

# **“Impact of Communication Towers and Equipment on Nearby Property Values”**

**Prepared by**

**Burgoyne Appraisal Company**

**Executed March 7, 2017**

**Exhibit Presented as evidence in Comments of the Smart Communities Citing Coalition on the Mobilite  
Petition for Declaratory Ruling on Streamlining of Small Cell Infrastructure By Improving Wireless  
Facilities Siting Policies.**

**WT Docket No. 16-421.**

**For the full comments of the Smart Communities Siting Coalition please see**

**[https://ecfsapi.fcc.gov/file/1030998488645/COMMENTS\\_SMART%20COMMUNITIES%20SITING%20COALITION.pdf](https://ecfsapi.fcc.gov/file/1030998488645/COMMENTS_SMART%20COMMUNITIES%20SITING%20COALITION.pdf)**



# BURGOYNE

## APPRAISAL COMPANY

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Burgoyne Appraisal Company has investigated the impact of communication towers and communication equipment on nearby property values, including residential properties, commercial properties, and properties in historically designated areas. Our report on such impacts is based upon our more than thirty years of professional appraisal experience and drawing upon literature search of other articles and appraisal papers.

Please note that due to the nature of the report our investigation is general in nature and is not specifically related to any given location.

### IMPACT OF COMMUNICATION TOWERS AND EQUIPMENT ON NEARBY PROPERTY VALUES

#### I. Executive Summary

- The Burgoyne Appraisal Company ("Burgoyne"), drawing upon its thirty-two (32) years of experience as a Real Estate Appraiser specializing in detrimental conditions, takings, adverse impacts and right-of-way, finds that:
- As a general matter, assuming two generally comparable areas, aesthetics will have the most significant impact on property values. If, for example, I assume two houses of equal age, size and condition in the same residential area, the relative value of one home will be most affected by the aesthetics in the immediate vicinity of that home.
- As a general matter, visible utility structures do adversely affect property values. This is reflected in the fact that, as a general matter property values are higher in areas where there are no aboveground utility facilities (other than lighting) than in areas where utilities are aboveground.
- The impact will generally be related to the size of the facility, the characteristics of the facility, its location (including proximity), and visibility. That is to say, I would expect a tower or other structure that is larger than existing structures to have a greater impact on property values than a structure that is similarly sized and in keeping with other structures. I would expect that installation of equipment that is widely visible to have a more significant impact than equipment that is not (so, for example, a transformer at the top of a pole would have less of an impact than a box of similar size that is within a normal site line, or on the

ground). The characteristics of the facility are also important. An unorganized conglomeration of various boxes and wires would have a greater impact than a streamlined and contained single cabinet.

The literature does not tell us the impact of various iterations of DAS designs on residential properties; there is more information about towers of the sort imposed by Mobilite. Nonetheless, based on my experience, it would be unwise to assume that the impact of additional ground cabinets, or of structures of the sort that entities would be entitled to install under the FCC's Section 6409 rules is zero or so near to zero. Just looking at the literature on property values in underground v. non-underground areas, there are reasons for concern that justify maintenance of significant latitude at the local level over siting and compensation.

While it is certainly recognized that DAS systems and Cellular antennas are an important part of our nation's infrastructure, and that it is inevitable that new antennas will need to be installed as we move into the future, it is important for municipalities (and property owners, in the case of right-of-way easements) to retain significant control over the size, location, scope, expansion, and characterization of the installations. This is because adverse impacts from negative externalities vary considerably with the size, location, scope, expansion, and characterization of the installations.

Hidden, smaller, and neatly mounted "small cells," will have an impact, but that impact will be lesser than other alternatives. Likewise, there needs to be control over future growth of installed facilities. It is my opinion that the Commission needs to analyze those impacts in detail before considering additional rules. It is also my opinion that municipalities need to retain some regulatory control over these installations in order to minimize impacts and protect the health, welfare, and safety of their residents in the same way that other regulations and the exercise of reasonable police powers do.

## II. Qualifications

David E. Burgoyne, ASA, SR/WA, is a native of Ann Arbor, Michigan and attended Greenhills School in Ann Arbor. He graduated in 1981 from Colgate University in Hamilton, New York with a Bachelor of Arts Degree in Liberal Arts with a concentration in Physics-Astronomy. He also served as a graduate instructor at the University of Wyoming as a Doctoral Candidate in Astrophysics.

