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October 20, 2017

**VIA FEDEX**

Gwen R. Pinson, Executive Director  
Kentucky Public Service Commission  
P.O. Box 615  
Frankfort, KY 40602-0615

**RECEIVED**

OCT 23 2017

PUBLIC SERVICE  
COMMISSION

Re: Response to Stephen D. Thornhill Concerns  
PSC Case No.: 2017-00385  
Site Name: Harned

Dear Ms. Pinson:

We have received and responded to the concerns of Stephen D. Thornhill in the above referenced matter. 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,

A handwritten signature in blue ink, appearing to read "DA", is written over a blue horizontal line.

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

Enclosure

cc: Brittany Hayes Koenig, Div. of General Counsel

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

**RECEIVED**

OCT 23 2017

PUBLIC SERVICE  
COMMISSION

In the Matter of:

THE APPLICATION OF )  
NEW CINGULAR WIRELESS PCS, LLC )  
D/B/A AT&T MOBILITY )  
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC )  
CONVENIENCE AND NECESSITY TO CONSTRUCT )  
A WIRELESS COMMUNICATIONS FACILITY )  
IN THE COMMONWEALTH OF KENTUCKY )  
IN THE COUNTY OF BRECKINRIDGE )

CASE NO.: 2017-00385

SITE NAME: HARNED

\*\*\*\*\*

**RESPONSE TO STEPHEN D. THORNHILL CONCERNS**

Applicant New Cingular Wireless PCS, LLC, d/b/a AT&T Mobility ("AT&T Mobility"), by counsel, makes this Response to the concerns of Stephen D. Thornhill in the within proceeding. Applicant respectfully states, as follows:

1. Stephen D. Thornhill, by counsel, voiced generalized concerns to the Kentucky Public Service Commission regarding health effects and property values 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 (6<sup>th</sup> 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 (6<sup>th</sup> 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 Env'tl. 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 site plan, geotechnical study, tower and foundation drawings submitted with the Application have been signed and sealed by a professional engineer licensed in the Commonwealth of Kentucky. The total structure height is 320'. The nearest residential structure is 717' from the base of the tower. The tower has been designed to include a lightning arrestor at the top. The tower does not present a risk to public health and welfare.

6. In response to area residents' 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, Breckinridge 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 Breckinridge 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 Breckinridge 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. 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 Breckinridge 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 (6<sup>th</sup> 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 aesthetic 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.

A new wireless communications facility must be located within the prescribed search area and at a specific elevation to close the coverage gap. There are no tall structures within the search area where antennas can be located to close the service gap. Furthermore, the location of the facility will maximize the availability of wireless local loop broadband internet service in the subject area. AT&T Mobility is an FCC-licensed wireless communications service 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.

**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) Implement affirmative measures to prevent introduction and consideration of

testimony and other evidence on radio frequency issues in any proceedings and from its deliberations on the subject application for approval of a wireless telecommunications facility, pursuant to KRS Chapter 100 and the Telecommunications Act of 1996;

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

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

Respectfully submitted,



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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  
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#### **CERTIFICATE OF SERVICE**

The undersigned hereby certifies that on this 20th day of October 2017, a true and accurate copy of the foregoing was sent by U.S. Postal Service first class mail, postage prepaid, to Charles C. Mattingly III, Attorney for Stephen D. Thornhill, 223 South Main Street, P.O. Box 72, Hardinsburg, Kentucky 40143.



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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: HARNED - KYL03659  
PSC CASE NO.: 2017-00385  
ASSESSOR PARCEL NUMBER: 102-26  
BUTLER HOBBS ROAD  
HARNED, BRECKINRIDGE COUNTY, KY 40144**

## **DATE OF REPORT**

**October 20, 2017**

## **PREPARED FOR**

**Kentucky Public Service Commission  
P.O. Box 615  
Frankfort, KY 40602**

## **PREPARED BY**

**Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS  
Realty Solutions Co., Inc.  
3815 Stonyrun Circle  
Louisville, KY 40220**

October 20, 2017

**Realty Solutions, Co., Inc.**  
Finding Answers to Real Estate Problems

Kentucky Public Service Commission  
P.O. Box 615  
Frankfort, KY 40602

Subject: Real Estate Value Impact Study  
Proposed Wireless Communications Facility  
New Cingular Wireless, PCS, LLC, d/b/a AT&T Mobility  
Site Name: Harned - KYL03659  
PSC Case No.: 2017-00385  
Assessor Parcel number: 102-26  
Butler Hobbs Road  
Harned, Breckinridge County, KY 40144

Commissioners:

I have completed an impact study regarding potential influence of wireless communications tower facilities on market value of surrounding residential properties, specifically addressing the subject location in a low-density residential and agricultural environment. Attached is my analysis.

