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**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.: 2019-00176
CONVENIENCE AND NECESSITY TO CONSTRUCT	)	
A WIRELESS COMMUNICATIONS FACILITY	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY OF CASEY	)	

SITE NAME: DUNNVILLE RELO / PHIL

\*\*\*\*\*

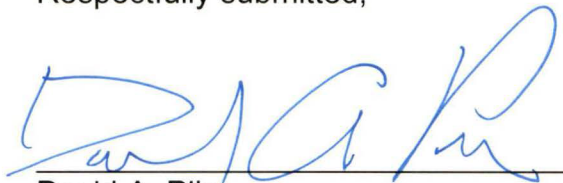
**APPLICANT'S FILING OF REAL ESTATE VALUE IMPACT STUDY**

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility ("AT&T" or "Applicant"), by counsel, files the attached and incorporated December 24, 2019 Real Estate Value Impact Study ("Katz Impact Study") designated as Exhibit A as expert testimony and evidence in this proceeding in support of grant of the requested Certificate of Public Convenience and Necessity. Mr. Katz's extensive professional credentials as an appraiser are detailed beginning on page 24.


## CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 30th day of December 2019, the foregoing was hand-delivered to the offices of the Kentucky Public Service Commission in Frankfort, Kentucky for filing in the within proceeding. No natural person or entity has been granted intervention in this proceeding. Accordingly, no other service of this Motion has been made.

Respectfully submitted,



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And



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# **EXHIBIT A**

# **Real Estate Value Impact Study**

**For**

**Proposed Wireless Communications Facility  
New Cingular Wireless, PCS, LLC, d/b/a AT&T Mobility  
Site Name: Dunville Relo  
PSC Case #: 2019-00176  
Assessor Parcel Number: 055-28  
74 Antioch Road  
Liberty, Casey County, Kentucky 42539**

**Date of Report**

**December 24, 2019**

**Prepared For**

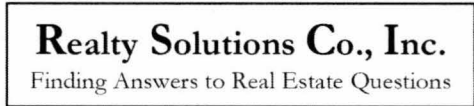
**Kentucky Public Service Commission  
211 Sower Boulevard  
Frankfort, Kentucky 40601**

**Prepared By**

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Realty Solutions Co., Inc.  
P.O. Box 20983  
Louisville, KY 40250**

December 24, 2019

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: Dunville Relo  
PSC Case #: 2019-00176  
Assessor Parcel Number: 055-28  
74 Antioch Road  
Liberty, Casey County, Kentucky 42539

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 otherwise competitive as replacements in the market.

Public utilities provide a platform for economic sustainability, community growth, safety and education. These factors in turn influence value and demand for real estate. Based on the actions of buyers, occupants, and sellers of real estate, it is clear that communications towers are part of this platform. There are no indications for value diminution of low-density residential and agricultural properties located with proximity to the proposed facility, or the neighborhood in general. Consistently, factual 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.

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

Respectfully,

A handwritten signature in black ink that reads "Glen D. KATZ". The signature is written in a cursive style with some capital letters.

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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 often 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 use characteristics, but are more resilient than other residential and commercial categories.

Casey County has not adopted planning and zoning for unincorporated areas of the County, and the project neighborhood is not subject to local zoning regulation. This is a frequent occurrence in low-density development and rural areas, and there are risks accepted 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 high impact on surrounding properties or a community 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 risks and buyer activity, communities without land-use controls continue to expand and develop need and demand for public utilities. The neighborhoods and communities remain influenced by social, economic, governmental, and environmental forces. There is no difference in regard to the positive impact from public utilities on surrounding values if a neighborhood does not have zoning regulations.

## **Facility Identification**

The facility will be in a low-density residential and agricultural area. The construction improvements will be comprised of a 230' self-support structure with 7' lightning arrester, totaling a structure height of 237 feet. Base elevation will be 970.12 feet. The construction will be located on a generally 100' x 100' leased site area with a 80' x 80' fenced compound. There will be supporting storage cabinets, and gravel ground cover. There will be space 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 Antioch Road, on the east side of U.S. 127. These characteristics are some of the most common for wireless communications facilities in similar areas of the United States.

## **Study Methodology**

This impact study 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 due to market conditions, and;
- direct comparison of properties with, and without, distance or view proximity exposure.