Mr. Burgoyne is an independent fee appraiser currently licensed as a Certified General Real Estate Appraiser by the States of Michigan, Indiana, North and South Carolina. Mr. Burgoyne is a Senior Member of the American Society of Appraisers holding the ASA Designation for Real Property. Mr. Burgoyne is currently re-accredited as an ASA through June 10, 2017. He is also a senior member holding the SR/WA designation and is a Past Chapter President of the International Right of Way Association. Mr. Burgoyne is currently re-certified as an SR/WA through June 15, 2018.

Mr. Burgoyne is an AQB certified USPAP instructor #44603 (expiring March 31, 2018) and is also a CLIMB Certified Instructor of right-of-way appraisal and other courses for IRWA, including courses on the appraisal of partial takings, easement valuation, appraisal review, ethics and standards, USPAP, adult education, and the valuation of contaminated properties. In 2015, Mr. Burgoyne was awarded the 2014 W. Howard Armstrong International Instructor of the Year Award by the International Right of Way Association.

Mr. Burgoyne has qualified as an expert witness in the United States Court of Claims, the United States District Courts for the Eastern and Western Districts of Michigan; the Michigan Circuit Courts of Allegan, Barry, Cass, Eaton, Genesee, Grand Traverse, Huron, Ingham, Jackson, Kent, Lapeer, Leelanau, Lenawee, Macomb, Montmorency, Muskegon, Oakland, Ottawa, Tuscola, Washtenaw, Wayne, and Wexford Counties; Hamilton and Marion Counties in Indiana, The Michigan Public Service Commission, and The Michigan Tax Tribunal. He has also been appointed as an independent appraiser by the U. S. District Court, Eastern District of Michigan.

### FORMAL EDUCATION

*Greenhills School* - Ann Arbor, Michigan (1976)

*Colgate University* - Hamilton, New York: BA in Liberal Arts - concentrating in Physics-Astronomy (1981)

Courses included Architecture, Economics, Mathematics, Statistics and Economic Geography.

*University of Wyoming* - Laramie, Wyoming: Ph.D. candidate in Astrophysics. (1981-1982)

### III. Introduction

Our analysis and the literature we reviewed is focused on single family residential units, and does not take into account any location-specific analysis. For example, we do not consider whether there are special impacts of an installation on particular historic properties, or commercial properties. Burgoyne understands that this report will be contained in a filing by Smart Communities Siting Coalition in response to the Federal Communications Wireless Telecommunications Bureau request for public input<sup>1</sup> including, but not limited to suggestions offered by Mobilitie in its Petition for Declaratory Ruling.<sup>2</sup>

Burgoyne provides the following analysis following a literature scan on appraiser research on communications towers impact and on Mr. Burgoyne's more than 32 years in business.

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<sup>1</sup> Public Notice, *Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies; Mobilitie, LLC Petition for Declaratory Ruling*, WT Docket No. 16-421 (released Dec. 22, 2016)("Public Notice").

<sup>2</sup> See Mobilitie, LLC Petition for Declaratory Ruling, *Promoting Broadband for All Americans by Prohibiting Excessive Charges for Access to Public Rights of Way* (filed Nov. 15, 2016)(Mobilitie Petition).  
DET02:2350248.1

#### IV. Background

The FCC Notice focuses on small cells and DAS systems. It is our understanding that the placement of these systems could involve:

- Erection of a new tower or monopole 100 to 120 feet in height in public right-of-way. This in fact appears to be proposed by applicant Mobilite.
- Placement of new base station equipment on existing utility poles in the rights of way, which may involve an initial extension of anywhere between 3-15 feet to that pole for placement of an antenna at the top of the pole, and addition of equipment cabinets, plus additional utility infrastructure (meters and disconnect boxes). It is our understanding that the wireless industry is seeking authority in several states to place equipment cabinets as large as 28 cubic feet on the poles, which could then be expanded significantly as of right under the FCC's Section 6409 rules. In addition, there may be ground cabinets for back-up power or for equipment that might otherwise be placed on the poles of up to 50 cubic feet. Under Section 6409, the placement of these facilities could result in up to three additional ground cabinets being added in the right of way in front of a residential unit.
- Erection of new utility poles, sometimes exceeding 40 feet in height, in the public right-of-way for placement of the above referenced equipment
- Please note that public road rights-of-way are often owned in fee by the municipality but are also not uncommonly easements over private property owned in fee by a private citizen or company. This can be common in areas served by the Government Survey System (outside of the original 13 colonies as well as portions of Ohio, Kentucky and Tennessee). As a result, in these cases, neither the municipality, nor the utility, have complete authority to dictate what is permitted within the right of way.<sup>3</sup>
- From the point of view of sound appraisal practice, it is necessary to presume and consider full utilization of rights granted by virtue of a particular authorization. That is, one must consider the impact of a 120 foot pole if a 120 foot is allowed as of right (even if only a 100 foot pole is installed in the instant case at this time). Likewise, in assessing whether the impact of the authorization of a DAS in a residential neighborhood, one would consider the additions and expansions that would be permitted as of right under the Commission's Section 6409 rules.

