

**REBUTTAL TESTIMONY
OF
DAVID C. LENNHOFF
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUE-2007-00031**

1 **Q. Please state your name and business address.**

2 A. My name is David C. Lennhoff and I am president of PGH Consulting, LLC. My
3 business address is 15825 Shady Grove Road, Suite 110, Rockville, Maryland 20850.

4 **Q. Do you have a curriculum vitae that provides detailed information on your**
5 **educational and professional background?**

6 A. Yes. That information is contained in Rebuttal Attachment DCL-1.

7 **Q. Are you licensed in the Commonwealth of Virginia to conduct real property**
8 **valuations?**

9 A. Yes. I am a Certified General Real Estate Appraiser, #4001-000225, expires 10/31/2009.

10 **Q. Please summarize your professional experience.**

11 A. In 1973, after serving in Vietnam as an Infantry Platoon Leader (1st Lt.), I took a job as a
12 construction loan officer/staff appraiser with a Montgomery County, Maryland savings
13 and loan. I worked there as an appraiser until 1988, advancing to president of the
14 lender's appraisal division. Work there included valuations and appraisal reviews of all
15 types of property, mostly in the metropolitan Washington, DC area, but also in various
16 other jurisdictions across the country. I formed the Lennhoff Appraisal Group, Inc., in
17 1988, then took on a partner in 1992 and changed the name to the Burke Lennhoff
18 Appraisal Group, Inc. I was president of both companies. I joined Delta Associates, a

1 Transwestern Company, in 1997 and served there as president of the appraisal division
2 until February 2007, when I joined PGH Consulting, LLC as president.

3 My appraisal practice has evolved into mostly litigation valuation, and comprises the
4 valuation and analyses of complex properties and problems across the United States.
5 Assignments have included all types of properties and a variety of issues. Examples of
6 complex assignments include the Gettysburg Tower in Pennsylvania, the Dulles
7 Greenway, the USAA Corporate Headquarters in San Antonio, Texas, fiber optic cable
8 easements across Maryland, acreage and military housing in Alaska, hospitals in
9 California, and steel mills in Michigan and Indiana. Areas of recognized expertise
10 include the *Uniform Standards of Professional Appraisal Practice*; advanced appraisal
11 methodology, particularly highest and best use and advanced cost approach and sales
12 comparison; and the allocation of various assets of a going concern.

13 I have testified in numerous jurisdictions across the country on a variety of matters,
14 including condemnation, tax assessment appeals, construction defects, bankruptcy,
15 divorce, zoning appeals and contract disputes. I have also testified twice before U.S.
16 House of Representatives committees, most recently on the topic of appropriate appraisal
17 methodology for easements.

18 **Q. Have you been active in professional organizations and in the development and**
19 **training of professional appraisers?**

20 A. I have taught at the local, national and international levels for the Appraisal Institute
21 since the early 1980s. Courses and seminar topics have included Uniform Standards,
22 Market Analysis and Highest and Best Use, Advanced Income Capitalization, Advanced
23 Sales Comparison & Cost Approaches and Uniform Appraisal Standards for Federal

1 Land Acquisitions. Recent international assignments have included Seoul, South Korea,
2 Beijing, China, and Mexico City, Mexico. I have been chief reviewer for several
3 advanced courses and author and development team member of several others. I am also
4 an Associate Professional Lecturer in Finance, The George Washington University, and
5 teach a class in highest and best use and income capitalization in their MBA-Finance
6 program. I was chairman of the national Appraisal Institute Education committee and
7 Curriculum subcommittee, Editor in Chief of the Institute's quarterly *Appraisal Journal*,
8 and technical consultant and section reviewer for several Institute textbooks, including
9 *The Appraisal of Real Estate, the Dictionary of Real Estate Appraisal, Appraising*
10 *Industrial Properties and Hotels and Motels-Valuations and Market Studies.*

11 I authored the original seminar, "Recent Developments in Federal, State and Local Real
12 Estate Appraisal Law and Regulation" for the Commonwealth of Virginia Real Estate
13 Appraiser Board and updated the Appraisal Foundation's 15-Hour National Uniform
14 Standards of Professional Appraisal Practice course in 2004.

15 I have authored more than 26 articles for such publications as *The Appraisal Journal*,
16 *Probate & Property*, and *Right of Way*, and edited the book, *A Business Enterprise Value*
17 *Anthology*, which was a required text for an Appraisal Institute course on asset allocation.

18 **Q. Have you previously provided testimony as an expert?**

19 A. I have provided testimony in numerous jurisdictions on a variety of topics. Included are
20 many northern Virginia jurisdictions, such as Loudoun County, Fairfax County, and
21 Alexandria, on issues related to such matters as condemnation and assessment appeals. I
22 have appeared for both property owners and jurisdictions.