Specifically, the following steps form the analysis:

- Identify existing tower locations with surrounding developed land uses.
- Examine the neighborhood and market area to determine if there are compatible and competing properties with adequate sale activity to provide 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 an exponential increase in digital data, and the public demands satisfying that need as part of the core supply of public services. In particular, cellular service has become a predominant function in businesses, schools, and social services. Regarding households,



over 50% are served solely by cellular 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. 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 number of positive externalities for its users and their communities.
- **Governmental Forces:** Government responds to community needs for, laws and policies, public services, zoning, and building codes. Many jurisdictions have comprehensive plans requiring government agencies to expand public utilities and services. The regulations enabling public utilities are a direct reaction to public needs, particularly for education, economic purposes, and health and safety services. Another major impact of governmental influence in expansion of public services is developing wider choices of service providers and related fee 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, 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***

Frequently, 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.

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

**Mortgage Terms:** The following national programs influencing mortgages are researched to determine status of cell towers in relation to mortgage financing. In regard to lending, there is no influence on mortgage availability or terms.

**FHA:** Federal Housing Administration (FHA) through the Dept. of Housing and Urban Development (HUD), provides mortgage insurance on loans made by FHA-approved lenders throughout the U.S. It is the largest insurer of mortgages in the world. FHA has minimum loan program property standards contained in HUD Handbook 4000.1. In particular, there is a section on 'Externalities' and 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 a criterion for hazard analysis in obtaining FHA/HUD funding insurance for mortgage lenders.

**VA:** 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 and lowers risk as a result, 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 a criterion for hazard analysis for obtaining VA loans.

**USDA:** 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 loan guarantees 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 a criterion in hazard analysis for obtaining loans under USDA/RHS programs.

**FNMA:** Federal National Mortgage Association (FNMA), aka 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 a primary information guide for 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 that will be purchased by Fannie Mae.

**FHLMC:** The Federal Home Loan Mortgage Corporation, (FHLMC), aka Freddie Mac, is a government-sponsored enterprise (GSE). Freddie Mac 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 “Seller/Servicer Guide” publication is a primary information guide for secondary mortgage market lending. The Seller/Servicer 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 that will be purchased by Freddie Mac.

### ***Study Analysis Conclusions***

As illustrated by study results, both in this report and in nationally published studies, 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 services, by nature, expand to meet demands of expanding population and community growth. The benefits of 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 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, highly visible utility structures, 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 are beneficial, like overhead electric distribution lines, signage, and buried utility easements. Due to expanding utilities and increased services, residential, commercial and agricultural neighborhoods and properties experience positive influences. Because of the demand, owners and buyers of real estate expect excellent cell phone reception, and that connectivity requires adequate 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. They have no negative effect on value – just as telephone poles, utility lines, streetlights, and the other visible infrastructure components of modern life do not negatively affect real estate values.

Therefore, based on the actions of market participants buying, occupying, investing, and selling real estate properties, it is clear 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***

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

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

- Existing 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***

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.

- One of the most common analysis methods is “market conditions” value trend analysis. This compares value trends of properties located with 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 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 other characteristics of the properties are held constant, and the effect, if any, due to proximity is isolated. For this study, with the data currently available, the “before and after” and “market conditions” 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, 6<sup>th</sup> 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.

### ***Market Conditions Value Trend Analysis***

For projects that have been in place for a long period, market conditions 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 periodic 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 periodic 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 periodic 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 periodic 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 substantial physical changes that 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; wireless communications tower facilities and high-tension electrical transmission lines. 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 01/01/2013 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. The range of annual value change is 0.84% to 9.10%. The average rate of annual appreciation is 4.07%, and the median or middle point of the range is 4.28%.

Address		Sale Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
4701 Silverado	PI	10/26/2018 11/30/2016	\$273,000 \$264,000	3.41%	23	0.15%	1.79%
4704 Silverado	PI	9/1/2016 3/21/2013	\$270,000 \$235,000	14.89%	41	0.36%	4.31%
4709 Stony Brook	Dr	5/31/2019 6/8/2017	\$195,000 \$186,000	4.84%	24	0.20%	2.44%
4723 Ferrer	Way	6/15/2018 12/5/2014	\$185,000 \$140,000	32.14%	42	0.76%	9.10%
4916 Bova	Way	4/29/2019 5/30/2014	\$193,000 \$155,000	24.52%	59	0.42%	4.98%
8804 Loch Lea	Ln	12/2/2016 12/6/2013	\$149,900 \$133,000	12.71%	36	0.35%	4.24%
9319 Villa Fair	Ct	5/18/2018 1/22/2015	\$174,000 \$150,000	16.00%	40	0.40%	4.82%
10509 Vintage Creek	Dr	9/11/2015 4/15/2014	\$255,000 \$252,000	1.19%	17	0.07%	0.84%
Average						0.34%	4.07%
Median						0.36%	4.28%

**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 01/01/2015 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. The range of annual value change is 1.12% to 6.59%. The average rate of annual appreciation is 4.00%, and the median or middle point of the appreciation range is 3.64%.

