PIKE LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

VIA FEDEX

January 22, 2019

Gwen R. Pinson, Executive Director
Kentucky Public Service Commission
211 Sower Blvd
P.O. Box 615
Frankfort, KY 40602-00384

Re: Response to Request for Intervention
PSC Case No.: 2018-00384
Site Name: Old Landing

Dear Ms. Pinson:

We have received and responded to comments from Donnie Benton concerning this tower site. Please find enclosed our response to their concerns and make this letter and its enclosures a part of the administrative record. Do not hesitate to contact us with any concerns regarding this matter

Sincerely,

David A. Pike
Attorney for New Cingular Wireless PCS, LLC
d/b/a AT&T Mobility

Enclosure

cc: Donnie Benton

RECEIVED
JAN 23 2019
PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)	
NEW CINGULAR WIRELESS PCS, LLC,	)	
A DELAWARE LIMITED LIABILITY COMPANY,	)	
D/B/A AT&T MOBILITY	)	
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC	)	CASE NO.: 2018-00384
CONVENIENCE AND NECESSITY TO CONSTRUCT	)	
A WIRELESS COMMUNICATIONS FACILITY	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY OF LEE	)	

SITE NAME: OLD LANDING

* * * * * * *

RESPONSE TO COMMENTS FROM DONNIE BENTON

Applicant New Cingular Wireless PCS, LLC, d/b/a AT&T Mobility ("AT&T Mobility"), by counsel, makes this Response to the comments submitted by Donnie Benton in the within proceeding. Applicant respectfully states, as follows:

1. Donnie Benton has voiced generalized concerns to the Kentucky Public Service Commission regarding health effects, property values, and aesthetics for the facility proposed in the within Application. However, as presented in the subject Application and as discussed herein below, there is no ground for denial of the subject application, and substantial evidence supports approval of the requested Certificate of Public Convenience and Necessity ("CPCN").

2. In accordance with KRS Chapter 100 and the Telecommunications Act of 1996 ("TCA"), the environmental effects of radio frequency emissions are not at issue in this case and may not be considered by the Public Service Commission in its evaluation of

the proposed facility. Radio frequency emissions are the subject of federal regulation, and the TCA expressly prohibits state regulation of wireless communications facilities on the basis of environmental effects or radio frequency emissions. Specifically, the Federal Telecommunications Act of 1996, as codified at 47 U.S.C. Section 332(7)(B)(iv), provides:

> "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 [Federal Communication] Commission's regulations concerning such emissions."

3. Applicant is licensed by the Federal Communications Commission ("FCC") to provide wireless communications services to the area to be served by the proposed wireless communications facility, and a copy of the relevant FCC license granted to AT&T Mobility was filed as part of the subject Application. Accordingly, Applicant is subject to the FCC regulation referenced at 47 U.S.C. Section 332(7)(B)(iv).

4. The U.S. Court of Appeals for the Sixth Circuit has upheld the prohibition of consideration of the environmental effects of radio frequency emissions in Kentucky Public Service Commission proceedings regarding wireless communications facilities. Specifically, in Telespectrum, Inc. v. Public Service Commission, 227 F.3d 414 (6th Circuit 2000), the Court held:

> "[C]oncerns of health risks due to the emissions may not constitute substantial evidence in support of denial by statutory rule, as no state or local government or instrumentality thereof may regulate the construction of personal wireless 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.' *47 U.S.C. § 332(c)(7)(B)(iv).*" Id at 425.

Earlier this year, the Sixth Circuit reemphasized the federal statutory prohibition of consideration of radio frequency emissions effects in Robbins v. New Cingular Wireless

PSC, LLC, 854 F.3d 315 (6th Cir. 2017):

> "Congress passed the TCA to foster industry competition in local markets, encourage the development of telecommunications technology, and provide consumers with affordable access to telecommunications services. *Telecommunications Act of 1996*, Preamble, *Pub. L. No. 104-104, 110 Stat. 56 (1996)*. The TCA furthers those goals by preventing local governments from impeding the siting and construction of cell towers that conform to the FCC's RF-emissions standards. *See 47 U.S.C. § 332(c)(7)(B)(iv)*. By delegating the task of setting RF-emissions levels to the FCC, Congress authorized the federal government—and not local governments—to strike the proper balance between protecting the public from RF-emissions exposure and promoting a robust telecommunications infrastructure. *See id.; In the Matter of Procedures for Reviewing Requests for Relief from State & Local Regulations Pursuant to Section 332(c)(7)(b)(v) of the Commc'ns Act of 1934 in the Matter of Guidelines for Evaluating the Envtl. Effects of Radiofrequency Radiation, 12 F.C.C. Rcd. 13494, 13505 (1997)*." Id. at 319-320.

Of course, as they are required to do, the U.S. District Courts in Kentucky have followed the Sixth Circuit's lead in application of the TCA. PI Telecom Infrastructure V, LLC v. Georgetown-Scott County Planning Commission, 2017 U.S. Dist. LEXIS 18920 (E.D. Ky. 2017) ("... the TCA provides that local cell tower regulation "shall not prohibit or have the effect of prohibiting the provision of personal wireless services."")

5. The proposed wireless communications facility has been designed and will be constructed and operated in accordance with all applicable federal, state and local regulations applicable to such facilities. The tower does not present a risk to public health and welfare.

6. In response to Mr. Benton's generalized concerns regarding property values, Applicant has attached a report from Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS, a property valuation expert, concluding that the proposed tower will not have a negative impact on surrounding property values as **Exhibit A**. In this instance, Lee County has not adopted planning and zoning regulations, nor has it adopted regulations regarding the

placement, construction and modification of wireless communications facilities. Any property purchased in Lee County is acquired with the understanding that the surrounding neighbors are free to develop their property in any manner they desire without regulation from local government or input from area residents. This circumstance is factored into the sales price of all real estate in Lee County. For this reason, area residents have no reasonable expectation of input into the land use of surrounding properties or the impact a proposed land use will have on their property values.

7. In response to generalized concerns regarding aesthetics, the proposed facility has been designed, configured, and located in such a manner that it will prevent or limit potential adverse effects on surrounding properties. Furthermore, the tower will be galvanized steel to minimize its visibility. Despite Mr. Benton's characterization of the area as residential, the general area where the proposed facility is to be located is mountainous and heavily wooded.

8. In response to generalized concerns regarding the tower lighting, the FAA conducted an aeronautical study and determined that the tower must be lit with a med-dual system to insure air safety. The dual system is designed with an alternating white light in the day-time and a red light at night-time to minimize visibility to area residents.

9. In response to generalized concerns regarding noise and traffic, other than an occasional maintenance crew visiting the site, the proposed facility will be unmanned. The only limited sound the facility will make is the use of a back-up generator necessary to provide power to the facility in the event of an emergency power outage.

10. In response to generalized comment that communication towers should be located at least two miles from residential uses, the tower must be located at the proposed

location and proposed height to provide necessary service to residents in the subject area because the nature of the technology requires a facility to be located within the area to serve the area. Applicant's radio frequency engineers conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Applicant. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements was submitted with the application. AT&T Mobility is a provider of essential wireless voice and data services to residential and commercial customers. AT&T Mobility delivers these services over a network of sites (i.e., antennas mounted on a support structure, with associated radio transmitting equipment) which are linked to one another and which transmit and receive signals to and from mobile phones and other wireless communication devices. In addition to expanding and improving voice and data service for AT&T mobile customers, this site will also provide wireless local loop ("WLL") broadband internet service in the subject area. As a participant in the FCC's Connect America Fund Phase II (CAF II) program, AT&T is aggressively deploying WLL service infrastructure to bring expanded internet access to residential and business customers in rural and other underserved areas. WLL will support internet access at the high speeds required to use and enjoy the most current

business, education and entertainment technologies. Broadband service via WLL will be delivered from the tower to a dedicated antenna located at the home or business receiving service and will support downloads at 10 Mbps and uploads at 1 Mbps.