1 **Q. Have you been retained as an expert witness in this case?**

2 A. Yes. I have been retained by Virginia Electric and Power Company (“Dominion Virginia
3 Power” or the “Company”) to review the testimony of William C. Harvey and James
4 Ruffner regarding the impact of a proposed power line easement on adjacent properties.
5 As a part of the review I read their testimony and the work papers provided in discovery.
6 With respect to Mr. Harvey’s work, I was only asked to review the methodology used in
7 his matched pair analysis. As regards Ruffner, I was asked to evaluate the
8 appropriateness of the methodology used by him to estimate the diminution in value
9 caused by the taking of the easement--to include his calculation of damages to the
10 remainder--and credibility of the conclusion reached.

11 **Q. Have you inspected the properties that are the subject of these analyses?**

12 A. No. I have not made a physical inspection. My analysis is based on the data provided by
13 the appraisers in their work, as described.

14 **Q. What observations can you make regarding Mr. Ruffner’s work?**

15 A. It is my conclusion that the methodology used by Mr. Ruffner is not appropriate or
16 adequate to allow development of a credible conclusion.

17 **Q. Please explain the reasoning for your conclusion that the work is not credible.**

18 A. Mr. Ruffner begins his analysis with a presumption that a loss in value, to include
19 damages to the remainder, has occurred. This is a faulty premise, as there is no
20 consensus in the literature that property abutting a right-of-way suffers a value loss. The
21 evidence for such a conclusion must be developed from fact. No such evidence has been
22 provided. See, for example, Jennifer M. Pitts and Thomas O. Jackson, “Power Lines and

1 Property Values Revisited,” *The Appraisal Journal* (Chicago: Appraisal Institute, Fall
2 2007) 323, a copy of which is contained in Rebuttal Attachment DCL-2.

3 The valuation problem requires an estimate of the diminution in value to the larger parcel
4 (assuming no easement) as a result of the proposed construction of high-voltage
5 transmission lines. The diminution includes two possible aspects: the loss of salable
6 utility both to the area encumbered and to the unencumbered portion of the larger parcel.
7 (All easement acquisitions are partial acquisitions because the fee, even if it is raw land
8 of no utility, will remain with the original owner.) Damages to the land area encumbered
9 by the easement range from 0% to 100% of the land’s fee value. See: J.D. Eaton, *Real*
10 *Estate Valuation in Litigation 2nd ed.* (Chicago: Appraisal Institute, 1995) 368. The loss
11 in value as a percent of the fee is a function of four elements: the loss of present utility,
12 the loss of future utility, the accessory rights to be acquired, and the obligations of the
13 parties. The degree of damage to the remainder can vary greatly depending on the
14 highest and best use of the property and the location of the easement in relation to the
15 boundary line of the larger parcel. (Eaton, p. 360) Of course, it is imperative that a
16 careful analysis be undertaken to identify the larger parcel, in order that the “damages to
17 what” question can be correctly answered. No larger parcel analysis is evident in any of
18 Mr. Ruffner’s work product.

19 Although different methods exist for proper analysis of the diminution, “the acquisition
20 of an easement by a condemnor does not give the appraiser a license to guess.” (Eaton,
21 357) Similarly, “the estimate of damages should be no more conjectural or speculative
22 than the appraiser’s estimate of market value before and after the acquisition. Strict proof
23 of the loss in market value to the remaining parcel is obligatory. The extent to which the

1 utility of the property has been destroyed and its market value diminished must
2 necessarily be established by factual data having a rational foundation in support of such
3 a claim.” (Eaton, p. 295)

4 The most commonly advanced method to estimate the total diminution is a before and
5 after technique whereby the appraiser estimates the value of the property before the
6 acquisition then again, as of the same date, the value of the property as if the acquisition
7 had occurred. The difference between the two is the total loss.

8 Although Mr. Ruffner purports to employ a before and after methodology, in fact he has
9 not. Instead, he attempts to value the property in its before condition, then simply uses
10 the unit rate as the loss from the easement, in effect assuming a 100% interest has been
11 taken. This is inconsistent with the wording of the Company’s form Transmission Right
12 of Way Agreement (VA), which clearly leaves the grantor of the easement (the
13 subservient estate) significant rights. Specifically, “the Grantor may use the Easement
14 Area for any purpose which is not inconsistent with the rights granted to Company
15 herein.”

16 Next, he applies a completely unsupported percent of this conclusion to represent the
17 additional damages to the remainder. Furthermore, the analysis leading to the before
18 conclusion is replete with unsupported adjustments. In fact, no real support is offered for
19 a single element of the analysis, leaving it no more than a conjectural, speculative guess.