Address		Sold Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
4310 Lochridge	Pkwy	1/14/2016	\$195,000	0.52%	6	0.09%	1.12%
4310 Lochridge	Pkwy	7/30/2015	\$194,000				
4510 Jolynn	Dr	6/24/2019	\$225,400	12.70%	31	0.42%	4.98%
4510 Jolynn	Dr	12/6/2016	\$200,000				
5003 Fairwood	Ln	3/28/2019	\$175,000	21.53%	39	0.55%	6.57%
5003 Fairwood	Ln	12/18/2015	\$144,000				
5008 Bowcester	Dr	3/4/2019	\$176,000	21.38%	39	0.55%	6.59%
5008 Bowcester	Dr	12/7/2015	\$145,000				
5105 Cynthia	Dr	1/4/2019	\$163,500	7.57%	34	0.22%	2.69%
5105 Cynthia	Dr	3/15/2016	\$152,000				
8711 Michael Edward	Dr	11/13/2018	\$175,000	12.54%	44	0.28%	3.39%
8711 Michael Edward	Dr	3/4/2015	\$155,500				
8902 Loch Lea	Ln	8/7/2019	\$182,000	10.98%	52	0.21%	2.54%
8902 Loch Lea	Ln	4/16/2015	\$164,000				
9105 Talitha	Dr	2/22/2019	\$187,000	5.95%	27	0.22%	2.61%
9105 Talitha	Dr	11/14/2016	\$176,500				
9115 Marse Henry	Dr	5/15/2017	\$188,000	13.25%	24	0.55%	6.54%
9115 Marse Henry	Dr	5/7/2015	\$166,000				
9402 Talitha	Dr	9/27/2019	\$200,000	11.11%	34	0.32%	3.90%
9402 Talitha	Dr	11/21/2016	\$180,000				
10202 Saint Rene	Rd	5/9/2018	\$222,513	11.31%	32	0.35%	4.21%
10202 Saint Rene	Rd	9/1/2015	\$199,900				
10609 Wildflower Woods	Ct	9/4/2019	\$248,000	12.73%	54	0.24%	2.84%
10609 Wildflower Woods	Ct	3/13/2015	\$220,000				
Average						0.33%	4.00%
Median						0.30%	3.64%

**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 2013 and the current market. The proximity sales show a slightly higher average rate of appreciation, and a slightly higher median rate. The difference is negligible.

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	\$124	\$121
Price Per Sq. Foot Total Finished Area	\$103	\$95

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 01/01/2014 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. The range of annual value change is 0.64% to 3.29%. The average annual appreciation is 2.25%, and the median or middle point of the range is 2.67%.

Address	Sold Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
8503 Missionary Ct	9/27/2018	\$302,000	12.48%	50	0.25%	3.02%
	8/12/2014	\$268,500				
8505 Missionary Ct	8/25/2017	\$239,000	6.22%	28	0.22%	2.67%
	4/28/2015	\$225,000				
8931 Gentlewind Way	5/15/2018	\$280,000	1.82%	34	0.05%	0.64%
	7/13/2015	\$275,000				
8937 Gentlewind Way	3/15/2019	\$282,000	5.22%	38	0.14%	1.64%
	1/8/2016	\$268,000				
10619 Glenmary Springs Dr	11/14/2016	\$244,900	6.50%	24	0.27%	3.29%
	11/24/2014	\$229,950				
Average					0.19%	2.25%
Median					0.22%	2.67%

**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 01/01/2014 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. The range of annual value change is -0.25% to 3.60%. The average annual appreciation is 2.26%, and the median or middle point of the range is 2.22%.

Address	Sold Date	Sale Price	% Change	Months	% Change /Month	% Change /Year
8607 Sanctuary Ln	3/30/2016	\$245,000	6.06%	20	0.30%	3.60%
	7/25/2014	\$231,000				
8622 Sanctuary Ln	12/21/2017	\$265,000	2.91%	29	0.10%	1.19%
	7/13/2015	\$257,500				
8627 Sanctuary Ln	10/31/2018	\$279,300	-0.57%	27	-0.02%	-0.25%
	8/5/2016	\$280,900				
8728 Broadwood Ct	6/11/2019	\$204,000	22.89%	40	0.57%	6.90%
	2/16/2016	\$166,000				
8737 Broadwood Ct	4/29/2019	\$188,900	16.25%	59	0.28%	3.31%
	6/6/2014	\$162,500				
8819 Gentlewind Way	5/18/2018	\$255,000	4.94%	36	0.14%	1.65%
	5/22/2015	\$243,000				
8903 Gentlewind Way	9/30/2016	\$307,500	6.03%	26	0.23%	2.78%
	8/1/2014	\$290,000				
10105 Cedar Garden Dr	11/1/2019	\$299,900	4.81%	17	0.28%	3.38%
	5/30/2018	\$286,130				
10500 Parkhurst Ct	8/27/2018	\$220,000	0.23%	13	0.02%	0.20%
	7/14/2017	\$219,500				
10502 Gentlewind Ct	2/29/2016	\$270,000	0.93%	24	0.04%	0.46%
	2/19/2014	\$267,500				
10504 Providence Dr	10/19/2017	\$254,000	2.13%	40	0.05%	0.65%
	7/3/2014	\$248,700				
10614 Providence Dr	9/20/2019	\$290,000	18.37%	67	0.27%	3.28%
	2/18/2014	\$245,000				
Average					0.19%	2.26%
Median					0.18%	2.22%