11. The U.S. Court of Appeals for the Sixth Circuit has upheld that lay opinion or generalized concerns are not substantial evidence justifying a rejection of this application. Any decision rendered by state or local authorities must be in writing and supported by substantial evidence in a written record. Federal Courts in the 6th Circuit has defined "substantial evidence" in previous cases. For example, the locality's own zoning requirements are an example of substantial evidence. Cellco Partnership v. Franklin Co., KY, 553 F. Supp. 2d 838, 845-846 (E.D. Ky. 2008). Of course, in this instance Lee County has not adopted zoning requirements. Courts in the 6th Circuit have found that lay opinion is not substantial evidence. Cellco Partnership at 852 and T-Mobile Central, LLC v. Charter Township of West Bloomfield, 691 F.3d 794, 804 (6th Cir. 2012). They have also found that unsupported opinion is not substantial evidence. Cellco Partnership at 849. Generalized expressions of concerns with "aesthetics" are not substantial evidence. Cellco Partnership at 851. Claims the tower is unsightly are generalized expressions of aesthetical concerns and the same objection could be made by any resident in any area in which a tower is placed. Cellco Partnership at 852. General concerns that the tower is ugly or unwanted near an individual's residence are not sufficient to meet the 6th Circuit substantial evidence test. T-Mobile Central at 800. Finally, anyone who opposes a tower in their backyard can claim it would be bad for the community, not aesthetically pleasing, or is otherwise objectionable, but such claims would not constitute substantial evidence. T-Mobile Central at 801.

WHEREFORE, there being no ground for denial of the subject application and substantial evidence in support of the requested CPCN, Applicants respectfully request the Kentucky Public Service Commission:

(a) Accept this Response for filing;

(b) Issue a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein without further delay; and

(c) Grant Applicant any other relief to which it is entitled.

Respectfully submitted,

David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 21st day of January 2019, a true and accurate copy of the foregoing was sent by U.S. Postal Service first class mail, postage prepaid, to Donnie Benton, 791 Evelyn Road, Beattyville, Kentucky 41311.

David A. Pike
Attorney for Applicant

LIST OF EXHIBITS

A	Real Estate Valuation Report

EXHIBIT A
REAL ESTATE VALUATION REPORT

Real Estate Value Impact Study

For

Proposed Wireless Communications Facility
New Cingular Wireless, PCS, LLC, d/b/a AT&T Mobility
Site Name: Old Landing
PCS Case #2018-00384 / Site Number KYL06083
Assessor Parcel Number: 010-00-00-012
400 Evelyn Road
Beattyville, Lee County, Kentucky 41311

Date of Report

January 20, 2019

Prepared For

Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40601

Prepared By

Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS
Realty Solutions Co., Inc.
P.O. Box 20983
Louisville, KY 40250

January 20, 2019

Realty Solutions Co., Inc.
Finding Answers to Real Estate Questions

Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40601

Subject: Real Estate Value Impact Study
Proposed Wireless Communications Facility
New Cingular Wireless, PCS, LLC, d/b/a AT&T Mobility
Site Name: Old Landing
PCS Case #2018-00384 / Site Number KYL06083
Assessor Parcel Number: 010-00-00-012
400 Evelyn Road
Beattyville, Lee County, Kentucky 41311

Commissioners:

I have completed an impact study regarding potential influence of wireless communications tower facilities on market value of surrounding properties, specifically addressing the subject project low-density residential and agricultural neighborhood. The study consists of analyzing sale activity and value trends of properties located in proximity to cell towers, as compared to properties which are not in proximity but are competitive as replacements in the market.

Based on investigation and analysis of reactions of market participants buying, occupying, and selling real estate properties, it is clear that the proposed facility will not result in any diminution of value for low-density residential and agricultural properties located with proximity to the proposed facility, or the neighborhood in general. Consistently, market evidence shows this type of facility has not, and does not, negatively impact surrounding property, and supports the positive influences on value and demand for real estate due to expansion of public utilities, including wireless telecommunications infrastructure.

The attached report illustrates the research and analysis performed. Thank you for the opportunity to present this information. Please contact me if you have questions or comments.

Respectfully,

Glen D. Katz

Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS
Realty Solutions Co., Inc.
P.O. Box 20983
Louisville, Kentucky 40250

Office: (502) 396-6664 Email: gkatz@usa.net Web: www.RSAPPRAISE.com

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Summary of Facts and Conclusions

Problem Identification

Proximity impact is a frequent question in real estate. In the course of studying value influence due to proximity of private or public utility facilities to residential, commercial and agricultural properties, I have performed impact analysis on wireless communications tower facilities, high-voltage overhead transmission lines (HVOT), storage towers, oil pipelines, agricultural facilities, and federal interstates. For this report, the analysis consists of analyzing value trends of properties in proximity to public utility tower facilities.

Residential and commercial properties, whether urban, suburban or rural, and agricultural properties, follow similar demand patterns. In a 2012 study article published in *The Appraisal Journal* 80, (no. 1 (Winter 2012): 30-45), James A. Chalmers identifies three general characteristic that drive property sensitivity to price effects:

- use;
- size; and
- uniqueness.

The subject property is identified by a site and neighborhood analysis. Neighborhood and market characteristics are observed to understand the four forces that affect value; social forces, economic forces, governmental forces, and environmental forces.

Non-suburban, rural residential and commercial properties are frequently part of agricultural or recreational environments. Site sizes are larger, or they may be adjacent to large land parcels. They are also unique; because of the low-density development characteristics, there are fewer available, and even fewer available with specific classes of features such as site size, quality, floor plan, or auxiliary buildings. Rural properties are similar to urban and suburban properties in terms of use, but are superior in the sensitivity categories of site size and uniqueness/scarcity. In summary, they share the same demand characteristics, but are more resilient than other residential and commercial categories.

The subject neighborhood does not have land-use zoning regulations. This is a frequent occurrence in low-density development and rural areas, and there are accepted risks by property owners because of the lack of control on land uses. Without localized land-use regulations, all legal uses of land are available. Land uses with a high impact on surrounding properties or a community in general, typically are characterized as producing adverse noise, odor, traffic, lighting, view, or neglected construction.

As a result, there is a higher risk expectation by buyers when making purchase decisions, regarding the quality and type of use of neighboring un-zoned properties. These risks are reflected in prices paid and resulting value trends. Regardless of these risks and buyer activity, communities without land-use controls continue to expand and develop need and demand for public utilities. The neighborhoods and communities are still influenced by social, economic, governmental, and environmental forces. There is no difference in regard to impact on surrounding values from tower communication facilities if a neighborhood does not have land-use zoning regulations.

Facility Identification

The facility will be in a low-density residential and agricultural area. The construction improvements will be comprised of a 355' self-support structure with 15' lightning arrestor, totaling a structure height of 370 feet. Base elevation will be 1043.1 feet. The construction will be located on a leased site area with a 50' x 50' fenced compound. There will be supporting storage cabinets, and gravel ground cover. There will be space available for co-location of other wireless service providers in the facility. The facility will be accessed by a gravel covered easement driveway extending from the east side of Evelyn Road. These characteristics are some of the most common for wireless communications facilities in similar areas of the United States.

Study Methodology

The impact study applying to this project consists of studying real estate value trends at existing tower locations. The methodology is comprised of paired sales and sale/resale analyses, focusing on measurement of value change over time, and; direct comparison of properties with, and without, distance or view proximity exposure. Specifically, the following steps comprise the analysis:

- Identify existing tower locations with surrounding developed land uses.
- Examine the surrounding neighborhood and market area to determine if there are compatible and competing properties with adequate sale activity to provide statistically reliable and valid results.
- Categorize property sales by proximity characteristics for measurement of influence: A distance of 500' to 750' is the threshold of measure for the close-proximity category, depending on the topography and direction of development characteristics. At further distances the category changes to non-proximity, as tower views become blurred or obscured by trees, roofs, or topography. Other skyline features of power lines, towers, or tanks also absorb tower view.
- Track value change over time for the two proximity categories and compare the results to determine if there is a difference due to tower facility exposure, or;
- Track value change of properties before and after a tower facility is constructed. Then compare results to determine if there is a difference between the two categories attributed to tower facility exposure.