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<sup>3</sup> "... "[a]ctivities by the owner of the dominant estate [easement holder] that go beyond the reasonable exercise of the use granted by the easement may constitute a trespass to the owner of the servient estate." *Schadewald v Brule*, 225 Mich App 26, 40; 570 NW2d 788 (1997)... p.2

....we decline to infringe on the private property rights of a landowner through unsupported implication, particularly when there is a complete absence of any legislative intent in the LDA to give a public utility free reign to build on an easement as it pleases. ... AT&T provided no legal basis, facts, or documentary evidence to establish that the city or county has the legal authority to decide on the nature, size, or scope of equipment a utility may install in a utility easement or whether the city or county actually considers said questions when they issue a building permit...p.3. 289 Mich App 70 (2010)

Thus, unless a provider can agree otherwise, if a DAS cabinet is not subject to concealment elements, it appears an appurtenance up to 6 feet could be attached horizontally to the same pole, and that appurtenance would only be subject to the limits that might be imposed by the owner of the pole.

- In this case, I have attempted to consider the impacts of various “small cell” and “DAS” installations by Mobilitie and others, both in light of, and without considering the impact of the FCC Section 6409 rules. I have also looked at state legislation and considered possible impacts if facilities of the permitted size were installed.

## V. Areas of Concern

The following areas of concern have been considered and investigated. The most significant are discussed in the following sections.

- Market resistance (or stigma) in general.
- Aesthetics.
- Underground Utilities.
- Changes in the highest and best use of properties.
- Wireless infrastructure and service providers' history of paying for the right to place towers on private property.
- Perceived safety risks from potential failure of a structure.
- Right of way easements

### A. Market Resistance

Market resistance (or stigma) in general is quantified in scholarly articles and peer-reviewed journal publications as it relates to the impact of communication towers and equipment on nearby property values. Hedonic studies and surveys generally address market resistance to the placement of new towers or equipment without regard to the cause of said market resistance.

There has been significant research regarding the question of the impact on residential property values from construction of cell phone towers in neighborhoods. The results of these studies vary but they commonly indicate that there is a significant impact. While the magnitude of the impact varies, the studies uniformly indicate that there is a significant impact on residential property values from installation of cell phone towers. Not surprisingly, the studies that show little or no impact are universally commissioned by and paid for by the telecommunications industry.

Most studies have dealt with more conventional, larger towers and not DAS installations. These studies would nevertheless be directly applicable to the proposed 100 to 120 foot monopole referenced on the previous page. As to “small cell” and DAS

installations, it should be noted that “small cell” references the size of the coverage area and not necessarily the size of the equipment. Furthermore, small cell and DAS installations will generally be located much closer to nearby properties and they will be installed in hundreds of locations ubiquitously. The FCC Public Notice dated December 22, 2016 states “Although the facilities used in these networks are smaller and less obtrusive than traditional cell towers and antennas, they must be deployed more densely – *i.e.*, in many more location – to function effectively (Page 1).

In addition, to numbers that exceed the location of larger towers by orders of magnitude, small cell and DAS installations are often directly within the line of site (midway up a 40 foot pole, for example) and even include ground cabinets, which are particularly egregious. Even if the individual impact of small cells is lesser than for larger towers (which is by no means a given), this may be offset or partially offset by the location, closer proximity and the numbers that exceed tower installations by orders of magnitude. Some of the studies are briefly discussed below.

Sandy Bond and Ko-Kang Wang performed a 2005 study in New Zealand where they support a 15% diminution in residential property value within 300 Meters of communication antennas. Their Summer 2005 publication in the *Appraisal Journal* (as published by the Appraisal Institute, Summer 2005, Pages 256 – 277) summarizes this study. They indicate survey results ranging from 10% to over 20% diminution, which is supported by multiple regression analysis (a hedonic study) indicating 21% diminution in residential property values.

Sandy Bond also performed and presented a study from December 2003 in Florida that supported just over 2% diminution.