### **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 2014 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	\$111	\$116
Price Per Sq. Foot Total Finished Area	\$99	\$108

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. 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. 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.

(continued next page)



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	\$116	\$115
Price Per Sq. Foot Total Finished Area	\$93	\$88

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 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, 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 neighborhoods and properties experience positive influences. Because of the deployment of cellular facilities over the past several decades, owners and buyers of real estate expect excellent cell phone reception, and that connectivity requires adequate 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 visible infrastructure components of modern life do not negatively affect real estate values.

Therefore, based on the actions of market participants buying, occupying, investing, and selling real estate properties, it is clear 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 project that is the subject of this report and no personal interest with respect to the parties involved.
- I have no bias with respect to the project 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 report.
- No one provided significant analysis assistance to the undersigned.



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

## Professional Qualifications

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

#### 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, subject matter expert witness, and appraisal practice instructor. 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 appraisal practice, Mr. Katz has achieved the Appraisal Institute MAI (general) designation, and SRA (residential) designation. In specialized appraisal 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 a subject matter expert witness, Mr. Katz has participated in cases regarding land and building damage, proximity influence, insurance claims, property tax assessment, construction defects, divorce settlements, boundary disputes, zoning noncompliance, bankruptcy, and alleged fraud.

As an appraisal practice instructor, Katz is qualified to teach a variety of Appraisal Institute residential, commercial, and specialized practice classes and seminar.

#### **Areas of expertise include:**

- Commercial, industrial, complex residential, agricultural, special purpose properties
- Appraisal review, commercial and residential
- Proximity impact
- 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 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 other 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 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 opinions of value, evaluations, review, 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 Conservation Easements
  - Valuation of Sustainable Buildings: Commercial
  - Valuation of Sustainable Buildings: Residential

### **Appraisal Institute Service**

- 2018 to present – National Education Committee Liaison, Region V, Appraisal Institute
- 2018 – President, Bluegrass Chapter, Appraisal Institute
- 2008 to 2017, 2020 – 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 2018 – Region V Regional Nominating Committee, Appraisal Institute
- 2013, 2014 and 2016 – Leadership Development & Advisory Council, Appraisal Institute
- 2009 to 2012, 2014 – Alternate Regional Representative, Bluegrass Chapter, Appraisal Institute
- 2007 – Membership Development/Retention Committee, Bluegrass Chapter, Appraisal Institute
- Candidate Advisor - MAI, SRA, AI-GRS, and AI-RRS, Appraisal Institute

**ADVANCED STUDY CURRICULUM**

<u>PROVIDER/TITLE</u>	<u>YEAR</u>
<b>APPRAISAL INSTITUTE PROFESSIONAL DEVELOPMENT PROGRAMS</b>	
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
<b>APPRAISAL INSTITUTE, COURSES</b>	
APPRAISAL OF MANUFACTURED HOMES FEATURING NEXT-GENERATION MANUFACTURED HOMES	2019
APPLICATION & INTERPRETATION OF SIMPLE LINEAR REGRESSION	2019
PRACTICAL APPLICATIONS IN APPRAISING GREEN COMMERCIAL PROPERTIES	2018
UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS	2017
RESIDENTIAL & COMMERCIAL VALUATION OF SOLAR	2017
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, & 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
<b>APPRAISAL INSTITUTE, SEMINARS</b>	
HOT TOPICS AND MYTHS IN APPRAISER LIABILITY	2018
DRONE TECHNOLOGY & ITS IMPACT ON THE APPRAISAL INDUSTRY	2017
RESIDENTIAL APPLICATIONS: USING TECHNOLOGY TO MEASURE & SUPPORT APPRAISAL ASSIGNMENT RESULTS	2017
RESIDENTIAL APPLICATIONS 2: USING MICROSOFT EXCEL TO ANALYZE & 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 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
APPRAISAL OF SPECIAL-PURPOSE PROPERTIES	1996

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