Based on the data and analysis for tower projects like the subject; values and rates of value change for proximity and non-proximity properties are similar. There is no compelling evidence that either the anticipation of, or the existence of, cell tower facilities negatively impacts surrounding property values. This is not unusual or unexpected. The market forces that drive real estate value also create complimentary demand for public utility projects. These market forces are discussed as follows:

- **Social Forces:** Social forces are influenced by; population, education, and lifestyles. There is increasing need for communication facilities, and the public demands satisfying that need as part of the core supply of public services. In particular, cellular phone service has become a predominant function in businesses, schools, and social services. Regarding households, over 50% are served solely by cellar phone service. Regarding

emergency services, over 70% of emergency calls are made through cellular phones. As a result, anything less than consistent in-building service is detrimental to value or demand for real estate.

- **Economic Forces:** Economic forces are influenced by; employment, wages, business, schools, and regional community development. Effective communications facilities are required for education and efficient and competitive diversification of work forces. Cellular service has a direct connection to economic development. Cellular signal capacity creates a significant amount of positive externalities for its users and their communities.

- **Governmental Forces:** Governmental forces respond to community needs for; laws and policies; public services; zoning; and building codes. Many jurisdictions have specific guidelines or comprehensive plans requiring government agencies to expand public utilities and services. The regulations that enable public utilities like cell service providers are a direct reaction to public needs, particularly for education, economic purposes, and health and safety services. Another major impact of governmental influences in expansion of public services is developing wider choices of service providers and related fees through competition in the private sector. This helps erase the digital divide problem, which is the economic gap between those who have adequate access to services and those who do not. This gap is influenced by income, location, and level of education among other factors, and can affect further development in areas where the divide exists.

  As indicated prior, the subject neighborhood does not have land-use zoning regulations. Buyers have absorbed the risk associated with lack of zoning when making purchase decisions regarding the quality and type of use of neighboring un-zoned properties, and related influences on value. Regardless of these risks and buyer activity, communities without land-use controls continue to expand and develop need for public utilities.

- **Environmental Forces:** Environmental forces are the final determining factor. They deal with climate, topography/soil, natural barriers, transportation systems and linkages, and the nature and desirability of the neighborhood surrounding a property. These forces shape population location, growth, and where supporting infrastructure will be most effective and valuable as a resource.

Market Concepts for Property Ownership

Many times, concepts regarding property rights, property insurability, and property mortgage are topics for questions and discussion from property owners regarding value influences. In summary, the following information is provided for insight.

Property Rights In regard to property rights, owners near cell tower facilities retain all rights normally associated with ownership. There are no additional easements, encroachments, or use restrictions on surrounding properties.

Property Insurability In regard to insurability, there are no changes in risk to physical property, or ownership, or subsequent insurance availability or cost. Interviews with insurance professionals, mortgage lenders, title companies, and property owners, confirms there are no conflicts on the availability, or premiums for, physical property or title insurance on properties located near cell towers.

Mortgage Terms In regard to lending, there is no influence on mortgage availability or terms. The Federal Housing Administration (FHA) through the Department of Housing and Urban Development (HUD), provides mortgage insurance on loans made by FHA-approved lenders throughout the United States. FHA insures mortgages on single and multifamily homes, including manufactured homes and hospitals. It is the largest insurer of mortgages in the world. FHA has minimum property standards for its loan programs contained in HUD Handbook 4000.1. In particular, there is a section on 'Externalities' and minimum requirements for property compliance. Externalities are identified by HUD as off-site conditions that have an adverse influence on a property, such as heavy traffic, special airport hazards, proximity to high pressure gas lines, overhead electric power transmission lines and local distribution lines, smoke, fumes, and other offensive or noxious odors, and stationary storage tanks.

Cell towers are not identified, mentioned, or considered a potential hazard for surrounding properties by FHA/HUD. Cell towers are not, and historically have not been, a criterion for hazard analysis in obtaining FHA/HUD funding insurance for mortgage lenders.

The Veterans Administration (VA) helps Servicemembers, Veterans, and eligible surviving spouses become homeowners. VA provides home loan guaranty benefits and other housing-related programs to help buy, build, repair, retain, or adapt homes for occupancy. VA Home Loans are provided by private lenders, such as banks and mortgage companies. VA guarantees a portion of the loan, enabling the lender to provide the borrower with more favorable terms.

VA guidelines (Chapters 10 and 12) identifies HUD Handbook 4000.1 as the resource for minimum property requirements. An addition, in reiterating hazard issues in the VA guidelines, cell towers are not identified, mentioned or considered a potential hazard. Cell towers are not, and historically have not been, a criterion for hazard analysis for obtaining VA loans.

The United States Department of Agriculture (USDA), through its Rural Development program (RD), assists approved lenders in providing low- and moderate-income households the opportunity to own adequate, modest, decent, safe and sanitary dwellings as their primary residence in eligible rural areas. The program provides a 90% loan note guarantee to approved

lenders in order to reduce the risk of extending 100% loans to eligible rural homebuyers. USDA publishes Handbook 3550 (HB 3550) containing minimum property requirements for USDA loan programs. Cell Towers are not included for consideration. Cell towers are not, and historically have not been, a criterion in hazard analysis for obtaining loans under USDA/RHS programs.

The Federal National Mortgage Association (FNMA), popularly known as Fannie Mae, is a government-sponsored enterprise (GSE). Fannie Mae purchases and guarantees mortgages made to borrowers via the secondary mortgage market, creating liquidity for Banks and Credit Unions. The mortgages it purchases and guarantees must meet strict criteria. Its "Selling Guide" publication is the primary information guide for all secondary mortgage market lending. The Selling Guide does not include cell towers for any specific analysis in the publication. Cell towers are not, and historically have not been, a hazard criterion in analysis for obtaining mortgage loans under FNMA, or Freddie Mac (FHLMC).

Study Analysis Conclusions

As illustrated by study results, both in this report and in published studies nationally, the forces of value are consistent. Public utilities and related services are essential to meeting current and future requirements for standards of living. Public utilities and related services, by nature, expand to meet demands of expanding population and community growth. The benefits of modern communication facilities for economic and community development are clear. Without adequate services, there will be a tendency for decreasing demand and property values in a neighborhood. Where services already exist, coverage and data capacity may need to be adjusted due to population changes. As a result of meeting population needs, telecommunications facilities have become a common part of the landscape in much the same way that power, telephone, and other utilities have. Like all utilities, there is requirement for telecommunications facilities in strategic locations in any community.

Property owners near tower facilities, other highly visible utility structures, underground pipelines, associated easements, etc., are not penalized on value. There are no changes to ownership rights. Insurability is not affected. Mortgage terms to buyers and owners are not influenced. Consistently, communications tower structures, like overhead electric distribution lines, signage, and buried utility easements, are beneficial. Due to expanding utilities and increased services, residential, commercial and agricultural properties experience positive influences. Because of the deployment of similar structures over the past several decades, owners and buyers of real estate expect service-related infrastructure. Everyone always expects excellent cell phone reception, and that connectivity requires adequate cell phone infrastructure. Cell towers satisfy demand and are visibly absorbed by the landscape of a neighborhood and lifestyles of the population. Cell towers are much like other modern infrastructure. Although cell towers may be noticed initially, they quickly fade into the background and have no negative effect on value – just as telephone poles, utility lines, streetlights, and the other infrastructure components of modern life do not negatively affect real estate values.

Therefore, based on investigation and analysis of reactions of market participants buying, occupying, investing, and selling real estate properties, it is clear that the proposed tower facility will not adversely impact the demand for, or value of, properties in the immediate or general

area. Consistently, market evidence shows this type of tower facility has not, and does not, negatively impact surrounding property, and supports the positive influences on value and demand for real estate due to expansion of public utilities, which includes wireless telecommunications tower infrastructure.