20 The effect is to render the conclusion completely unreliable.

1 **Q. Do you have any further comments on Mr. Ruffner's analyses?**

2 A. Additional concerns are presented by the apparent inconsistency among the data included
3 in his work. For instance, in his before analysis—that is, the valuation of the larger
4 parcel assuming no easement—properties with existing HVTL easements are
5 differentiated from comparables without such easements by applying an adjustment to the
6 comparables. The comparables are all given 10% adjustments to represent the difference.
7 This 10% seems to disregard potential differences among the properties such as location
8 of the easement relative to the remainder parcel, and seems completely inconsistent when
9 compared to the conclusions reached for the diminution due to the proposed easement.

10 Finally, Mr. Ruffner has also offered his opinion of the diminution to nonadjacent
11 properties (those not taken for the easement), applying his analysis to properties out to
12 one half a mile from either edge of the right-of-way. No basis is given for the half mile
13 distance, and there is no way to tell the specific visibility impacts, if any, to these
14 properties. Appropriate methodology would require that each property be analyzed
15 individually to determine the extent of the diminution.

16 **Q. Do you have any other comments on Mr. Ruffner's work product?**

17 A. Although there are many other elements to the work that would ordinarily require
18 attention, because the entire conclusion has been compromised by the purely speculative
19 nature of the analysis, it adds nothing to my testimony to introduce the other deficiencies.

20 **Q. Have you completed an analysis of Mr. Harvey's work product?**

21 A. My scope of work with respect to Mr. Harvey was limited to an evaluation of his
22 matched pair analysis, a copy of which is contained in Rebuttal Attachment DCL-3. I did

1 not analyze the other elements of his study. As concerns the matched pair analysis I have
2 the following comments.

3 The paired sales analysis valuation technique, also known as the matched pairs method, is
4 an unquestionably sound concept. Essentially, an appraiser locates several pairs of sales
5 that are similar in all respects except for one. By comparing each pair, the difference in
6 price indicates the contribution or diminution of a particular feature, in this case, the
7 influence of the proposed power line easement. In using the method, it is important to
8 introduce supporting evidence for each adjustment. See: James H. Boykin, *Land*
9 *Valuation: Adjustment Procedures and Assignments* (Chicago: Appraisal Institute, 2001),
10 p. 67. Unfortunately, rarely are appraisers able to discover sets of sales that are so similar
11 that they reveal the value of different value-influencing components. As a result,
12 intermediate adjustment to the pairs is necessary, thereby equating the two except for the
13 sought after influence.

14 Key to correct and credible application of this method is identification of the various
15 differences between the sales paired then solidly supporting the adjustments made to
16 equalize them. In fact, whenever possible, *each adjustment* should be supported by more
17 than one pair of comparable sales. (Boykin, p. 68)

18 Mr. Harvey employed ten sets of paired sales, ranging in dates of sale from 2000 to 2007.
19 Multiple listing ("MLS") descriptions of each are provided in his working papers. By
20 pairing, a range of conclusions emerges from which Mr. Harvey takes an average of 15%.
21 Unfortunately, the range is far too wide to be meaningful, extending from a -2%
22 diminution to a -39%. Five of the conclusions indicate a loss of less than 10%, four less

1 than 5%, while two indicate a loss greater than 30%. With ten pairs, this is simply too
2 wide to allow any comfort level with the conclusion.

3 More importantly, the paired sales analysis itself is fatally flawed, as it offers no support
4 at all for the adjustments equating the pairs except for the power line influence.

5 Furthermore, there are many differences between the pairs that have been overlooked.

6 This thread permeates the pairs and can be illustrated with examples.

7 In the first pair, the only adjustment made is for "Pos.Bldg.Imps," which apparently
8 stands for possible building improvements. The 16% adjustment for this element is
9 without any support, and is thus unreliable. Furthermore, the MLS indicates many other
10 differences that have apparently not been addressed. For instance, the comparable was
11 reportedly "priced below appraisal" and took 212 days on the market to sell. It was a
12 6,242 sf house built in 1999, while the subject (control sale) comprised only 4,924 sf and
13 was built in 2005. The subject is on 12.7 acres and the comparable is on only 10 acres,
14 yet no adjustment was made. The pair had a \$65/month homeowners association fee
15 while the subject had none. No adjustment was made.

16 The third pair involved a control sale whose price had been reduced 18% and which sold
17 with a \$9,000 seller subsidy. The pair sold at about 9% below list and did not involve a
18 subsidy. No adjustments were made.

19 The fourth pair involves land sales. The control was a 12.05 acre vacant site zoned CR1,
20 which was apparently 100% financed. The pair was 13.23 acres zoned AR2, but with a
21 special exception from Loudoun County. It had a barn, office and full irrigation. No
22 adjustments were made.