Based on investigation and analysis of market conditions, I conclude 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 supports the positive influences on value and demand for real estate due to expansion of public utilities, including wireless telecommunications tower infrastructure.

Thank you for the opportunity to present this information. Please contact me if you have questions or comments.

Respectfully,



Glen D. Katz, MAI, SRA, AI-GRS, AI-RRS  
Realty Solutions Co., Inc.  
3815 Stonyrun Circle  
Louisville, KY 40220

Office (502) 396-6664  
Email gkatz@usa.net

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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 potential value influence due to proximity of private or public utility facilities to residential and commercial properties, I have performed impact analysis on wireless communications tower facilities, high voltage electric transmission lines, storage towers, oil pipelines, and federal interstates. For the subject property, my analysis consists of analyzing potential increased or decreased value trends of residential properties resulting from proximity to public utility tower facilities.

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

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, and related influences on value. Regardless of these risks, communities without land-use controls continue to expand and develop need for public utilities. They are still influenced by social, economic, governmental and environmental forces.

### **Facility Identification**

The facility will be located in a low-density residential and agricultural area. The construction improvements will be comprised of a 305' self-support structure with 15' lightning arrestor, totaling a structure height of 320 feet. There will be supporting storage cabinets, an emergency power generator, and perimeter protective fencing. These characteristics are some of the most common for wireless communications tower facilities in Kentucky.

### **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: measurement of value change (appreciation or depreciation) over time, and; direct comparison of properties with, and without, distance or view proximity exposure.

Specifically, the following steps are taken in analysis;

- Identify existing tower locations with an adequate density of surrounding developed land uses (residential and/or commercial)
- Examine the surrounding market area and neighborhood to determine if there are compatible and competing properties with adequate sale volume activity

- Categorize property sales by proximity characteristics for measurement of influence, whether distance or visibility. Typically a distance of 500' to 1,000' is a threshold of measure for the close-proximity category. At further distances, the category changes to non-proximity, as tower views become blurred or obscured by trees, roofs, or topography. Tower view may also be absorbed by other skyline features of power lines, towers or tanks
- Track value change over time for properties in close proximity and non-proximity, or;
- Track value change before and after a facility is installed
- Compare the results to determine if there is a difference in value between the two categories due to tower facility exposure

Based on the data and analysis for tower projects like the subject, the values and rates of value change for proximity and non-proximity residential properties are similar. This is not unusual or unexpected. The market forces that drive real estate value also create complimentary demand for public utility tower projects. These market forces are discussed as follows:

- Social forces are influenced by; population, education, and lifestyles. There is increasing need for communications facilities, and satisfying demand for communications facilities as part of the core supply of public services is expected by the population. Anything less is detrimental to value or demand for real estate.
- Economic forces are influenced by; employment, wages, business, regional and community development. With the increasing diversification of work forces and efficiencies needed to be competitive, effective communications facilities are required.
- Governmental forces respond to population needs for; laws and policies; public services; zoning, and building codes. The governmental regulations that result in enabling public services provided by communications facilities are a direct reaction to public needs.

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, communities without land-use controls continue to expand and develop need for public utilities.

- 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 the location of a population, and where supporting infrastructure will be most effective and valuable as a resource.

**Study Analysis Conclusion**

As illustrated by study results, the forces of value are consistent. Public utilities and related services are essential to meeting the accepted standard of living in municipal areas. Without adequate services, there will be a tendency for decreasing demand and property values in a neighborhood. In order to meet needs of a population, telecommunications tower facilities have become a common part of the landscape in much the same way that power and telephone lines and other utilities have. Like all utilities, telecommunications tower facilities are needed 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. Effectively, communications tower structures, like overhead electric distribution lines, signage, and buried utility easements, are beneficial. Due to expanding utilities and increased services, residential and commercial properties experience positive influences. Because of the increasing volume of similar structures over the past several decades, owners and buyers of residential properties expect service-related infrastructure. Any perceived negative proximity influences are offset by demand enhancements, and absorbed by the landscape of a neighborhood and lifestyles of the population.

Therefore, based on market information, it is my opinion that the proposed facility will not adversely influence the value of properties in the immediate or general area.

## **REPORT DEVELOPMENT - SCOPE OF WORK**

Scope of work is an important component for fundamental development and communications of analyses, and is comprised of the following:

1. identify the problem to be solved;
2. determine and perform the scope of work necessary to develop credible assignment results; and
3. disclose the scope of work in the report.

The scope of work used in preparing this report is included throughout this report in the various descriptions and analysis. The following topics give a general overview of the 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. 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 development plans

### **Type and extent of the data researched**

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

### **Type and extent of analyses applied**

The data extraction is available through several 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 nearby tower facilities. Comparison is made between value trends of properties in proximity, and without proximity to tower facilities. Three prevalent methods of data extraction are discussed as follows:

- First is “Before and After” data. This analyzes value trends for close proximity properties before and after installation of a facility. Property sale data before a facility is installed is compared to sale data occurring after a facility is installed. This method has limitations when the facility installation occurred in the distant past. Older sales may have incurred significant physical changes (renovation, updating, addition) and/or economic changes (i.e.; 2007-2009 recession, changes in highest and best use). In these cases, value change over a long time period would be attributed to multiple sources, and allocating value change solely to tower influence would be misleading.