Report Development – Scope of Work

Extent to which the property is identified

- The subject property is identified by a site and neighborhood analysis using aerial maps and government census data. Construction plans, aerial maps, and government census data is reviewed. Neighborhood and market characteristics are observed to understand the four forces that affect value:
  - social forces;
  - economic forces;
  - governmental forces, and;
  - environmental forces

Extent to which the property is inspected

- Reviewing maps and aerial photography of the surrounding neighborhood to recognize land uses and development patterns.
- Reviewing the tower facility development plans

Type and extent of the data researched

- Tower facilities, wireless communications, high-tension electrical transmission, or water tower storage tanks, are identified for analysis based on residential and commercial exposures.

Type and extent of analyses applied

The data extraction is available through several econometric methods. Sales of residential properties are tracked to establish rates of change in value due to market conditions, and to determine potential influence from proximity to tower facilities. Comparison is made between value trends of properties in proximity, and without proximity to tower facilities. Three methods of data extraction are discussed:

- First is analysis of "before and after" sale data. This method tracks value trends before and after installation of a tower facility. Property sale data before a facility is installed is compared to sale data occurring after a facility is installed. This method will have limitations when a facility installation occurred in the distant past. Older sales occurring before the installation frequently experience significant changes before they resell in a current market: physical changes such as renovation, updating, addition, and/or economic changes (i.e.; 2007-2009 recession, changes in highest and best use, etc.) In these cases, value change over a long time period is attributed to multiple sources, and allocating value change solely to tower influence would be misleading.

- Next is "unit-value" comparison of properties that are functionally identical in all aspects except proximity. The unit value will typically be price per-square-foot of gross living area (sale price / above-grade living area). The information will reveal any differences between the two proximity categories. While providing excellent evidence, this method has limitations due to the number of property differences and related difficulty in matching properties that are adequately similar with the exception of proximity.

- The most common analysis method is "timeline trend" analysis. This compares value trends of properties located in close proximity to existing tower facilities, to value trends of properties located without proximity. Rates of value change due to market conditions (time) are compared between the two property types to extract any differences due to proximity to a tower facility. This is most meaningful with sale data from the post-recession period beginning in 2011, to the current market.

In all cases, the methodologies allow controlling the physical and locational attributes of the two sets of properties. In this way, price and value effects or differences due to the other characteristics of the properties are held constant, and the effect, if any, due to proximity is isolated. For this study, because of the data currently available, the "before and after" and "timeline trend" methods are utilized.

Purpose of Report

The purpose of this report is to develop an opinion of potential market value impact on surrounding properties from proximity to the identified wireless communications tower facility.

Intended User of the Report

This report is intended solely for use by Applicant, and the identified governmental review panel for the project, Kentucky Public Service Commission.

Intended Use of the Report

The intended use of the reported opinions and conclusions is to assist Applicant, and the governmental review panel, Kentucky Public Service Commission, in making permitting decisions regarding the subject property. This report is not intended for any other use. The undersigned, Glen D. Katz, recognizes this report will be submitted as part of the public record.

Definition of Value

This report analysis is based on ***'market value'*** of real estate. The Appraisal Institute's ***The Dictionary of Real Estate Appraisal, 6th Edition***, includes the following entry for "market value", which contains the most widely accepted components of market value.

- *The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all terms requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither party is under undue duress.*

Case Study Introduction

The following case studies are developed through researching market activity of residential properties in neighborhoods adjacent to tower facilities. After identification of a tower facility, whether wireless communications, high-tension electrical, or water storage tower, sale activity of homes are analyzed. Methods of data extraction are discussed as follows.

Timeline Trend Method

For projects that have been in place for a long period, timeline trend analysis is very applicable. The steps of analysis consist of:

- Research properties with tower proximity that have sold repeatedly in the identified period.
- Determine the annual rate of market value change, appreciation or depreciation, for properties in the proximity category.
- Research properties in the same neighborhood, without tower proximity, with repeat or back-to-back sales.
- Determine the annual rate of market value change, appreciation or depreciation for properties in the non-proximity category.
- Compare value change trends between the two groups of properties to extract any value change differences related to proximity influence.

Before and After Method

For projects recently constructed, the before and after method steps of analysis consist of:

- Research residential properties with tower proximity that sold prior to the tower installation, and then sold again after the tower installation.
- Determine the annual rate of market value change, appreciation or depreciation, for properties in the proximity category.
- Research properties in the same neighborhood without tower proximity that sold prior to the tower installation, and then sold again after the tower installation.
- Determine the annual rate of market value change, appreciation or depreciation, for properties in the non-proximity category.
- Compare value change trends between the two groups of properties to extract any value change differences related to proximity influence.

Methodology Summary

The time range for sale data is from 2011 to the current market. This minimizes potential influence from the 2007-2009 recession. In order to track rates of value change during the period, repeat or back-to-back sales of individual residential properties inside and outside a proximity distance range of 500' to 750' from a facility are researched.

In order to focus on the influence market conditions and proximity on appreciation or depreciation, emphasis is placed on properties with stable physical characteristics, and without unusual sale conditions or buyer/seller motivation influences. Specifically, sales involving properties with the following characteristics are discounted from analysis:

- Properties with significant physical changes that would influence value between the initial and subsequent transfers, such as renovation, construction addition, or incursion of deferred maintenance or neglect resulting in unusual physical deterioration and market response.
- Properties with distress socioeconomic characteristics, such as foreclosure, short-sales, auctions, and sales of bank-owned homes.
- Properties with unusual buyer or seller motivations, such as family transactions, estate liquidation, or investor activity in a predominantly owner-occupied market.
- Properties close to interstates and limited access roads are avoided to ensure home sales were not affected by highway access or traffic noise variables.
- In the study, sale price is adjusted by netting out seller-paid concessions if they occur.

If the above types of transfer activity are prevalent in a neighborhood, the facility and neighborhood is removed from consideration. The focus is to measure market activity that is not influenced by unusual property-specific or market-specific characteristics.

The following case studies illustrate analysis for two categories of tower facilities; high-tension electrical transmission lines, and wireless communications tower facilities. Two of the case studies compare rates of value change between proximity and non-proximity properties at existing facilities, and one case study additionally compares values of proximity and non-proximity properties before and after installation of a tower facility.

Case Studies

Case Study 1 – This study involves a high-tension overhead electric power line corridor with lattice construction towers. The corridor traverses a residential single-family and condominium neighborhood. The tower structures and overhead electric lines in this location are located in easements amidst residential subdivision development, crossing a public street in a long diagonal direction, and continuing through residential subdivision development.

The project was installed pre-1993. The value evidence represents sales and resales of properties within 500' proximity to the facility, and outside 500' proximity to the facility. Rates of value change for each of the categories measured, and the results of the two categories of proximity are compared to analyze any potential impact.

Case Study 2 – This study involves a wireless communications facility adjacent to a residential single-family and condominium neighborhood. The tower structure is 219' height, self-support construction.

Installation of the project occurred in 2002. The value evidence represents sales and resales of properties within 500' proximity to the facility, and outside 500' proximity to the facility. Rates of value change of each of the categories are measured, and the two categories are compared to analyze any potential impact.

Case Study 3 – This study involves a wireless communications facility adjacent to a residential single-family detached neighborhood. The structure is 140' height, monopole construction.

Installation of the project occurred in 2016. The value evidence represents sales and resales of properties within 750' proximity to the facility, and outside 750' proximity to the facility. Rates of value change in each of the categories are measured, and the two categories are compared to analyze any potential impact.

For Case Study 3, it is important to note there are repeat sales of individual properties in each category, before and after installation, that illustrate consistent values and rates of value change.