1 Pair 9 includes a -6% market conditions adjustment to equate a February 2006 sale with
2 the July 2006 control. This would suggest values declined in that time period, which
3 seems inconsistent with the adjustments for market conditions to some of the other pairs.

4 Pair 6 involved a control that was built in 2000 and had 2,414 sf of living area. This
5 transaction included a \$5,000 seller subsidy. The pair was built in 1994 and had only
6 1,914 sf of living area. No adjustments were made for any of these apparent differences.

7 **Q. Do you have any other comments about the matched pairs analysis of Mr. Harvey?**

8 A. Another significant element to the analysis is the lack of any differentiation among the
9 ten control sales in the pairs with respect to individual influence of the power lines. All
10 are reported to be less than 1,000 linear feet from a power line. Nothing is said about
11 individual views, location of improvements relative to the lines, etc. It is highly unlikely
12 that they all share identical influences. Therefore, it is unlikely that the various
13 conclusions of diminution—notwithstanding the serious questions about application of
14 the analysis resulting in the determinations—can be lumped together and averaged and
15 provide any legitimate answer to the question the analysis is trying to answer. As with
16 the Ruffner model, Harvey's method is simply too flawed to result in a meaningful
17 conclusion.

18 **Q. Does that conclude your testimony?**

19 A. Yes.

**CURRICULUM VITAE
DAVID C. LENNHOFF
15825 Shady Grove Road, Suite 110
Rockville, MD 20850
301.947.8440**

GENERAL

- President, PGH Consulting, LLC, Rockville, Maryland.

PREVIOUS EMPLOYMENT

- President, Appraisal Division, Delta Associates, Vienna, Virginia, February 1997 to January 2007.
- President and partner, The Burke Lennhoff Appraisal Group, Inc., Gaithersburg, Maryland, April 1992 to February 1997.
- President and sole owner, The Lennhoff Appraisal Group, Inc., Gaithersburg, Maryland, October 1988 to April 1992.
- President, Real Estate Appraisal Services, Inc., Gaithersburg, Maryland, June 1975 to October 1988.

PROFESSIONAL DESIGNATIONS AWARDED

- MAI American Institute of Real Estate Appraisers, 1983.
- RM American Institute of Real Estate Appraisers, 1978.
- SREA Society of Real Estate Appraisers, 1987.
- SRPA Society of Real Estate Appraisers, 1982.
- SRA Society of Real Estate Appraisers, 1980.
- CRE Counselors of Real Estate, 2000.
- FRICS Fellow, Royal Institution of Chartered Surveyors, 2005.

COURSES/SEMINARS AUTHORED, DEVELOPED OR REVIEWED

- Developer for 2004 version of Appraisal Foundation's 15-Hour National Uniform Standards of Professional Appraisal Practice (USPAP) course.
- Developer for Appraisal Institute seminar, "Small Hotel/Motel Valuation: Appraising the Limited-Service Lodging Facility."
- Development Team Member for Appraisal Institute seminars, "Small Hotel/Motel Valuation," "Appraisal of Nonconforming Uses," and "Feasibility Analysis, Market Value and Investment Timing: Introducing the Impact of Option Value," "Regression Analysis in Appraisal Practice: Concepts and Applications"; and Courses 320, 530, 600, 610, 620, 700 and 800.
- Developer and Reviewer, Appraisal Institute Course 330, "Apartment Appraisal: Concepts and Applications."
- Appraisal Portion, GRI Program, Washington, D.C. Board of REALTORS.
- Appraisal Portion, GRI Program, REALTOR Institute of Virginia.
- Seminar on Appraisal Techniques (Analysis of the URAR and Ethical Requirements and Standards of Professional Practice), Mortgage Bankers Association of America.
- "Recent Developments in Federal, State and Local Real Estate Appraisal Law and Regulation," Commonwealth of Virginia Real Estate Appraiser Board.
- Member, HUD Single Family-Temporary Examination Taskforce.