- Next is unit-value comparison of neighborhood sales identical in all aspects, except proximity. This compares sales and values of substitute properties similar in construction characteristics. The unit value will commonly be price per-square-foot of gross living area (sale price divided by above grade living area). The information will identify value trend or change differences due to tower proximity. This method has limitations due to the large number of property differences and related difficulty in matching properties that are identical with the exception of proximity.
- The most common method is timeline trend comparison. 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 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 2009 to a current date, as it reflects post-recession activity.

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 the 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 Pike Legal Group, PLLC, and the identified governmental approving panel for the project, Kentucky Public Service Commission.

#### **INTENDED USE OF THE REPORT**

The intended use of the appraiser’s opinions and conclusions is to assist Pike Legal Group, PLLC and the governmental approving panel, Kentucky Public Service Commission, in making permitting decisions regarding the subject property. This report is not intended for any other use.

## **DEFINITION OF VALUE**

### **Kentucky Definition of Market Value**

The Kentucky Constitution and the statutes define fair cash value, or fair market value as: "...estimated at the price it would bring at a fair voluntary sale..."

Fair Market Value (aka Fair Cash Value) is defined as the most probable price expressed in terms of money that a property would bring in an "arm's-length transaction" between a willing seller and willing buyer, both of whom are knowledgeable concerning all the uses to which it is adapted and for which it is capable of being used. There are several requirements for a sale to be considered an "arm's-length transaction:"

1. A willing buyer and a willing seller. Neither may be acting under duress with no advantage being taken by buyer or seller.
2. Property must be marketed for a reasonable amount of time to locate a willing buyer.
3. Both buyer and seller must be informed and knowledgeable about the property and its potential.
4. No unusual circumstances may be present in the transaction.

## **IDENTIFICATION OF PROJECT**

New Cingular Wireless, PCS, LLC, d/b/a AT&T Mobility  
Site Name: Harned - KYL03659  
PSC Case Number: 2017-00385  
Assessor Parcel number: 102-26  
Butler Hobbs Road  
Harned, Breckinridge County, KY 40144

The facility will be located in a low-density residential and agricultural area. The construction improvements will be comprised of a 305' self-support structure with 15' lightning arrestor, totaling a structure height of 320 feet. There will be supporting storage cabinets, an emergency power generator, and perimeter protective fencing. These characteristics are some of the most common for wireless communications tower facilities in Kentucky.

## **CASE STUDY INTRODUCTION**

The following case studies are developed through researching and analyzing 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 is researched. With the market information currently available, both the before and after, and timeline trend methods are used for this report.

### **Timeline Trend Method**

For projects that have been in place for a long time period, the timeline trend steps of analysis consist of:

- Research properties with tower proximity that have repeat sales in the identified time period.
- Determine the monthly or annual rate of market value appreciation or depreciation over the time period for the individual properties in the proximity category.
- Research properties in the same neighborhood, without tower proximity, that have repeat or back-to-back sales.
- Determine the monthly or annual rate of market value appreciation or depreciation over the time period for the individual properties and the property category.
- Compare the value change trends of the two groups of property to extract potential value change differences related to proximity influence.

### **Before and After Method**

For projects that have been recently constructed, the before and after method steps of analysis consists of:

- Research residential properties with tower proximity that sold prior to the tower installation, and then sold again after the tower installation.
- Determine the monthly or annual rate of market value appreciation or depreciation over the time period for the individual properties and the property 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 monthly or annual rate of market value appreciation or depreciation over the time period for the individual properties and the property category.
- Compare the value change trends of the two groups of property to extract potential value change differences attributed to proximity.

The date range for sale data is from 2009 to the current date. 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 1,000' from a facility are researched.

In order to focus on the influence on appreciation or depreciation from market conditions and proximity, 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 original and subsequent transfers, such as renovation, construction addition, or deferred maintenance resulting in physical deterioration.
- Properties with distress economic ownership characteristics, such as foreclosure or short-sale influence.
- Properties with other unusual buyer or seller motivations, such as family transactions, estate liquidation, or investor activity in a predominantly owner-occupied market.

If this type of non-arms-length activity is prevalent in a neighborhood, the facility and neighborhood is removed from consideration. Ultimately the focus is to measure general 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, and one case study compares values of proximity and non-proximity properties before and after installation of a 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 in the middle of 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 is presented by sales and resales of properties within 500' proximity to the utility, and outside 500' proximity to the utility. Rates of appreciation and depreciation of each of the two categories are developed, and the two categories of proximity are compared to analyze any potential influence.