Case Study 1 – Group 1 (Proximity Sales)

- Facility: High tension overhead electric power lines and lattice construction towers, residential single-family detached and condominium subdivision location
- Address: Gutenberg Road, Louisville, Jefferson County, Kentucky
- FCC Identification: N/A
- Year of installation: Pre-1993
- Information source: Maps and individual research
- Neighborhood location: Jeffersontown
- Property Group Identification: Within 500' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is 0.32% to 4.82%. The average rate of appreciation is 3.00%, and the median or middle point of the range is 3.23%.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
4701	Silverado	Pl	11/30/2016	$264,000			
4701	Silverado	Pl	10/26/2018	$273,000	3.41%	23	1.79%
4733	Ferrer	Way	7/26/2011	$141,500			
4733	Ferrer	Way	5/22/2014	$160,000	13.07%	34	4.63%
4802	Burris	Dr	8/10/2012	$127,400			
4802	Burris	Dr	2/17/2015	$135,000	5.97%	30	2.36%
8804	Loch Lea	Ln	12/6/2013	$133,000			
8804	Loch Lea	Ln	12/2/2016	$149,900	12.71%	36	4.25%
8908	Alphin	Ct	5/18/2012	$144,500			
8908	Alphin	Ct	10/19/2017	$147,000	1.73%	65	0.32%
9302	Villa Fair	Ct	4/29/2011	$132,000			
9302	Villa Fair	Ct	6/10/2016	$149,750	13.45%	61	2.63%
9319	Villa Fair	Ct	1/22/2015	$150,000			
9319	Villa Fair	Ct	5/18/2018	$174,000	16.00%	40	4.82%
10509	Vintage Creek	Dr	4/15/2014	$252,000			
10509	Vintage Creek	Dr	9/11/2015	$255,000	1.19%	17	0.85%
10601	Vintage Creek	Dr	3/28/2012	$211,500			
10601	Vintage Creek	Dr	11/25/2013	$225,000	6.38%	20	3.84%
10603	Alderbrook	Pl	2/17/2012	$216,000			
10603	Alderbrook	Pl	4/15/2015	$247,000	14.35%	38	4.54%
					Annual Average		3.00%
					Annual Median		3.23%

Case Study 1 – Group 2 (Non-Proximity Sales)

- Facility: High tension overhead electric power lines and lattice construction towers, residential single-family detached and condominium subdivision location
- Address: Gutenberg Road, Louisville, Jefferson County, Kentucky
- FCC Identification: N/A
- Year of installation: Pre-1993
- Information source: Maps and research
- Neighborhood location: Jeffersontown
- Property Group Identification: Outside 500' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is -0.41% to 8.13%. The average rate of appreciation is 3.63%, and the median or middle point of the appreciation range is 3.16%.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
4310	Lochridge	Pkwy	7/30/2015	$194,000			
4310	Lochridge	Pkwy	1/14/2016	$195,000	0.52%	6	1.12%
4607	Stony Brook	Dr	12/7/2012	$211,000			
4607	Stony Brook	Dr	12/27/2018	$233,240	10.54%	73	1.74%
4615	Stony Brook	Dr	5/10/2013	$159,900			
4615	Stony Brook	Dr	8/18/2017	$181,500	13.51%	51	3.16%
4704	Jolynn	Dr	3/28/2013	$147,500			
4704	Jolynn	Dr	6/1/2016	$159,500	8.14%	38	2.56%
4804	Villa Fair	Rd	7/5/2013	$135,000			
4804	Villa Fair	Rd	7/23/2018	$175,000	29.63%	61	5.86%
4827	Napa Ridge	Way	3/11/2016	$245,000			
4827	Napa Ridge	Way	5/16/2018	$277,000	13.06%	26	5.99%
4904	Flora Springs	Cir	11/5/2015	$242,000			
4904	Flora Springs	Cir	12/13/2016	$258,000	6.61%	13	5.97%
5001	Volney	Ct	12/14/2012	$168,000			
5001	Volney	Ct	11/15/2016	$184,000	9.52%	47	2.43%
5003	Volney	Ct	8/26/2011	$145,000			
5003	Volney	Ct	7/15/2014	$150,200	3.59%	35	1.24%
5105	Cynthia	Dr	3/15/2016	$152,000			
5105	Cynthia	Dr	1/4/2019	$163,500	7.57%	34	2.69%

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Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
8612	Longborough	Way	11/29/2011	$162,000			
8612	Longborough	Way	12/11/2014	$160,000	-1.23%	36	-0.41%
8708	Loch Lea	Ln	12/28/2012	$150,000			
8708	Loch Lea	Ln	3/20/2015	$160,000	6.67%	27	3.00%
8711	Michael Edward	Dr	3/4/2015	$150,835			
8711	Michael Edward	Dr	11/13/2018	$175,000	16.02%	44	4.33%
8718	Loch Lea	Ln	8/2/2011	$147,000			
8718	Loch Lea	Ln	8/4/2017	$198,370	34.95%	72	5.81%
8808	Halford	Way	11/18/2014	$215,000			
8808	Halford	Way	3/23/2017	$256,000	19.07%	28	8.13%
9102	Marse Henry	Dr	3/15/2013	$157,000			
9102	Marse Henry	Dr	4/17/2015	$163,500	4.14%	25	1.98%
9115	Marse Henry	Dr	5/7/2015	$166,000			
9115	Marse Henry	Dr	5/15/2017	$188,000	13.25%	24	6.55%
9116	Marse Henry	Dr	5/24/2013	$140,000			
9116	Marse Henry	Dr	11/7/2018	$173,000	23.57%	66	4.32%
9311	Marse Henry	Dr	7/13/2012	$189,000			
9311	Marse Henry	Dr	2/18/2015	$197,900	4.71%	31	1.81%
9403	Talitha	Dr	6/25/2014	$142,000			
9403	Talitha	Dr	9/12/2018	$178,500	25.70%	51	6.09%
9405	Marse Henry	Dr	3/22/2013	$157,000			
9405	Marse Henry	Dr	5/1/2017	$187,000	19.11%	49	4.65%
9405	Talitha	Dr	2/18/2010	$174,000			
9405	Talitha	Dr	11/27/2013	$177,000	1.72%	45	0.46%
9411	Jo	Ct	5/6/2013	$160,000			
9411	Jo	Ct	3/15/2017	$200,000	25.00%	46	6.48%
10404	Lark Park	Dr	12/13/2013	$150,000			
10404	Lark Park	Dr	8/21/2015	$159,900	6.60%	20	3.91%
10704	Vine Hill	Dr	5/17/2012	$197,900			
10704	Vine Hill	Dr	5/24/2013	$199,900	1.01%	12	0.99%
					Annual Average		3.63%
					Annual Median		3.16%

Case Study 1 Reconciliation

The sale evidence represents sales and resales of residential properties in a neighborhood containing a high-tension overhead electric power lines with lattice construction towers. The tower facility existed prior to construction of homes in the neighborhood. There is volume sale evidence for analysis between 2011 and the current market. The non-proximity sales show a slightly higher average rate of appreciation, and the proximity sales show a slightly higher median rate.

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Additionally, the average sale price per square foot of gross living area and total living area for each proximity category is illustrated in the following table.

Category	In Proximity	Outside Proximity
Price Per Square Foot Gross Living Area	$118	$117
Price Per Sq. Foot Total Finished Area	$99	$92

The difference between all indications is negligible and not statistically significant. Comparing proximity sales to non-proximity sales in the neighborhood, both categories show a consistent trend of value change, and price based on dwelling size per square foot. In summary, there is no negative value impact from the tower facility.