CURRICULUM VITAE (continued)
DAVID C. LENNHOFF

PROFESSIONAL AFFILIATIONS AND POSITIONS HELD

- The Appraisal Institute
 - Member, Editorial Board, *The Appraisal Journal*, 2002-present.
 - Editor-in-Chief, *The Appraisal Journal*, 2004.
 - Chair, Editorial Board, *The Appraisal Journal*, 2004.
 - Vice Chair, Editorial Board, *The Appraisal Journal*, 2003.
 - President, Washington Metropolitan Area Chapter, 1992.
 - Past-Chief Reviewer, Course 510, "Advanced Income Capitalization."
 - Chief Reviewer, Course 530, "Advanced Sales Comparison and Cost Approaches."
 - Chief Reviewer, Course 800, "Separating Real and Personal Property from Intangible Business Assets."
 - Content Reviewer, *The Dictionary of Real Estate Appraisal*, 4th ed.
 - Content Reviewer, *Hotels and Motels -- Valuations and Market Studies*.
 - Content Reviewer, *Appraising Industrial Properties*, 2005.
 - Technical Consultant and Section Reviewer, *The Appraisal of Real Estate*, 11th ed.
 - Technical Consultant and Section Reviewer, *The Appraisal of Real Estate*, 12th ed.
 - Numerous National Committee Positions; past Chairman of the Curriculum Committee and Educational Programs Committee; past President's Liaison to five education committees.
 - Member, Study Group for Business Enterprise Value, 1997-1998.
 - Member, Task Force on Advanced Education Standards, 1999.
- American Institute of Real Estate Appraisers (merged with SREA in January 1991 to form the Appraisal Institute)
 - President, Washington Metropolitan Area Chapter 1990.
- Society of Real Estate Appraisers (merged with AIREA in January 1991 to form the Appraisal Institute)
 - President, Washington Metropolitan Area Chapter, 1987.
- International Association of Assessing Officers, Associate Member.
- The Counselors of Real Estate, Designated (CRE) Member.
- The Real Estate Counseling Group of America, Inc., Principal Member.
- The Royal Institution of Chartered Surveyors, Fellow.
- The Appraisal Foundation Chair, AQB Exam Development team and subject matter expert, 2006.

HONORARY

- Recipient, 2007 James H. Pritchett Award, by the Appraisal Institute for outstanding contributions to appraisal profession that reflect leadership and integrity, demonstrated by exceptional work in teaching, writing, mentoring, and professional practice in litigation support and eminent domain.
- Recipient, Appraisal Institute 2004 Armstrong/Kahn Award with Richard L. Parli for "A Higher and Better Definition," for "the most significant contribution to real estate valuation literature published in *The Appraisal Journal* in 2004."
- Recipient, International Association of Assessing Officers' 2003 IAAO Donehoo Essay Award with Heather Reichardt for "Hotel Asset Allocation: Separating the Tangible Personalty," for "best article on Assessment, Property Tax Administration, or Policy."
- Recipient, 2002 Martin S. Katz Memorial Award, American Property Tax Counsel.
- Recipient, 2002 National Appraisal Institute President's Award.
- Recipient, 2000 Third Annual National Service Award, Washington, D.C. Chapter of the Appraisal Institute.
- Recipient, 1997 William N. Kinnard, Jr., Ph.D. Award, Presented by the Appraisal Institute for Contributions to Appraisal Education.
- Selected Member of Young Advisory Council, Society of Real Estate Appraisers, 1984-1985.
- Recipient, 1987 Distinguished Service Award, Washington Metropolitan Area Chapter No. 29, Society of Real Estate Appraisers.
- Lambda Alpha International, Honorary Society to Advance Land Economics.

CURRICULUM VITAE (continued)

