2014 Mar;68(2):347-58. http://www.ncbi.nlm.nih.gov/pubmed/23949848

Aldad T, Gan G, Gao X, Taylor H.(2012). Fetal Radiofrequency Radiation Exposure From 800-1900 Mhz-Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice. Scientific Reports. 2, 3-12. http://www.nature.com/srep/2012/120315/srep00312/full/srep00312.html

Razavinasab M1, Moazzami K, Shabani M. Maternal mobile phone exposure alters intrinsic electrophysiological properties of CA1 pyramidal neurons in rat offspring.Toxicol Ind Health. 2014 Mar 6. http://www.ncbi.nlm.nih.gov/pubmed/24604340

Gandhi OP, Morgan LL, De Salles AA, Han YY, Herberman RB, Davis DL. (2012). Exposure limits: the underestimation of absorbed cell phone radiation, especially in children. Electromagn Biol Med. 31(1), 3451. http://www.ncbi.nlm.nih.gov/pubmed/21999884

Chen C, Exposure to 1800 MHz radiofrequency radiation impairs neurite outgrowth of embryonic neural stem cells.Sci Rep.May 29, 2014 http://www.ncbi.nlm.nih.gov/pubmed/24869783?dopt=Abstract

A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF) http://www.bioinitiative.org/

Dr. Erica Mallery--Blythe Physicians' Health Initiative for Radiation and Environment - UK "Electromagnetic Radiation and Children" November 2014 Lecture https://www.youtube.com/watch?v=sNFdZVeXw7M

Dr. Devra Davis scientific presentation on RF radiation at the National Institute of Environmental Health Sciences (NIEHS) https://www.youtube.com/watch?v=wNNSztN7wJc

Blackman,C.,2009.Cell phone radiation: Evidence from ELF and RF studies supporting more inclusive risk identification and assessment. Pathophysiology 16, 205-216. http://www.pathophysiologyjournal.com/article/S0928-4680%2809%2900004-2/abstract

Levitt & Lai,Biological Effects from Exposure to Electromagnetic Radiation Emitted by Cell Tower Base Stations and Other Antenna Arrays, Environmental Reviews, 2010 http://www.researchgate.net/publication/233593841_

Long-term exposure to microwave radiation provokes cancer growth: evidences from radars and mobile communication systems. Yakymenko , 2011 http://www.ncbi.nlm.nih.gov/pubmed/21716201

Carpenter, D. O. Human disease resulting from exposure to electromagnetic fields, Reviews on Environmental Health, Volume 28, Issue 4, Pages 159172. http://www.ncbi.nlm.nih.gov/pubmed/24280284

Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations Khurana, Hardell et al., Int. J Occup. Envir Health, Vol 16(3):263267, 2010 http://www.researchgate.net/publication/45387389

Mortality by neoplasia and cellular telephone base stations. Dode et al., 2011 (Brazil): http://www.sciencedirect.com/science/article/pii/S0048969711005754

Ronni Wolf and Danny Wolf, INCREASED INCIDENCE OF CANCER NEAR A CELLPHONE TRANSMITTER STATION. International Journal of Cancer Prevention VOLUME 1, NUMBER 2, APRIL 2004 http://www.emf-health.com/PDFreports/Israelstudy_celltower.pdf

Attachment B

Post-1996 RF Research Studies
Submitted by Montgomery County Residents to Elected Officials

Horst Eger, Klaus Uwe Hagen, Birgitt Lucas, Peter Vogel, Helmut Voit,The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer, Umwelt·Medizin·Gesellschaft 17,4 2004, http://www.powerwatch.org.uk/news/20041118_naila.pdf

Mortality by neoplasia and cellular telephone base stations. Dode et al., 2011 (Brazil): http://www.sciencedirect.com/science/article/pii/S0048969711005754

Neurobehavioral effects among inhabitants around mobile phone base stations, Neurotoxicology, G. Abdel-Rassoul, et al., (2007) http://www.ncbi.nlm.nih.gov/pubmed/16962663

A cross-sectional case control study on genetic damage in individuals residing in the vicinity of a mobile phone base station.Ghandi et al, 2014 (India) http://www.ncbi.nlm.nih.gov/pubmed/25006864

SAFETY ZONE DETERMINATION FOR WIRELESS CELLULAR TOWER Nyakyi et al, Tanzania (2013) http://ijret.org/Volumes/V02/I09/IJRET_110209029.pdf