Case Study 2 – Group 1 (Proximity Sales)

- Facility: Wireless Communications Facility, self-support construction, 219' height, residential single-family detached and condominium subdivision location
- Address: 8400 Bardstown Road, Louisville, Jefferson County, Kentucky
- FCC Registration: 1232839
- Year of installation: 03/7/2002
- Information source: FCC recordings, maps and individual research
- Neighborhood location: Fern Creek
- Property Group Identification: Inside 500' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is 0.64% to 3.72%. The average appreciation is 2.67%, and the median or middle point of the range is 3.02%.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
8503	Missionary	Ct	8/12/2014	$268,500			
8503	Missionary	Ct	9/27/2018	$302,000	12.48%	50	3.02%
8505	Missionary	Ct	4/28/2015	$225,000			
8505	Missionary	Ct	8/25/2017	$239,000	6.22%	28	2.67%
8931	Gentlewind	Way	7/13/2015	$275,000			
8931	Gentlewind	Way	5/15/2018	$280,000	1.82%	34	0.64%
10500	Parkhurst	Ct	4/4/2011	$160,000			
10500	Parkhurst	Ct	10/11/2013	$175,000	9.38%	30	3.72%
10619	Glenmary Springs	Dr	11/24/2014	$229,950			
10619	Glenmary Springs	Dr	11/14/2016	$244,900	6.50%	24	3.29%
					Annual Average		2.67%
					Annual Median		3.02%

Case Study 2 – Group 2 (Non-Proximity Sales)

- Facility: Wireless Communications Facility, self-support construction, 219' height, residential single-family detached and condominium subdivision location
- Address: 8400 Bardstown Road, Louisville, Jefferson County, Kentucky
- FCC Registration: 1232839
- Year of installation: 03/7/2002
- Information source: FCC recordings, maps and individual research
- Neighborhood location: Fern Creek
- Property Group Identification: Outside 500' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is -0.25% to 4.95%. The average appreciation is 2.45%, and the median or middle point of the range is 3.04%.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
8607	Sanctuary	Ln	7/25/2014	$231,000			
8607	Sanctuary	Ln	3/30/2016	$245,000	6.06%	20	3.60%
8622	Sanctuary	Ln	6/21/2013	$240,000			
8622	Sanctuary	Ln	7/13/2015	$257,500	7.29%	25	3.54%
8622	Sanctuary	Ln	12/21/2017	$265,000	2.91%	29	1.19%
8627	Sanctuary	Ln	8/5/2016	$280,900			
8627	Sanctuary	Ln	10/31/2018	$279,300	-0.57%	27	-0.25%
8819	Gentlewind	Way	5/22/2015	$243,000			
8819	Gentlewind	Way	5/18/2018	$255,000	4.94%	36	1.65%
8903	Gentlewind	Way	8/1/2014	$290,000			
8903	Gentlewind	Way	9/30/2016	$307,500	6.03%	26	2.78%
10229	Pine Glen	Cir	9/14/2012	$224,000			
10229	Pine Glen	Cir	3/3/2017	$260,000	16.07%	54	3.60%
10405	Pine Glen	Cir	11/2/2012	$212,900			
10405	Pine Glen	Cir	1/19/2016	$240,000	12.73%	39	3.96%
10427	Pine Glen	Cir	2/28/2013	$195,000			
10427	PINE GLEN	Cir	10/14/2016	$230,000	17.95%	44	4.95%

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Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
10500	Parkhurst	Ct	7/14/2017	$219,500			
10500	Parkhurst	Ct	8/27/2018	$220,000	0.23%	13	0.20%
10502	Gentlewind	Ct	2/19/2014	$267,500			
10502	Gentlewind	Ct	2/29/2016	$270,000	0.93%	24	0.46%
10504	Providence	Dr	7/8/2013	$246,500			
10504	Providence	Dr	7/3/2014	$248,700	0.89%	12	0.90%
10504	Providence	Dr	10/19/2017	$254,000	2.13%	40	0.65%
10601	Providence	Dr	12/16/2011	$232,000			
10601	Providence	Dr	7/2/2015	$257,000	10.78%	43	3.04%
10609	Providence	Dr	2/15/2013	$225,000			
10609	Providence	Dr	11/8/2016	$260,000	15.56%	45	4.17%
10611	Providence	Dr	9/7/2012	$230,000			
10611	Providence	Dr	5/22/2017	$272,500	18.48%	56	3.93%
10712	Glenmary Springs	Dr	6/27/2012	$159,000			
10712	Glenmary Springs	Dr	11/22/2016	$182,000	14.47%	53	3.28%
					Annual Average		2.45%
					Annnual Median		3.04%

Case Study 2 Reconciliation

The evidence represents sales and resales of residential properties in a neighborhood containing a wireless communications tower facility. The tower existed prior to construction of homes in the project. There is volume sale evidence for analysis between 2011 and the current market. The rates of value change between the two categories are consistent. The non-proximity sales show a slightly higher average rate of appreciation, and the proximity sales show a slightly higher median rate.

Additionally, the average sale price per square foot of gross living area and total living area for each proximity category is illustrated in the following table.

Category	In Proximity	Outside Proximity
Price Per Square Foot Gross Living Area	$108	$109
Price Per Sq. Foot Total Finished Area	$98	$99

The difference between all indications is negligible and not statistically significant. Comparing proximity sales to non-proximity sales in the neighborhood, both categories show a consistent trend of value change, and price based on dwelling size per square foot. In summary, there is no negative value impact from the tower facility.

Case Study 3 – Group 1 (Proximity Sales)

- Facility: Wireless Communications Facility, monopole construction, 140' height, residential single-family detached location
- Address: 7200 Woodhaven Road, Louisville, Jefferson County, Kentucky
- FCC Registration: 1298049
- Year/Date of installation: 05/13/2016
- Information source: FCC recordings, maps and individual research
- Neighborhood location: Woodhaven
- Property Group Identification: Inside 750' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is 2.79% to 9.47%. The average appreciation is 5.73%, and the median or middle point of the range is 5.58%. Note that sales of 5900 Woodhaven Ridge Court, 5921 Woodhaven Ridge Court, and 6005 Hurstview Road occur before and after the facility installation. The rates of value change are consistent.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
5900	Woodhaven Ridge	Ct	8/22/2011	$180,000			
5900	Woodhaven Ridge	Ct	10/19/2017	$211,000	17.22%	74	2.79%
5914	Woodhaven Ridge	Ct	12/14/2012	$155,000			
5914	Woodhaven Ridge	Ct	8/1/2014	$172,675	11.40%	20	7.00%
5921	Woodhaven Ridge	Ct	12/20/2011	$125,000			
5921	Woodhaven Ridge	Ct	1/24/2013	$138,000	10.40%	13	9.47%
5921	Woodhaven Ridge	Ct	10/22/2014	$148,000	7.25%	21	4.16%
5921	Woodhaven Ridge	Ct	7/25/2018	$187,400	26.62%	45	7.08%
6005	Hurstview	Rd	7/30/2013	$124,900			
6005	Hurstview	Rd	4/20/2018	$148,000	18.49%	57	3.91%
					Annual Average		5.73%
					Annual Median		5.58%

Case Study 3 – Group 2 (Non-Proximity Sales)

- Facility: Wireless Communications Facility, monopole construction, 140' height, residential single-family detached and condominium subdivision location
- Address: 7200 Woodhaven Road, Louisville, Jefferson County, Kentucky
- FCC Registration: 1298049
- Year/Date of installation: 05/13/2016
- Information source: FCC recordings, maps and individual research
- Neighborhood location: Woodhaven
- Property Group Identification: Outside 750' proximity to facility installation
- Reconciliation: The data represents sale activity between 01/01/2011 and the current market. Each property transferred two or more times in the period. The price difference between transfers of each property is value change due to market conditions, or time. The range of annual value change is 2.31% to 7.99%. The average appreciation is 4.97%, and the median or middle point of the range is 5.21%. Note that sales of 7118 Ridge Creek Road, 7102 Ridge Creek Road, and 7403 Covey Place occurred before and after the tower facility installation. The rates of value change are consistent.

Street #	Street	St	Sale Date	Adj Sale Price	Percent Change	Months	% Annual Change
5904	Bluffington	Ct	7/28/2011	$124,000			
5904	Bluffington	Ct	11/21/2012	$130,685	5.39%	16	4.08%
7102	Ridge Creek	Rd	10/3/2011	$135,500			
7102	Ridge Creek	Rd	5/6/2016	$149,900	10.63%	55	2.31%
7118	Ridge Creek	Rd	3/28/2011	$119,000			
7118	Ridge Creek	Rd	3/25/2016	$150,000	26.05%	60	5.21%
7215	Chestnut Tree	Ln	6/10/2011	$131,000			
7215	Chestnut Tree	Ln	11/1/2013	$140,000	6.87%	29	2.87%
7403	Covey	Pl	2/26/2014	$135,500			
7403	Covey	Pl	10/31/2016	$156,000	15.13%	32	5.65%
7404	Covey	Pl	2/8/2013	$109,000			
7404	Covey	Pl	12/30/2015	$130,000	19.27%	35	6.67%
7405	Stone Bluff	Ct	3/28/2017	$190,000			
7405	Stone Bluff	Ct	8/27/2018	$211,500	11.32%	17	7.99%
					Annual Average		4.97%
					Annual Median		5.21%

Case Study 3 Reconciliation

The evidence represents sales and resales of residential properties in a neighborhood containing a wireless communications tower facility. Tower installation occurred after homes were constructed in the neighborhood. There is volume sale evidence for analysis between 2011 and the current market. The non-proximity sales show a slightly higher median rate of appreciation, and the proximity sales show a slightly higher average rate. As noted, properties with sales both before and after the installation date illustrate consistent values trends.