DAVID C. LENNHOFF

PUBLISHED ARTICLES

- Appraisal Journal, Winter 2007, "Nine Big Ideas: Appraisal Journal Articles that Influenced a Generation."
- Hotel Resource, September 2007, "Loading the Cap Rate for Hotel Tax Appeals: Useful Tool or Dangerous Weapon?"
- Hospitality Trends, May 2007, "The Price You Paid for Your Hotel Isn't Market Value."
- Valuation Insights & Perspectives, Third Quarter 2006, Vol. 9, Number 3, "The Green Grass is Longing for Your Cherishing: Appraisal Institute Teaches in China," with Dan Swango, PhD.
- Right of Way, November/December, 2004, "A Higher and Better Definition," with Richard L. Parli, MAI.
- Probate & Property, September/October 2004, "Intangibles Are the Real Thing."
- Appraisal Journal, Winter 2004, "A Higher and Better Definition," with Richard L. Parli, MAI.
- Assessment Journal, Winter 2003, "Hotel Asset Allocation: Separating the Tangible Personalty," with Heather J. Reichardt.
- Appraisal Journal, April 2002, Book Review of *Stephen Rolac on Place and Property Strategy*.
- Appraisal Journal, January 2002, "Allocation of Business Assets Into Tangible and Intangible Components: A New Lexicon," with Marvin Wolverton, James D. Vernor and Richard Marchitelli.
- Appraisal Journal, July 2001, "Business Enterprise Value: Introduction."
- Valuation Insights & Perspectives, Second Quarter 2001, Vol. 6, Number 2, "Teaching in Korea: Great Demands Reap Great Rewards," with Gary P. Taylor and Lee H. Waronker.
- Paper presented to Institute on Professionals in Taxation at Annual Property Tax Symposium, San Antonio, Texas, September 19, 2005, "Thorough HABU Analysis: Valuation Is Worthless Without It."
- Paper presented to International Association of Assessing Officers at the 23rd Annual Legal Seminar, San Antonio, Texas, December 5, 2002, "Business Enterprise/Intangibles – New Terminology From The Appraisal Institute."
- Paper presented to Institute for Professionals in Taxation at 25th Annual Conference Proceedings, Nashville, Tennessee, June 26, 2001, "Business Enterprise/Intangibles – Will There Ever be an Answer?"
- Paper presented to the Institute for Professionals in Taxation at the 26th Annual Conference Proceedings, Boca Raton, Florida, June 25, 2002, "Separating Hotel Real and Personal Property from Intangible Business Assets: Tracking the Evolution."
- Appraisal Journal, April 2001, "Global Warming: Emerging International Valuation and Consulting Opportunities Mandate Agreement."
- Appraisal Journal, October 2000, Book Review of *The Handbook of Advanced Business Valuation*.
- Appraisal Journal, January 2000, "Valuation of Continuing Care Retirement Communities: Worth Another Look," with Peter Wolman.
- Appraisal Journal, October 1999, "Business Enterprise Value Debate: Still a Long Way to Reconciliation."
- Appraisal Journal, October 1997, "Fee Simple? Hardly."
- Appraisal Journal, October 1996, Book Review of *Completing the 4-Page and 8-Page Apartment Appraisal Forms*.
- Appraisal Journal, July 1995, "Highest and Best User," with William Elgie, SRA.
- Washington Area Realtor, September 1989, "A Realty Fact of Life."
- Appraisal Journal, July 1988, "Underwriting Guidelines for Appraisers," with Marvin L. Horsley, RM.
- Appraisal Journal, October 1986, "A Review of the Property and Appraisal Analysis Sections of the New Fannie Mae Underwriting Guidelines."
- Appraisal Journal, April 1986, "Defining the Problem."
- Appraisal Journal, April 1985, "Consistency—The Key to Credibility."
- Appraisal Journal, July 1984, "Why All the Ruckus Over R-41b?"
- Appraisal Journal, July 1982, "Condominium/PUD Budget Analysis Using the FHLMC/FNMA Appraisal Form."

CURRICULUM VITAE (continued)
DAVID C. LENNHOF

PUBLISHED BOOKS

- The Appraisal Institute, *A Business Enterprise Value Anthology* (Chicago: Appraisal Institute, 2001).

EDUCATION

- University of Kentucky, Lexington; B.A., English Literature, 1969.
- Appraisal Foundation
 - o "2007 AQB USPAP Instructor Re-Certification Course."
 - o "2004 AQB USPAP Instructor Re-Certification Course."
 - o "Concepts and Principles of the Uniform Standards of Professional Appraisal Practice. An Instructor's Application," 2002.
 - o "2003 USPAP Update for Instructors and Regulators."
 - o "2002 USPAP Update for Instructors and Regulators."
 - o "2001 USPAP Update for Instructors and Regulators."
 - o "1999 USPAP Review and Instructor Training Session."
- Appraisal Institute - Appraisal-related courses and seminars attended and completed and/or taught:
 - o "Rates & Ratios: Making Sense of GIM, OARS, & DCFs," 2003-2005 (taught).
 - o "Business Practices and Ethics," 2003, 2005 (taught).
 - o "Separating Real and Personal Property from Intangible Business Assets," 2001-2004 (taught).
 - o "Uniform Appraisal Standards for Federal Land Acquisitions: Practical Applications for Fee Appraisers," 2002, 2007 (taught).
 - o "The Appraiser as an Expert Witness: Preparation and Testimony," 1998 (taught).
 - o "Residential Sales Comparison," 1997 (audit and taught); 1999 (taught).
 - o "Residential Income Capitalization," 1996 (audit); 1997 (taught).
 - o "Residential Cost Approach," 1996 (audit).
 - o "Fair Lending and the Appraiser," 1995.
 - o "Standards of Professional Practice," 1991; 1996-2007 (taught).
 - o "Highest & Best Use and Market Analysis," 1993 (audit); 1996-1997, 1999-2001, 2003-2005 (taught).
 - o "Basic Income Capitalization," 1996-1998, 2003, 2006, 2007 (taught).
 - o "Advanced Income Capitalization," 1996-2007 (taught).
 - o "Advanced Sales Comparison and Cost Approaches," 1993, 1998, 2001-2005 (taught).
 - o "Small Hotel/Motel Valuation," 1997-1998 (taught).
 - o "Small Hotel/Motel Valuation: Appraising the Limited Service Lodging Facility," 2001-2007 (taught).
 - o "Apartment Appraisal: Concepts and Applications," 1998-2002, 2004 (taught).
- American Institute of Real Estate Appraisers - Appraisal-related courses and seminars attended and completed:
 - o Course I-A, "Basic Appraisal Principles, Methods and Techniques," 1974.
 - o Course I-B, "Capitalization, Theory and Techniques," 1976.
 - o Course II, "Urban Properties," 1977.
 - o Course IV, "Litigation Valuation," 1980.
 - o Course VI, "Investment Analysis," 1979.
 - o Course VII, "Industrial Valuation," 1981.
 - o Course VIII, "Single Family Residential Appraisal," 1974.
 - o Course 8-3, "Standards of Professional Practice," 1986-1987, 1991.
 - o "Residential Appraisal"; seminar, 1974.
 - o "HP Financial Calculator"; seminar, October 1982.
 - o "Evaluating Commercial Construction"; seminar, January 1985.
 - o "Computer Applications for Appraisers"; seminar, June 1985.
 - o "Subdivision Analysis"; seminar, September 1988.
- Society of Real Estate Appraisers - Appraisal-related courses and seminars attended and completed:
 - o Course 102, "Applied Residential Property Valuation," 1983.