Hutter HP et al, (May 2006) Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations, Occup Environ Med. 2006 May;63(5):307-13 http://www.ncbi.nlm.nih.gov/pubmed/1662185

Eskander EF et al, (November 2011) How does long term exposure to base stations and mobile phones affect human hormone profiles? Clin Biochem. 2011 Nov 27. http://www.ncbi.nlm.nih.gov/pubmed/22138021

Investigation on the health of people living near mobile telephone relay stations: Incidence according to distance and sex Santini et al, 2002 (France) http://www.ncbi.nlm.nih.gov/pubmed/12168254

The Microwave Syndrome: A preliminary Study. Navarro E, 2003 (Spain)Pathol Biol (Paris). 2002 Jul;50(6):369-73. http://www.emf-portal.de/viewer.php?aid=13498&l=e

Bortkiewicz A1, Zmyślony M, Szyjkowska A, Gadzicka E. Subjective symptoms reported by people living in the vicinity of cellular phone base stations: review, Med Pr. 2004;55(4):345-51. http://www.ncbi.nlm.nih.gov/pubmed/15620045

Attachment C

United States Government Accountability Office

GAO

Report to Congressional Requesters

July 2012

TELECOMMUNICATIONS

Exposure and Testing Requirements for Mobile Phones Should Be Reassessed

GAO-12-771

July 2012

TELECOMMUNICATIONS

Exposure and Testing Requirements for Mobile Phones Should Be Reassessed

GAO Accountability * Integrity * Reliability

Highlights

Highlights of GAO-12-771, a report to congressional requesters

Why GAO Did This Study

The rapid adoption of mobile phones has occurred amidst controversy over whether the technology poses a risk to human health as a result of long-term exposure to RF energy from mobile phone use. FCC and FDA share regulatory responsibilities for mobile phones. GAO was asked to examine several issues related to mobile phone health effects and regulation. Specifically, this report addresses (1) what is known about the health effects of RF energy from mobile phones and what are current research activities, (2) how FCC set the RF energy exposure limit for mobile phones, and (3) federal agency and industry actions to inform the public about health issues related to mobile phones, among other things. GAO reviewed scientific research; interviewed experts in fields such as public health and engineering, officials from federal agencies, and representatives of academic institutions, consumer groups, and the mobile phone industry; reviewed mobile phone testing and certification regulations and guidance; and reviewed relevant federal agency websites and mobile phone user manuals.

What GAO Recommends

FCC should formally reassess and, if appropriate, change its current RF energy exposure limit and mobile phone testing requirements related to likely usage configurations, particularly when phones are held against the body. FCC noted that a draft document currently under consideration by FCC has the potential to address GAO's recommendations.

View GAO-12-771. For more information, contact Mark Goldstein at (202) 512-2834 or goldsteinm@gao.gov, or Marcia Crosse at (202) 512-7114 or crossem@gao.gov.

What GAO Found

Scientific research to date has not demonstrated adverse human health effects of exposure to radio-frequency (RF) energy from mobile phone use, but research is ongoing that may increase understanding of any possible effects. In addition, officials from the Food and Drug Administration (FDA) and the National Institutes of Health (NIH) as well as experts GAO interviewed have reached similar conclusions about the scientific research. Ongoing research examining the health effects of RF energy exposure is funded and supported by federal agencies, international organizations, and the mobile phone industry. NIH is the only federal agency GAO interviewed directly funding studies in this area, but other agencies support research under way by collaborating with NIH or other organizations to conduct studies and identify areas for additional research.

The Federal Communications Commission's (FCC) RF energy exposure limit may not reflect the latest research, and testing requirements may not identify maximum exposure in all possible usage conditions. FCC set an RF energy exposure limit for mobile phones in 1996, based on recommendations from federal health and safety agencies and international organizations. These international organizations have updated their exposure limit recommendation in recent years, based on new research, and this new limit has been widely adopted by other countries, including countries in the European Union. This new recommended limit could allow for more RF energy exposure, but actual exposure depends on a number of factors including how the phone is held during use. FCC has not adopted the new recommended limit. The Office of Management and Budget's instructions to federal agencies require the adoption of consensus standards when possible. FCC told GAO that it relies on the guidance of federal health and safety agencies when determining the RF energy exposure limit, and to date, none of these agencies have advised FCC to change the limit. However, FCC has not formally asked these agencies for a reassessment. By not formally reassessing its current limit, FCC cannot ensure it is using a limit that reflects the latest research on RF energy exposure. FCC has also not reassessed its testing requirements to ensure that they identify the maximum RF energy exposure a user could experience. Some consumers may use mobile phones against the body, which FCC does not currently test, and could result in RF energy exposure higher than the FCC limit.