Stephen L. Locke and Glenn C. Blomquist published “The Cost of Convenience: Estimating the Impact of Communication Antennas on Residential Property Values” in *Land Economics* in February 2016. This is the most current study. They conclude that a visible antenna up to 1,000 feet away (vs 4,500 feet as the control) results in a market diminution of 1.82% for residential homes (\$3,342 per home in the market studied). While this seems like a relatively small percentage, they correlate this to an Aggregate impact of a reduction of market value of Ten Million Dollars when applied to all of the homes around a single tower in their study area.

While there have not been any scientific studies of the impact on property values from small cell and DAS deployments, there are many anecdotal examples indicating both a negative market perception and adverse impacts on property values. (Of course, negative market perception is precisely what causes an adverse impact on property values). These include published articles and petitions from Real Estate Professionals ranging from Manhattan to Burbank indicating negative impact, reduced property value, and market resistance. From an August 10, 2010 article in the New York Times...

*“TINA CANARIS, an associate broker and a co-owner of RE/MAX Hearthstone in Merrick, has a \$999,000 listing for a high ranch on the water in South Merrick, one of a handful of homes on the block on the market. But her listing has what some consider a disadvantage: a cell antenna poking from the top of a telephone pole at the front of the 65-by-100-foot lot. “Even houses where there are transformers in front” make “people shy away,” Ms. Canaris said. “If they have the opportunity to buy another home, they*

do.” She said cell antennas and towers near homes affected property values, adding, “You can see a buyer’s dismay over the sight of a cell tower near a home just by their expression, even if they don’t say anything.”

## B. Aesthetics and Underground Utilities

In 32 years of experience as a Real Estate Appraiser specializing in detrimental conditions, takings, adverse impacts and right-of-way, I have found that aesthetics (or rather the adverse impact on aesthetics) of externalities routinely has the largest impact on property values. As a result, proximity to towers of all types (cell, wind turbine, and electric transmission) has an impact on property values. The same is true with all sorts of surface installations such as pump stations and communication equipment boxes. This would apply to new small cell and DAS equipment, although again, one would expect that the less intrusive the facility, the less significant the impact. Small cell and DAS installations can be unsightly, bulky, inconsistent, and even noisy. A few demonstrative photos are included on Page 10.

While it is certainly recognized that DAS systems and Cellular antennas are an important part of our nation’s infrastructure, and that it is inevitable that new antennas will need to be installed as we move into the future, it is important for municipalities (and property owners, in the case of right-of-way easements) to retain some control over the size, location, scope, expansion, and characterization of the installations. This is because adverse impacts from negative externalities vary considerably with the size, location, scope, expansion, and characterization of the installations.

All things being otherwise equal...

- Larger facilities have a greater impact than smaller facilities.
- Facilities on the ground and located closer to common sight lines have a greater impact than those that are less visible.
- Underground facilities have a lesser impact than above-ground facilities in most instances (although there are cases where the structures required for vaulting may be as intrusive as the above-ground facilities).
- Streamlined and contained facilities have a lesser impact than unorganized conglomerations of diverse elements.
- Impact tends to lessen over time as a facility remains unchanged so that changes and expansions have an additional negative impact.
- Facilities that are designed to be in balance with existing utility structures have a lesser impact than less harmonious installations. For example, an above ground facility will have a greater impact in an area with existing underground utilities. And a new pole that is three times higher than existing poles will have a greater impact than a new pole that is the same height as existing poles. Please reference the proposed Tx 120 (120 foot) Mobilite tower shown below (particularly as compared to the existing wood utility poles).





Likewise, please compare this set of examples of unorganized and uncontrolled conglomerations of diverse elements with more streamlined installations.



It is not an accident that the articles, cases, and publications of the wireless industry often address circumstances that involve *hiding* wireless facilities, or show pictures of physically small “small cells” neatly mounted. Hidden, smaller, and neatly mounted “small cells,” will have an impact, but that impact will be lesser than other alternatives. Likewise, there needs to be control over future growth of installed facilities.

It is my opinion that the Federal Communications Commission should analyze the potential impact of small cell and DAS deployments in detail before considering additional rules. It is important for the Commission to have information as to which installations may have *De Minimis* impacts and which may have significant impacts before establishing national rules.

It is also my opinion that municipalities need to retain significant regulatory control over these installations in public rights-of-way in order to minimize impacts and protect the health, welfare, and safety of their residences in the same way that other regulations and the reasonable exercise of police powers have over the last hundred years.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 7, 2017.

A handwritten signature in black ink, appearing to read "David E. Burgoyne".

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