CURRICULUM VITAE (continued)
DAVID C. LENNHOF

EDUCATION (Continued)

- o Course 202, "Applied Income Property Valuation," 1982.
- o "Investment Feasibility Analysis"; short course, 1985.
- o "Real Estate Investments: An Introduction to Cash-Flow and Risk Analysis"; short course, 1985.
- o "Market and Marketability Analysis"; short course, 1985.
- o "Introduction to Investment Analysis"; seminar, 1975.
- o "Influence of the Money Market on Real Estate Values"; seminar, 1980.
- o "Narrative Report Writing"; seminar, 1980.
- o "Cash Equivalency"; seminar, 1981.
- o "Creative Financing"; seminar, 1981.
- o "Subdivision Analysis"; seminar, 1981.
- o "Adjusting for Financing Differences in Residential Properties"; seminar, 1982.
- o "Regulation #R 41b of the Federal Home Loan Bank Board"; seminar, 1985.
- o "Using the New Uniform Appraisal Form"; seminar, 1986.
- o "Professional Practice and the Society of Real Estate Appraisers"; seminar, 1987.
- o "Valuation and Evaluation of Proposed Projects"; seminar, 1989.
- o "Condemnation: Legal Rules & Appraisal Practice"; seminar, 1990.
- Miscellaneous - Appraisal-related courses and seminars attended and completed:
 - o "Building Trades Blueprint Reading," University of Virginia, 1973.
 - o "Home Construction I-II, Institute of Financial Education," 1974-1975.
 - o "Evaluating the Structural and Mechanical Condition of Houses," 1976.
 - o "Computer-Aided Analysis of Complex Investment Properties"; seminar, 1983.
 - o "A Guide to Federal Home Loan Bank Board Memorandum #R41c"; seminar, 1987.

PERMANENT STATE CERTIFICATIONS (Temporary Certifications not listed)

- Commonwealth of Virginia; Certified General Real Estate Appraiser, No. 4001-000225, expires 10/31/2009
- State of Maryland; Certified General Real Estate Appraiser, No. 04-1076, expires 12/31/2009.
- District of Columbia; Certified General Real Property Appraiser, No. 10063, expires 02/28/2008.
- State of Michigan; Certified General Real Estate Appraiser, No. 1201069054, expires 07/31/2009.
- State of West Virginia; Certified General Real Estate Appraiser, No. 309, expires 09/30/2008.
- Commonwealth of Pennsylvania; Certified General Real Estate Appraiser, No. GA003332, expires 06/30/2009.
- State of Ohio; Certified General Real Estate Appraiser, No. 2002022849, expires 01/02/2008.
- State of Arizona; Certified General Real Estate Appraiser, No. 31174, expires 09/30/2009.
- State of Indiana; Certified General Real Estate Appraiser, No. CG40400221, expires 06/30/2008.
- State of New Jersey; Certified General Real Estate Appraiser, No. 42RG00199700, expires 12/31/2009.
- State of Florida; Certified General Real Estate Appraiser, No. RZ2837, expires 11/30/08.
- State of Georgia; Certified General Real Property Appraiser, No. 299175, expires 11/30/08.