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

The project was installed in 2002. The value evidence is presented by sales and resales of properties within 750' proximity to the utility, and outside 750' proximity to the utility. Rates of appreciation and depreciation of each of the two categories are developed, and the two categories are compared to analyze any potential influence.

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

The project was installed in 2016. The value evidence is presented by sales and resales of properties within 1,000' proximity to the utility, and outside 1,000' proximity to the utility. Rates of appreciation or depreciation in each of the two categories are extracted, and the two categories are compared to analyze any potential influence.

For Case Study 3, it is important to note there are back-to-back sales in each category, before and after the installation, that illustrate consistent values and rates of appreciation.

**Case Study 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
- 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 of analysis: The data represents sale activity between 01/01/2010 and 09/21/2017. Each of the properties transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is -0.21% to 4.97%. The average appreciation is 2.66%, and the median or middle point of the range is 2.55%.

Street #	Street	St	Sale Date	Adj Sale Price	% Change	Months	% Change Annually
4707	Vinecliff	Pl	2/12/2010	\$218,000			
4707	Vinecliff	Pl	7/14/2017	\$259,900	19.22%	89	2.59%
4733	Ferrer	Way	7/26/2011	\$141,500			
4733	Ferrer	Way	5/22/2014	\$160,000	13.07%	34	4.63%
4800	Hat	Ct	10/26/2010	\$125,000			
4800	Hat	Ct	10/4/2016	\$175,000	40.00%	71	6.73%
4802	Burriss	Dr	8/10/2012	\$127,400			
4802	Burriss	Dr	2/17/2015	\$130,950	2.79%	30	1.10%
4904	Bova	Way	3/25/2010	\$140,000			
4904	Bova	Way	11/14/2014	\$141,000	0.71%	56	0.15%
8804	Loch Lea	Ln	12/6/2013	\$130,500			
8804	Loch Lea	Ln	12/2/2016	\$149,900	14.87%	36	4.97%
8919	Gutenberg	Rd	12/30/2011	\$160,000			
8919	Gutenberg	Rd	3/24/2017	\$175,500	9.69%	63	1.85%
9302	Villa Fair	Ct	4/29/2011	\$132,000			
9302	Villa Fair	Ct	6/10/2016	\$149,750	13.45%	61	2.63%
10509	Vintage Creek	Dr	4/15/2014	\$249,500			
10509	Vintage Creek	Dr	9/11/2015	\$255,000	2.20%	17	1.57%
10601	Vintage Creek	Dr	3/28/2012	\$211,500			
10601	Vintage Creek	Dr	11/25/2013	\$222,500	5.20%	20	3.13%

(table continued next page)

10603	Alderbrook	Pl	2/17/2012	\$216,000			
10603	Alderbrook	Pl	4/15/2015	\$247,000	14.35%	38	4.54%
10605	Vintage Creek	Dr	9/10/2010	\$217,000			
10605	Vintage Creek	Dr	8/25/2017	\$255,000	17.51%	84	2.52%
10608	Alderbrook	Pl	8/12/2011	\$237,900			
10608	Alderbrook	Pl	5/4/2015	\$236,000	-0.80%	45	-0.21%
10803	Vintage Creek	Dr	5/25/2010	\$239,000			
10803	Vintage Creek	Dr	11/15/2016	\$255,000	6.69%	78	1.03%
Annual Average							2.66%
Annual Median							2.55%

**Case Study 1 - 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
- 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 of analysis: The data represents sale activity between 01/01/2010 and 09/21/2017. Each property transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is -0.41% to 5.97%. The average rate of appreciation is 2.91%, and the median or middle point of the appreciation range is 2.49%.

Street #	Street	St	Sale Date	Adj Sale Price	% Change	Months	% Change Annually
4409	Taft	Ct	10/15/10	\$135,000			
4409	Taft	Ct	03/03/16	\$150,000	11.11%	65	2.06%
4509	Marse	Pl	01/30/12	\$141,900			
4509	Marse	Pl	06/30/14	\$152,500	7.47%	29	3.09%
4608	Haeringdon	Dr	10/21/10	\$152,000			
4608	Haeringdon	Dr	03/06/17	\$184,900	21.64%	77	3.39%
4615	Stony Brook	Dr	05/10/13	\$159,900			
4615	Stony Brook	Dr	08/18/17	\$181,500	13.51%	51	3.16%
4704	Jolynn	Dr	03/28/13	\$147,500			
4704	Jolynn	Dr	06/01/16	\$159,500	8.14%	38	2.56%
4902	Stout	Blvd	08/24/12	\$140,000			
4902	Stout	Blvd	08/17/15	\$157,500	12.50%	36	4.19%
4904	Flora Springs	Cir	09/02/10	\$219,000			
4904	Flora Springs	Cir	11/05/15	\$242,000	10.50%	62	2.03%
4904	Flora Springs	Cir	12/13/16	\$258,000	6.61%	13	5.97%
4905	Roman	Dr	08/22/12	\$138,900			
4905	Roman	Dr	06/08/16	\$164,500	18.43%	46	4.85%
5001	Fairwood	Ln	09/17/10	\$136,000			
5001	Fairwood	Ln	02/08/16	\$138,000	1.47%	65	0.27%
5001	Volney	Ct	12/14/12	\$168,000			
5001	Volney	Ct	11/15/16	\$184,000	9.52%	47	2.43%