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Additionally, the average sale price per square foot of gross living area and total living area for each proximity category is illustrated in the following table.

Category	In Proximity	Outside Proximity
Price Per Square Foot Gross Living Area	$113	$110
Price Per Sq. Foot Total Finished Area	$91	$84

The difference between all indications is negligible and not statistically significant. Comparing proximity sales to non-proximity sales in the neighborhood, both categories show a consistent trend of value change, and price based on dwelling size per square foot. In summary, there is no negative value impact from the tower facility.

Study Analysis Conclusions

As illustrated by study results, both in this report and in published studies nationally, the forces of value are consistent. Public utilities and related services are essential to meeting current and future requirements for standards of living. Public utilities and related services, by nature, expand to meet demands of expanding population and community growth. The benefits of modern communication facilities for economic and community development are clear. Without adequate services, there will be a tendency for decreasing demand and property values in a neighborhood. Where services already exist, coverage and data capacity may need to be adjusted due to population changes. As a result of meeting population needs, telecommunications facilities have become a common part of the landscape in much the same way that power, telephone, and other utilities have. Like all utilities, there is requirement for telecommunications facilities in strategic locations in any community.

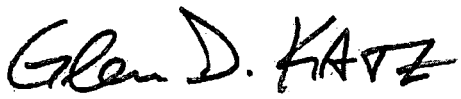
Property owners near tower facilities, other highly visible utility structures, underground pipelines, associated easements, etc., are not penalized on value. There are no changes to ownership rights. Insurability is not affected. Mortgage terms to buyers and owners are not influenced. Consistently, communications tower structures, like overhead electric distribution lines, signage, and buried utility easements, are beneficial. Due to expanding utilities and increased services, residential, commercial and agricultural properties experience positive influences. Because of the deployment of similar structures over the past several decades, owners and buyers of real estate expect service-related infrastructure. Everyone always expects excellent cell phone reception, and that connectivity requires adequate cell phone infrastructure. Cell towers satisfy demand and are visibly absorbed by the landscape of a neighborhood and lifestyles of the population. Cell towers are much like other modern infrastructure. Although cell towers may be noticed initially, they quickly fade into the background and have no negative effect on value – just as telephone poles, utility lines, streetlights, and the other infrastructure components of modern life do not negatively affect real estate values.

Therefore, based on investigation and analysis of reactions of market participants buying, occupying, investing, and selling real estate properties, it is clear that the proposed tower facility will not adversely impact the demand for, or value of, properties in the immediate or general area. Consistently, market evidence shows this type of tower facility has not, and does not, negatively impact surrounding property, and supports the positive influences on value and demand for real estate due to expansion of public utilities, which includes wireless telecommunications tower infrastructure.

Disclosure Certification

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions and conclusions are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.
- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined opinion that favors the cause of the client, the magnitude of the opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal consulting report.
- No one provided significant real property analysis assistance to the person signing this certification.



Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS

Professional Qualifications

GLEN D. KATZ, MAI, SRA, AI-GRS, AI-RRS

P.O. Box 20983, Louisville, Kentucky 40250
Office: (502) 396-6664 · Email: gkatz@usa.net · Web: www.rsappraise.com

Professional Experience

Glen Katz has been involved in the appraisal of real estate for over 25 years. Beginning in both the commercial and residential fields, he has transitioned to roles as consultant, reviewer, and expert witness. As owner of Realty Solutions Co. Inc., relationships have been developed with user clients, peer appraisers and appraisal firms. Resulting projects have been performed individually and as coordinating peer groups.

In general practice, Mr. Katz has achieved the Appraisal Institute MAI (general) designation, and SRA (residential) designation. In specialized practice, Mr. Katz has achieved the Appraisal Institute appraisal review designations of AI-GRS (general) and AI-RRS (residential), as well as completing the following Appraisal Institute Professional Development Programs:

- Litigation
- Valuation of the Components of a Business Enterprise
- Valuation of Conservation Easements
- Valuation of Sustainable Buildings: Residential
- Valuation of Sustainable Buildings: Commercial

As a reviewer of appraisals, Mr. Katz serves clients in both the litigation and lending fields. Appraisal review reports are commonly performed under Uniform Standards of Professional Appraisal Practice (USPAP), Uniform Appraisal Standards for Federal Land Acquisitions (Yellowbook), and local jurisdictional guidelines.

As an expert witness, Mr. Katz has participated in cases regarding land and building damage, insurance claims, property tax assessment, construction defects, divorce settlements, boundary disputes, zoning noncompliance, bankruptcy, and alleged fraud.

Areas of expertise include:

- Commercial, industrial, complex residential, agricultural, special purpose properties
- Appraisal review, commercial and residential
- Value impact study
- Eminent domain
- Expert witness/litigation support
- Property damages
- Insurance claims and cost analysis
- Tax Appeal
- Estate valuation
- Green/high performance residential and commercial construction (sustainable/energy efficient)

Significant Achievements

- Condemnation and right-of-way; 2008 to 2011 - Right of way value analysis for Keystone and Keystone XL pipeline segments in South Dakota, both East River and West River areas. The project included a market study on pipeline eased properties, sale book, and appraisals.
- Representing Walgreen Co., performed county level tax appeals, appraised and testified as expert witness before the Kentucky Board of Tax Appeals regarding methodology in developing a value opinion for "Absolute NNN" properties for ad valorem tax purposes.
- Development panel member for the Appraiser Supervisor and Associate Training program curriculum for the Kentucky Real Estate Appraisers Board, Commonwealth of Kentucky.

Education

- Bachelor of Science in Business Administration, Marketing, 1984, University of Louisville
- Study focusing on real estate economics, 1990 to 1993, Eastern Kentucky University
- Ongoing real estate economics education since 1993 has been obtained through the Appraisal Institute, and from professional groups serving specific real estate related fields.

Professional Qualifications and Memberships

- Certified General Real Property Appraiser, Kentucky License #1533
- Certified General Real Estate Appraiser, Tennessee License #5312
- MAI designated Member, Appraisal Institute
  *(The MAI membership designation is held by professionals who can provide a wide range of services relating to all types of real property, such as providing value opinions, evaluations, review, consulting and advice regarding investment decisions, among others. Property types may include commercial, industrial, agricultural, residential, vacant land and others.)
- SRA designated Member, Appraisal Institute
  *(The SRA membership designation is held by professionals who can provide a wide range of services relating to residential properties, including providing opinions of value, evaluations, reviews, consulting and advice regarding investment decisions, among others)
- AI-GRS designated Member, Appraisal Institute
  *(The AI-GRS membership designation is held by professionals who can provide reviews of appraisals of a wide range of property types, including commercial, industrial, agricultural, residential, vacant land and others. They assist clients in satisfying issues related to due diligence and risk management)
- AI-RRS designated Member, Appraisal Institute
  *(The AI-RRS membership designation is held by professionals who have the tools to provide reviews and address the related issues unique to residential real property appraisals. They assist clients in satisfying issues related to due diligence and risk management)
- Professional Development Programs – Appraisal Institute
  - Litigation
  - Valuation of the Components of a Business Enterprise
  - Valuation of Sustainable Buildings: Commercial
  - Valuation of Sustainable Buildings: Residential
  - Valuation of Conservation Easements
- Member, International Right of Way Association (IRWA)