Federal agencies and the mobile phone industry provide information on the health effects of mobile phone use and related issues to the public through their websites and mobile phone manuals. The types of information provided via federal agencies' websites on mobile phone health effects and related issues vary, in part because of the agencies' different missions, although agencies provide a broadly consistent message. Members of the mobile phone industry voluntarily provide information on their websites and in mobile-phone user manuals. There are no federal requirements that manufacturers provide information to consumers about the health effects of mobile phone use.

Attachment D

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

November 24, 2015

ET Doc. 13-84

The Honorable Anna G. Eshoo
U.S. House of Representatives
241 Cannon House Office Building
Washington, D.C. 20515

Dear Congresswoman Eshoo:

Thank you for inquiring about the Commission's work to ensure RF emission safety protocols for America's workers. I am pleased that the Commission's Office of Engineering and Technology (OET) Chief recently briefed your staff on this matter. I understand that they discussed some of the issues concerning our work with other agencies, general enforcement efforts, and the FCC's ongoing rulemaking related to RF radiation exposure. This is a very important issue for the Commission and we have been focused on ensuring the safety of those who work in proximity to RF emitters.

On March 29, 2013, the Commission adopted a *Report and Order, Further Notice of Proposed Rulemaking and Notice of Inquiry,* based in part on the developing understanding of RF radiation issues since our prior inquiries. Since then, we have received nearly a thousand comments totaling more than 20,000 pages.

The current proceeding is complex and involves several other agencies with expertise in health, human RF radiation exposure, and safety issues. As you are aware, the Commission is not the expert subject matter agency for health and safety and, accordingly, we rely on our partner agencies to provide guidance on such matters. On February 4, 2015, the OET Chief sent letters to respective counterparts at regulatory health and safety agencies, including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), and the Occupational Safety and Health Administration (OSHA), encouraging their contribution of comments to our record in response to the substantive issues we raised. These letters were in addition to the Commission's regular and ongoing staff-level communications with our partner agencies on RF issues.

Please be assured that I take the ongoing process very seriously and I have directed my staff to prioritize this proceeding. Last year, I was joined by Secretary of Labor, Thomas Perez, in conducting a workshop at the Commission to explore issues surrounding tower climber safety. In conjunction with OSHA, the Commission's workshop focused on injury prevention and fatalities involving work on communications towers. This working relationship with OSHA is ongoing and has led to successful, collaborative efforts to increase awareness and education and reduce on-the-job injuries for tower workers.

As you correctly identify in your letter, workers who are not routinely servicing the towers themselves, such as rooftop maintenance staff, electricians and painters, however, create a different set of job site concerns. Many of the safety issues in those cases are related to signage and devices to provide exposure warnings of towers that might otherwise be unseen or nearby. While the Commission is actively considering how its rules can better protect these other classes of workers, the Commission's Enforcement Bureau is instrumental in ensuring compliance with its existing safety rules.

As you note, in 2014 the Commission entered a consent decree with Verizon related to alleged violations of its safety rules, leading to a $50,000 forfeiture and the carrier's agreement to implement a compliance plan to provide training and take other safety measures in order to protect its employees, contractors and others who may come into contact with RF emissions from its wireless facilities. I understand that Verizon Wireless has spent at least $4.2 million to inspect all of its 5,000 rooftop antenna sites and to review and update RF exposure warning signage at access and antenna points. Also, employees at the company's two network operations centers have been trained on how to inform individuals working near transmitter sites on safety measures.

This is just one example of investigations that the Commission is conducting to enforce tower/RF safety rules. After the OET Chief briefed your staff, the Commission released two Notices of Apparent Liability proposing forfeitures of $60,000 and $25,000 against T-Mobile and WirelessCo, respectively, for failing to adequately prevent public access to areas near rooftop stations that exceeded general population radiofrequency emission limits. We are committed to continue the diligent enforcement of our rules so as to ensure worker safety.

Given your significant concerns about the current ongoing proceeding, I have directed our staff to add your letter to the docket to ensure that your views are considered as we move toward a formal resolution. Thank you again for your interest and the opportunity to brief your staff.