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5003	Volney	Ct	08/26/11	\$145,000			
5003	Volney	Ct	07/15/14	\$150,200	3.59%	35	1.24%
5103	Flora Springs	Cir	10/10/12	\$247,500			
5103	Flora Springs	Cir	09/26/14	\$258,900	4.61%	24	2.35%
8607	Michael Edward	Dr	02/19/10	\$160,500			
8607	Michael Edward	Dr	07/31/14	\$176,000	9.66%	53	2.17%
8612	Longborough	Way	11/29/11	\$162,000			
8612	Longborough	Way	12/11/14	\$160,000	-1.23%	36	-0.41%
8708	Loch Lea	Ln	12/28/12	\$150,000			
8708	Loch Lea	Ln	03/20/15	\$157,500	5.00%	27	2.25%
8718	Loch Lea	Ln	08/02/11	\$147,000			
8718	Loch Lea	Ln	08/04/17	\$193,870	31.88%	72	5.30%
9002	Hatlerhall	Dr	08/15/14	\$135,000			
9002	Hatlerhall	Dr	03/09/17	\$153,000	13.33%	31	5.19%
9102	Marse Henry	Dr	03/15/13	\$152,335			
9102	Marse Henry	Dr	04/17/15	\$163,500	7.33%	25	3.51%
9115	Marse Henry	Dr	05/07/15	\$166,000			
9115	Marse Henry	Dr	05/15/17	\$183,000	10.24%	24	5.06%
9204	Marse Henry	Dr	09/27/12	\$150,000			
9204	Marse Henry	Dr	06/16/15	\$159,900	6.60%	33	2.43%
9307	Marse Henry	Dr	10/28/10	\$100,000			
9307	Marse Henry	Dr	02/03/17	\$110,100	10.10%	75	1.61%
9311	Marse Henry	Dr	07/13/12	\$189,000			
9311	Marse Henry	Dr	02/18/15	\$197,900	4.71%	31	1.81%
9402	Talitha	Dr	06/24/10	\$155,225			
9402	Talitha	Dr	11/21/16	\$180,000	15.96%	77	2.49%
9405	Marse Henry	Dr	03/22/13	\$157,000			
9405	Marse Henry	Dr	05/01/17	\$187,000	19.11%	49	4.65%
10404	Lark Park	Dr	12/13/13	\$150,000			
10404	Lark Park	Dr	08/21/15	\$159,900	6.60%	20	3.91%
10704	Vine Hill	Dr	05/17/12	\$197,900			
10704	Vine Hill	Dr	05/24/13	\$199,900	1.01%	12	0.99%
						Annual Average	2.91%
						Annual Median	2.49%

### 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. There is volume sale evidence for analysis between 2010 and the current date. The rates of appreciation between the two categories are consistent. The sale evidence is consistent. In summary, there is no negative influence on value from the tower facility.

**Case Study 2 - 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
- 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 750' proximity to facility installation
- Reconciliation of analysis: The data represents sale activity between 01/01/2010 and 02/01/2017. Each property transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is 0.46% to 5.87%. The average appreciation is 2.80%, and the median or middle point of the range is 3.31%.

Address	Sale Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
8505 Missionary Ct	04/28/15	\$225,000	6.90%	59	0.12%	1.40%
	05/28/10	\$210,475				
8509 Missionary Ct	01/31/17	\$271,000	10.61%	80	0.13%	1.60%
	06/17/10	\$245,000				
10500 Parkhurst Ct	10/11/13	\$175,000	9.38%	30	0.31%	3.71%
	04/04/11	\$160,000				
8919 Gentlewind Way	11/23/15	\$273,000	8.33%	24	0.35%	4.16%
	11/22/13	\$252,000				
8734 Lough Dr	06/29/16	\$225,000	9.76%	33	0.30%	3.59%
	10/11/13	\$205,000				
8721 Lough Dr	07/29/16	\$170,000	3.03%	32	0.09%	1.13%
	11/25/13	\$165,000				
8702 Meadow Springs Way	01/08/16	\$165,500	11.37%	41	0.28%	3.31%
	08/02/12	\$148,600				
8702 Lough Dr	09/09/16	\$207,000	28.07%	57	0.49%	5.87%
	12/01/11	\$161,635				
10502 Gentlewind Ct	02/29/16	\$270,000	0.93%	24	0.04%	0.46%
	02/19/14	\$267,500				
Average					0.23%	2.80%
Median					0.28%	3.31%

**Case Study 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
- 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 750' proximity to facility installation
- Reconciliation of analysis: The data represents sale activity between 01/01/2010 and 02/01/2017. Each property transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is 0.90% to 6.35%. The average appreciation is 3.44%, and the median or middle point of the range is 3.57%.