Appraisal Institute Service

- 2018 to present – National Education Committee Liaison, Region V, Appraisal Institute
- 2018 – President, Bluegrass Chapter, Appraisal Institute
- 2008 to 2017 – Education Committee, Chair, Bluegrass Chapter, Appraisal Institute
- 2014 to 2017 – Vice President, Bluegrass Chapter, Appraisal Institute
- 2012 and 2013 – Second Vice President, Bluegrass Chapter, Appraisal Institute
- 2016 and 2017 – Government Relations Committee, Bluegrass Chapter, Appraisal Institute
- 2016 and 2017 – Regional Representative, Bluegrass Chapter, Appraisal Institute
- 2015 to present – Region V Regional Nominating Committee, Appraisal Institute
- 2013, 2014 and 2016 – Leadership Development & Advisory Council, Appraisal Institute
- 2009 - 2012, 2014 – Alternate Regional Representative, Bluegrass Chapter, Appraisal Institute
- 2007 – Membership Development/Retention Committee, Bluegrass Chapter, Appraisal Institute
- MAI, SRA, AI-GRS, and AI-RRS, Candidate Advisor, Appraisal Institute

ADVANCED STUDY CURRICULUM

PROVIDER/TITLE	YEAR
APPRAISAL INSTITUTE PROFESSIONAL DEVELOPMENT PROGRAMS	
VALUATION OF SUSTAINABLE BUILDINGS: COMMERCIAL - REGISTRY	2018
VALUATION OF SUSTAINABLE BUILDINGS: RESIDENTIAL - REGISTRY	2017
VALUATION OF THE COMPONENTS OF A BUSINESS ENTERPRISE - REGISTRY	2013
LITIGATION PROFESSIONAL DEVELOPMENT PROGRAM - REGISTRY	2010
VALUATION OF CONSERVATION EASEMENTS - REGISTRY	2008
GENERAL DEMONSTRATION REPORT - CAPSTONE PROGRAM	2014
INSTRUCTOR QUALIFYING CONFERENCE	2016
LEADERSHIP DEVELOPMENT AND ADVISORY COUNCIL - WASHINGTON D.C.	2013/14/16
APPRAISAL INSTITUTE, COURSES	
PRACTICAL APPLICATIONS IN APPRAISING GREEN COMMERCIAL PROPERTIES	2018
UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS	2017
RESIDENTIAL & COMMERCIAL VALUATION OF SOLAR	2017
APPLICATION & INTERPRETATION OF SIMPLE LINEAR REGRESSION	2016
CASE STUDIES IN APPRAISING GREEN RESIDENTIAL BUILDINGS	2016
REVIEW THEORY - GENERAL	2014
REVIEW THEORY - RESIDENTIAL	2014
QUANTITATIVE ANALYSIS	2013
FUNDAMENTALS OF SEPARATING REAL PROPERTY, PERSONAL PROPERTY, AND INTANGIBLE BUSINESS ASSETS	2012
THE APPRAISER AS AN EXPERT WITNESS: PREPARATION AND TESTIMONY	2010
LITIGATION APPRAISING: SPECIALIZED TOPICS AND APPLICATIONS, COURSE 705GRE	2010
CONDEMNATION APPRAISING: PRINCIPLES & APPLICATIONS	2009
ADVANCED SALES COMPARISON & COST APPROACHES	2008
VALUATION OF CONSERVATION EASEMENTS CERTIFICATE PROGRAM	2008
ADVANCED RESIDENTIAL REPORT WRITING, PART II	2007
ADVANCED RESIDENTIAL APPLICATIONS & CASE STUDIES, PART I	2007
APPRAISAL INSTITUTE, SEMINARS	
HOT TOPICS AND MYTHS IN APPRAISER LIABILITY	2018
DRONE TECHNOLOGY AND ITS IMPACT ON THE APPRAISAL INDUSTRY	2017
RESIDENTIAL APPLICATIONS: USING TECHNOLOGY TO MEASURE AND SUPPORT APPRAISAL ASSIGNMENT RESULTS	2017
RESIDENTIAL APPLICATIONS 2: USING MICROSOFT EXCEL TO ANALYZE AND SUPPORT APPRAISAL ASSIGNMENT RESULTS	2015
INCOME APPROACH FOR RESIDENTIAL APPRAISERS	2014
MARKETABILITY STUDIES: ADVANCED CONSIDERATIONS AND APPLICATIONS	2013
ADVANCED SPREADSHEET MODELING FOR VALUATION APPLICATIONS	2011
APPRAISING MANUFACTURED HOUSING	2011
APPRAISING DISTRESSED COMMERCIAL REAL ESTATE: HERE WE GO AGAIN	2010
EVALUATING RESIDENTIAL CONSTRUCTION	2009
REO APPRAISAL: APPRAISAL OF RESIDENTIAL PROPERTY FORECLOSURE	2009
REGRESSION ANALYSIS IN APPRAISAL PRACTICE: CONCEPTS AND APPLICATIONS	2008
SELF STORAGE ECONOMICS AND APPRAISAL	2007
SUBDIVISION VALUATION: A COMPREHENSIVE GUIDE	2007
APPRAISING CONVENIENCE STORES	2005
EVALUATING COMMERCIAL CONSTRUCTION	2005
APPRAISAL CONSULTING: A SOLUTIONS APPROACH FOR PROFESSIONALS	2003
APPRAISING THE TOUGH ONES	2003
ATTACKING & DEFENDING AN APPRAISAL IN LITIGATION	2002
APPRAISAL OF NONCONFORMING USES	2000
DYNAMICS OF OFFICE BUILDING VALUATION	1998
ENVIRONMENTAL RISK AND THE APPRAISAL PROCESS	1995
LITIGATION SKILLS FOR APPRAISERS	1997
APPRAISAL OF SPECIAL-PURPOSE PROPERTIES	1996

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PROVIDER/TITLE	YEAR
INTERNATIONAL RIGHT OF WAY ASSOCIATION	
COURSE 105 - THE UNIFORM ACT - EXECUTIVE SUMMARY	2017
MARSHALL & SWIFT	
COMMERCIAL COST APPROACH CERTIFICATION PROGRAM	2015
AMERICAN BANKERS ASSOCIATION	
FEDERAL APPRAISAL POLICIES: HOTLINES, COMPLAINT FORMS AND REVISED POLICY STATEMENTS	2013
CCIM INSTITUTE	
COURSE CI-101, FINANCIAL ANALYSIS FOR COMMERCIAL INVESTMENT REAL ESTATE	2006
COURSE CI-103, USER DECISION ANALYSIS FOR COMMERCIAL INVESTMENT REAL ESTATE	2006
COURSE CI-104, INVESTMENT ANALYSIS FOR COMMERCIAL INVESTMENT REAL ESTATE	2006
COURSE 411, GAP ANALYSIS AND REAL ESTATE MARKET DYNAMICS	2006
COURSE 412, ECONOMICS OF COMMERCIAL LEASES, AND 1031 EXCHANGES	2006
HUD/FHA	
HUD/FHA APPRAISER TEST AND CERTIFICATION	2000
THE MODEL ENERGY CODE (MEC), U.S. DEPARTMENT OF ENERGY	1997
APPRAISING FHA PROPERTIES	1997
HOME BUILDERS ASSOCIATION OF LOUISVILLE	
SITE PLANNING	1997
BASICS OF BUILDING; BLUEPRINT READING, BUILDING CODES, SITING	1996
SHELBY COUNTY INDUSTRIAL FOUNDATION	
ENVIRONMENTAL ISSUES SEMINAR	1997
LORMAN EDUCATION SERVICES	
CURRENT ISSUES IN KENTUCKY REAL ESTATE DEVELOPMENT	2000
CLE INTERNATIONAL	
EMINENT DOMAIN, THE LAW OF CONDEMNATION AND LAND USE	2002
EASTERN KENTUCKY UNIVERSITY	
REAL ESTATE FINANCE, RST 330	1993
ADVANCED APPRAISAL APPLICATION/INCOME PROPERTY VALUATION, RST 410	1991
APPRAISAL OF RESIDENTIAL PROPERTY, RST 330	1990
UNIVERSITY OF LOUISVILLE	
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - MARKETING	1984