Sincerely,

Tom Wheeler

Attachment D

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

November 24, 2015

The Honorable Richard Blumenthal
United States Senate
702 Hart Senate Office Building
Washington, D.C. 20510

Dear Senator Blumenthal:

Thank you for inquiring about the Commission's work to ensure RF emission safety protocols for America's workers. I am pleased that the Commission's Office of Engineering and Technology (OET) Chief recently briefed your staff on this matter. I understand that they discussed some of the issues concerning our work with other agencies, general enforcement efforts, and the FCC's ongoing rulemaking related to RF radiation exposure. This is a very important issue for the Commission and we have been focused on ensuring the safety of those who work in proximity to RF emitters.

On March 29, 2013, the Commission adopted a *Report and Order, Further Notice of Proposed Rulemaking and Notice of Inquiry*, based in part on the developing understanding of RF radiation issues since our prior inquiries. Since then, we have received nearly a thousand comments totaling more than 20,000 pages.

The current proceeding is complex and involves several other agencies with expertise in health, human RF radiation exposure, and safety issues. As you are aware, the Commission is not the expert subject matter agency for health and safety and, accordingly, we rely on our partner agencies to provide guidance on such matters. On February 4, 2015, the OET Chief sent letters to respective counterparts at regulatory health and safety agencies, including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), and the Occupational Safety and Health Administration (OSHA), encouraging their contribution of comments to our record in response to the substantive issues we raised. These letters were in addition to the Commission's regular and ongoing staff-level communications with our partner agencies on RF issues.

Please be assured that I take the ongoing process very seriously and I have directed my staff to prioritize this proceeding. Last year, I was joined by Secretary of Labor, Thomas Perez, in conducting a workshop at the Commission to explore issues surrounding tower climber safety. In conjunction with OSHA, the Commission's workshop focused on injury prevention and fatalities involving work on communications towers. This working relationship with OSHA is ongoing and has led to successful, collaborative efforts to increase awareness and education and reduce on-the-job injuries for tower workers.

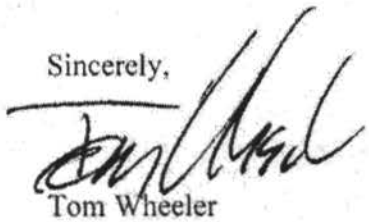
As you correctly identify in your letter, workers who are not routinely servicing the towers themselves, such as rooftop maintenance staff, electricians and painters, however, create a different set of job site concerns. Many of the safety issues in those cases are related to signage and devices to provide exposure warnings of towers that might otherwise be unseen or nearby. While the Commission is actively considering how its rules can better protect these other classes of workers, the Commission's Enforcement Bureau is instrumental in ensuring compliance with its existing safety rules.

As you note, in 2014 the Commission entered a consent decree with Verizon related to alleged violations of its safety rules, leading to a $50,000 forfeiture and the carrier's agreement to implement a compliance plan to provide training and take other safety measures in order to protect its employees, contractors and others who may come into contact with RF emissions from its wireless facilities. I understand that Verizon Wireless has spent at least $4.2 million to inspect all of its 5,000 rooftop antenna sites and to review and update RF exposure warning signage at access and antenna points. Also, employees at the company's two network operations centers have been trained on how to inform individuals working near transmitter sites on safety measures.

This is just one example of investigations that the Commission is conducting to enforce tower/RF safety rules. After the OET Chief briefed your staff, the Commission released two Notices of Apparent Liability proposing forfeitures of $60,000 and $25,000 against T-Mobile and WirelessCo, respectively, for failing to adequately prevent public access to areas near rooftop stations that exceeded general population radiofrequency emission limits. We are committed to continue the diligent enforcement of our rules so as to ensure worker safety.

Given your significant concerns about the current ongoing proceeding, I have directed our staff to add your letter to the docket to ensure that your views are considered as we move toward a formal resolution. Thank you again for your interest and the opportunity to brief your staff.