Address	Sale Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
8607 Sanctuary Ln	03/30/16	\$245,000	6.06%	20	0.30%	3.60%
	07/25/14	\$231,000				
8622 Sanctuary Ln	07/13/15	\$257,500	7.29%	25	0.29%	3.54%
	06/21/13	\$240,000				
8607 Sanctuary Ln	07/25/14	\$245,000	7.93%	48	0.17%	1.99%
	08/02/10	\$227,000				
8903 Gentlewind Way	09/30/16	\$307,500	6.03%	26	0.23%	2.78%
	08/01/14	\$290,000				
10405 Pine Glen Cir	01/19/16	\$240,000	12.73%	39	0.33%	3.96%
	11/02/12	\$212,900				
10423 Pine Glen Cir	08/06/14	\$184,450	8.50%	48	0.18%	2.11%
	07/29/10	\$170,000				
10427 Pine Glen Cir	10/14/16	\$230,000	17.95%	44	0.41%	4.95%
	02/28/13	\$195,000				
10504 Providence Dr	07/03/14	\$248,700	0.89%	12	0.08%	0.90%
	07/08/13	\$246,500				
10609 Providence Dr	11/08/16	\$260,000	15.56%	45	0.35%	4.17%
	02/15/13	\$225,000				
10720 Glenmary Springs Dr	04/01/16	\$194,000	11.49%	22	0.53%	6.35%
	06/11/14	\$174,000				
Average					0.29%	3.44%
Median					0.30%	3.57%

**Case Study 2 Reconciliation**

The sale evidence represents sales and resales of residential properties in a neighborhood containing a wireless communications facility tower. The tower existed prior to construction of homes in the project. There is volume sale evidence for analysis between 2009 and the most current date. The rates of appreciation between the two categories are consistent. While the

non-proximity sales show a slightly higher average rate of appreciation, the median rate difference is negligible. Comparing all proximity sales to non-proximity sales in the neighborhood, both categories show a consistent trend of values on a dwelling size per square foot basis. In summary, there is no negative influence on value from the tower facility.

**Case Study 3 - Proximity Sales**

- Facility: Wireless Communications Facility, monopole construction, 140' height, residential single-family detached location
- Address: 7200 Woodhaven Road, Louisville, Jefferson County
- 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 1000' proximity to facility installation
- Reconciliation of analysis: The data represents sale activity between 01/01/2009 and 02/01/2017. Each property transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is 0.78% to 5.98%. The average appreciation is 3.74%, and the median or middle point of the range is 3.81%. It is noted that the sales of 7306 Quail Ridge Court occurred both before and after the tower installation and the rate of appreciation is consistent with the general trend.

Address	Sale Date	Sale Price	% Change	Months	% Change/ Month	% Change/ Year
5904 Bluffington Ct	11/21/12	\$130,900	5.56%	16	0.35%	4.21%
	07/28/11	\$124,000				
6001 Hickory Tree Rd	05/28/15	\$128,200	25.69%	52	0.50%	5.98%
	02/10/11	\$102,000				
7118 Ridge Creek Rd	03/25/16	\$150,000	26.05%	60	0.43%	5.21%
	03/28/11	\$119,000				
7215 Chestnut Tree Ln	11/01/13	\$140,000	6.87%	29	0.24%	2.86%
	06/10/11	\$131,000				
7303 Chestnut Tree Ln	10/21/14	\$162,500	3.83%	59	0.06%	0.78%
	11/16/09	\$156,500				
7306 Quail Ridge Rd	09/02/16	\$145,000	20.83%	74	0.28%	3.40%
	07/21/10	\$120,000				
Average					0.31%	3.74%
Median					0.32%	3.81%

**Case Study 3 - 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
- 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 1000' proximity to facility installation
- Reconciliation of analysis: The data represents sale activity between 01/01/2009 and 02/01/2017. Each property transferred two or more times in the time period. The price difference between two back-to-back transfers of each property is the amount of appreciation or depreciation due to market conditions, or time. The range of annual appreciation is 0.39% to 6.66%. The average appreciation is 3.74%, and the median or middle point of the range is 3.98%. It is noted that the sales of 7102 Ridge Creek Road occurred before and during the tower construction, and the sales of 7403 Covey Place occurred both before and after the tower installation. The rates of appreciation are consistent with the general trend.