Sincerely,



Tom Wheeler

Attachment D

942 DET

Spectrum RF Radiation

Congress of the United States

Washington, DC 20510

September 17, 2015

The Honorable Tom Wheeler, Chairman
Federal Communications Commission
445 12th St., Southwest
Washington, D.C. 20554

Dear Chairman Wheeler,

We write with concern for the health and safety of the estimated 250,000 people who work each year in close proximity to cellular antennas and may be exposed to radiofrequency (RF) radiation in excess of the Federal Communications Commission's (FCC's) human exposure limits. Excessive exposure to RF radiation leads to well-documented potential harms, especially to workers who spend time near the antenna and in the line of the antenna's beam. At sufficient power levels and exposure durations, RF radiation has the ability to heat biological tissue. Thermal effects can include eye damage, sterility, and cognitive impairments.[1]

Even though the FCC recommends that wireless carriers control exposure to harmful RF radiation using safety protocols such as signs, barricades, and training, it has come to our attention that these recommendations have not consistently been implemented to protect workers.

We urge the FCC and the Occupational Safety and Health Administration (OSHA) to work together to enforce exposure limits and ensure wireless carriers are taking the required precautions to protect the safety of all persons who may be exposed to dangerous levels of RF radiation near wireless towers.

To close gaps in their networks and to satisfy the voracious consumer demand for their services, wireless carriers depend on leasing rooftop space and building access from property managers. As a result, cellular antennas are now found atop all kinds of buildings, including apartment buildings, schools, hospitals, places of worship, fire stations, communication towers, and other public and private buildings. Even our nation's cellular towers, which are generally free-standing structures with restricted external access, also pose both RF radiation and climber safety occupational hazards that need to be addressed to protect the workforce.

Rooftop and building mounted antenna sites also endanger not only the wireless industry's trained RF technicians but also roofers, water proofers, electricians, carpenters, building maintenance

[1] http://www.ambest.com/directories/bestconnect/EmergingRisks.pdf

personnel, HVAC technicians, painters, firefighters, and other workers who may come in close proximity and be placed at risk of RF injuries.

While wireless carriers take important precautions, such as outfitting their employees with protective equipment, providing RF exposure monitoring units, and even powering down antennas to eliminate the RF radiation hazard, their subcontractors and unaffiliated third-party workers are not regularly afforded these same protections. These subcontractors and third parties often receive no RF safety training and are left on their own to determine the existence, location, and degree of the RF radiation hazards.

Further complicating the situation, RF radiation cannot be felt, and many cellular antennas these days are constructed in a camouflage style and made to look like part of the buildings they are attached to. Known as "stealth antennas," they can be undetectable to the untrained eye. This practice further hinders efforts by even the most earnest workers to properly protect themselves. It is crucial that workers are able to take steps to safeguard themselves from the RF radiation.

A report last October from the *Wall Street Journal* revealed that one in ten antenna sites does not adhere to FCC guidelines for providing the appropriate level of awareness and control to workers who may be exposed to RF radiation above the limits for the general population.[2] In addition, last year, Verizon Wireless and the FCC's Enforcement Bureau entered into a consent decree for Verizon's alleged violations of RF exposure limits at rooftop antenna sites in Hartford, Connecticut and Philadelphia, Pennsylvania. It is unacceptable that RF warning signs have been found missing, mislabeled, unintelligible, or out-of-date, and that strategies to control access (e.g. barricades, locks, and fences) are in disrepair.

In light of these problems, the FCC has a responsibility to ensure the existence of – and compliance with – a comprehensive worker-safety framework.

We are pleased that the FCC's March 27, 2013 *Report and Order* reminds FCC licensees of their obligation to address worker exposure issues, and clarifies that workers subject to the occupational limits must be fully aware of and able to exercise control over their RF exposure. We have also noted that the *Further NPRM* advances new specific requirements for ensuring licensees comply with exposure limits under the different RF exposure categories.

We urge the FCC to move swiftly to finalize the *Further NPRM*, and to consult with OSHA and others to ensure that the final rule is effective. We also expect that in the interim, the FCC, in collaboration with OSHA, will continue to proactively enforce all existing requirements, including tower-climber safety, and hold accountable all licensees that fail to implement the safeguards required to protect workers.

We look forward to hearing what next steps you have planned to make sure that the expansion of our telecommunications infrastructure does not come at the expense of the health and safety of hardworking Americans. Thank you for your attention to this very important occupational health and safety matter.

---

[2] http://online.wsj.com/articles/cellphone-boom-spurs-antenna-safety-worries-1412293055

Sincerely,

Richard Blumenthal
United States Senate

Anna G. Eshoo
Member of Congress

Cc: Thomas E. Perez, Secretary of Labor