Address	Sale Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
7102 Ridge Creek Rd	05/06/16 10/03/11	\$149,900 \$135,500	10.63%	55	0.19%	2.31%
7302 Bluffington Rd	03/22/13 09/24/10	\$139,000 \$137,650	0.98%	30	0.03%	0.39%
7403 Covey Pl	10/31/16 02/26/14	\$156,000 \$135,500	15.13%	32	0.47%	5.64%
7404 Covey Pl	12/30/15 02/08/13	\$130,000 \$109,000	19.27%	35	0.56%	6.66%
Average					0.31%	3.75%
Median					0.33%	3.98%

**Case Study 3 Reconciliation**

The sale evidence represents sales and resales of residential properties in a neighborhood containing a wireless communications facility tower. The tower was constructed after homes were constructed in the project. There is volume sale evidence for analysis between 2009 and the current date. The rates of appreciation between the two categories are very consistent. In addition, properties with sales on both sides of the tower installation date illustrate consistent values and appreciation trends. Comparing all proximity sales to non-proximity sales in the neighborhood, both categories show a consistent trend of values on a dwelling size per square foot basis. In summary, there is no negative influence on value from the tower facility.

### **STUDY ANALYSIS CONCLUSION**

As illustrated by study results, the forces of value are consistent. Public utility infrastructure and related services are essential to meeting the accepted standard of living in municipal areas. Without adequate services, there will be a tendency for decreasing demand and property values in a neighborhood and market area. In order to meet needs of a neighborhood population, telecommunications tower facilities have become a common part of the landscape in much the same way that power and telephone lines and other utilities have. Like these other utilities, telecommunications tower facilities are needed in locations throughout any community.

Property owners near tower facilities, other highly visible utility structures, underground pipelines, associated easements, etc., are not penalized on value. Effectively, tower structures, like overhead electric distribution lines, signage, and buried utility easements, are beneficial. Due to expanding utilities and increased services, properties experience positive influences. Because of the increasing volume of similar structures over the past several decades, owners and buyers of residential properties expect service-related infrastructure. Any perceived negative proximity influences are absorbed by the landscape of a neighborhood and lifestyles of the population.

Therefore, based on market information, it is my opinion that the proposed facility will not adversely influence the value of properties in the immediate or general area.

**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 limited only by the reported assumptions and limiting conditions and 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

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



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

3815 Stonyrun Circle, Louisville, KY 40220 · 502.396.6664

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### **Professional Experience**

Glen D. 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

As a reviewer of appraisals, Mr. Katz serves clients in both the litigation and lending fields. For litigation support, reports are reviewed under USPAP, UASFLA, 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, residential, agricultural, special purpose properties
- Appraisal review, commercial and residential
- Eminent domain
- Expert witness/litigation support
- Property damages
- Insurance claims and cost analysis
- Bankruptcy
- Tax Appeal
- Estate valuation
- Agricultural land
- Complex residential housing
- High performance 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. The project included a market study on pipeline eased properties, sale book, and appraisals.
- Tax assessment appeal; 2014 – Representing Walgreen Co., performed an appraisal and testified as expert witness before the Kentucky Board of Tax Appeals regarding value methodology for “Absolute NNN” properties for ad valorem tax purposes.
- Performing county-level tax appeals for Walgreen store properties in Kentucky
- 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, 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. (education reference attached)

### **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 designation is held by individuals experienced in the valuation and evaluation of commercial, industrial, residential and other types of properties, and who advise clients on real estate investment decisions)
- SRA designated Member, Appraisal Institute
  - \*(The SRA designation is held by individuals experienced in the analysis and valuation of residential real property)
- AI-GRS designated Member, Appraisal Institute
  - \*(The AI-GRS designation is held by individuals experienced in commercial, industrial, residential and other types of properties appraisal review, to assist clients in satisfying issues related to due diligence and risk management)
- AI-RRS designated Member, Appraisal Institute
  - \*(The AI-RRS designation is held by individuals experienced in residential appraisal review, to 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: Residential
  - Valuation of Conservation Easements
- Member, International Right of Way Association (IRWA)
- Marshall & Swift Valuation Service Commercial Cost Approach Certification #782092
- 2014 to present – Vice President, Bluegrass Chapter, Appraisal Institute
- 2008 to present – Education Chair, Bluegrass Chapter, Appraisal Institute
- 2015 to present – Region V Regional Nominating Committee, Member, Appraisal Institute
- 2013, 2014 and 2016 – Leadership Development & Advisory Council, Appraisal Institute
- 2009 - 2012, 2014 – Alternate Regional Representative, Bluegrass Chapter, Appraisal Institute
- 2012 to 2013 – Second Vice President, Bluegrass Chapter, Appraisal Institute
- 2007 – Membership Development/Retention Committee, Bluegrass Chapter, Appraisal Institute
- MAI, SRA, AI-GRS and AI-RRS Candidate Advisor, Appraisal Institute

**EDUCATION LISTING**

<b>PROVIDER/TITLE</b>	<b>YEAR</b>
<b>APPRAISAL INSTITUTE PROFESSIONAL DEVELOPMENT PROGRAMS</b>	
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
<b>APPRAISAL INSTITUTE, COURSES</b>	
UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS RESIDENTIAL & COMMERCIAL VALUATION OF SOLAR	2017
APPLICATION & INTERPRETATION OF SIMPLE LINEAR REGRESSION	2017
CASE STUDIES IN APPRAISING GREEN RESIDENTIAL BUILDINGS	2016
7 HOUR NATIONAL USPAP UPDATE	2016
REVIEW THEORY - GENERAL	2016
REVIEW THEORY - RESIDENTIAL	2014
INTRODUCTION TO GREEN BUILDINGS: PRINCIPLES AND CONCEPTS	2014
QUANTITATIVE ANALYSIS	2013
FUNDAMENTALS OF SEPARATING REAL PROPERTY, PERSONAL PROPERTY, AND INTANGIBLE BUSINESS ASSETS	2013
THE APPRAISER AS AN EXPERT WITNESS: PREPARATION AND TESTIMONY	2012
LITIGATION APPRAISING: SPECIALIZED TOPICS AND APPLICATIONS, COURSE 705GRE	2010
CONDEMNATION APPRAISING: PRINCIPLES & APPLICATIONS	2010
ADVANCED SALES COMPARISON & COST APPROACHES	2009
VALUATION OF CONSERVATION EASEMENTS CERTIFICATE PROGRAM	2008
ADVANCED RESIDENTIAL REPORT WRITING, PART II	2008
ADVANCED RESIDENTIAL APPLICATIONS & CASE STUDIES, PART I	2007
GENERAL MARKET ANALYSIS AND HIGHEST & BEST USE	2007
RESIDENTIAL MARKET ANALYSIS AND HIGHEST & BEST USE	2007
REPORT WRITING AND VALUATION ANALYSIS	2007
STANDARDS OF PROFESSIONAL PRACTICE, PART C	2004
CONDEMNATION APPRAISING; BASIC PRINCIPLES & APPLICATIONS	1999
STANDARDS OF PROFESSIONAL PRACTICE, PART B	1999
STANDARDS OF PROFESSIONAL PRACTICE, PART A	1994
EXAM 202 CHALLENGE, APPLIED INCOME PROPERTY VALUATION	1994
EXAM 201 CHALLENGE, PRINCIPLES OF INCOME PROPERTY APPRAISING	1991
EXAM 101 CHALLENGE, INTRODUCTION TO APPRAISING REAL PROPERTY	1991
<b>APPRAISAL INSTITUTE, SEMINARS</b>	
DRONE TECHNOLOGY AND ITS IMPACT ON THE APPRAISAL INDUSTRY	2017
RESIDENTIAL APPLICATIONS: USING TECHNOLOGY TO MEASURE AND SUPPORT APPRAISAL ASSIGNMENT RESULTS	2017
YELLOW BOOK CHANGES - OVERVIEW FOR APPRAISERS	2017
BUSINESS PRACTICE AND ETHICS	2016
RESIDENTIAL APPLICATIONS 2: USING MICROSOFT EXCEL TO ANALYZE AND SUPPORT APPRAISAL ASSIGNMENT RESULTS	2016
UNDERSTANDING COLLATERAL UNDERWRITER	2015
INCOME APPROACH FOR RESIDENTIAL APPRAISERS	2015
GENERAL DEMONSTRATION APPRAISAL REPORT WRITING	2014
MARKETABILITY STUDIES: ADVANCED CONSIDERATIONS AND APPLICATIONS	2014
APPRAISING THE APPRAISAL: APPRAISAL REVIEW-GENERAL	2013
ADVANCED SPREADSHEET MODELING FOR VALUATION APPLICATIONS	2012
THE UNIFORM APPRAISAL DATASET FROM FNMA AND FHLMC	2011
ONLINE COOL TOOLS: NEW TECHNOLOGY FOR REAL ESTATE APPRAISERS	2011
ONLINE APPRAISING MANUFACTURED HOUSING	2011
VALUATION OF GREEN RESIDENTIAL PROPERTIES	2011
AN INTRODUCTION TO VALUING COMMERCIAL GREEN BUILDINGS	2010
USING SPREADSHEET PROGRAMS IN REAL ESTATE APPRAISALS	2010
APPRAISING DISTRESSED COMMERCIAL REAL ESTATE: HERE WE GO AGAIN	2010
EVALUATING RESIDENTIAL CONSTRUCTION	2009
THE NEW RESIDENTIAL MARKET CONDITIONS FORM	2009

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