CURRICULUM VITAE (continued)
DAVID C. LENNHOF

TEACHING

- AQB Certified USPAP Instructor.
- Approved Instructor, Appraisal Institute: Have taught at International (Beijing, China; Seoul, South Korea; and Mexico City, Mexico), National (30 States, District of Columbia and Puerto Rico), and Chapter levels. Regularly teach their advanced curriculum and USPAP courses.
- Past Faculty Fellow, *Mortgage Bankers Association of America*.
- Associate Professorial Lecturer in Finance, The George Washington University, 2005-2006.
- Past Faculty Member, Washington, D.C. Association of Realtors, Inc., Realtor Institute.
- Past Faculty Member, Virginia Association of Realtors, Realtor Institute.
- Commonwealth of Virginia, Instructor Certification 4002000006.
- State of New York, Instructor Certification for Certified General Appraiser Classification.
- Past Faculty Associate, Johns Hopkins University, School of Professional Studies in Business and Education.
- Faculty Member, Greater Capital Area Association of Realtors.

QUALIFIED AS EXPERT WITNESS IN THE FOLLOWING JURISDICTIONS

- Arizona Tax Court
- Clark County Board of Equalization, Nevada
- Polk County, Iowa
- Cleveland, Ohio
- Shelby County, Tennessee
- San Luis Obispo County, California
- Los Angeles County, California
- District of Columbia
- Maryland Tax Court
- United States Bankruptcy Court for the District of Maryland
- United States Bankruptcy Court for the District of Virginia
- Montgomery County Board of Appeals, Maryland
- City of Baltimore, Maryland
- Frederick County, Maryland
- Prince George's County, Maryland
- Bergen County, New Jersey
- Harrisburg, Pennsylvania
- Arlington County, Virginia
- Fairfax County, Virginia
- Loudoun County, Virginia
- City of Alexandria, Virginia
- Topeka, Kansas
- Also testified before U.S. House of Representatives Subcommittee on Public Buildings and Grounds.
- Also testified before U.S. House of Representatives Committee on Ways and Means, Subcommittee on Oversight, 2005.

CURRICULUM VITAE (continued)
DAVID C. LENNHOF

REPRESENTATIVE SAMPLING OF CLIENTS FOR WHOM APPRAISALS HAVE BEEN COMPLETED

- Attorneys
- Developers
- Property owners
- National corporations
- Relocation organizations
- Commercial banks
- Mortgage bankers
- Savings and loan associations and savings banks
- The Federal National Mortgage Association
- Montgomery County, MD Register of Wills
- Housing Opportunities Commission of Montgomery County
- Federal Home Loan Bank Board
- Internal Revenue Service (IRS)
- U.S. General Services Administration (GSA)
- Fairfax County, Arlington County, Loudoun County, Fairfax City, City of Falls Church, City of Alexandria, Virginia
- U.S. Department of Justice (DOJ)
- WMATA
- U.S. Army Corps of Engineers
- Resolution Trust Corporation (RTC)
- Federal Deposit Insurance Corporation (FDIC)
- Office of Inspector General (Federal Reserve System)
- National Park Service

REPRESENTATIVE SAMPLING OF TYPES OF PROPERTY

- Single family residences
- Individual condominium and PUD units
- 2-4 family units
- Residential subdivisions
- Apartment projects
- Condominium projects
- Farmland
- Vacant land
- Automobile dealerships
- Small retail facilities
- Office buildings
- Motels
- Hotels
- Truck manufacturing plant
- Integrated steel mill
- Warehouses
- Nightclubs
- Savings and loan branches
- Continuing care retirement communities (CCRC)
- Shopping centers
- Regional malls
- Anchor department stores
- Hospitals
- Web-hosting facilities
- Corporate headquarters
- A private toll road
- An observation tower
- Newspaper printing plants
- Chemical manufacturing plant

OTHER AREAS OF EXPERTISE

- Appraisal review, to include both single family form reports and nonresidential narratives.
- Review appraisal assignments have included arbitration of appraisal disputes for attorneys, consultation and review for real estate assessment departments, and appraisal reviews for HUD 223(f) coinsurance program lenders.
- Partial interest valuations, Uniform Standards of Professional Appraisal Practice (USPAP), allocating tangible and intangible assets and appraisal methodology.

Power Lines and Property Values Revisited

by Jennifer M. Pitts and Thomas O. Jackson, PhD, MAI

This edition of "Environment and the Appraiser" revisits an issue that has been extensively studied but has recently received little attention. While issues concerning the health effects of electromagnetic fields are beyond the scope of this column, the effects of power lines and perceptions of health risks that can influence residential property values in some situations are summarized here.

There are a number of intervening factors that make generalizations about such influences difficult. Below is a summary of research findings from past studies as well as some recent research, consisting of market interviews focused on residential developments in the central California area. As will be discussed, impacts are varied as are market perceptions. The referenced literature is available from the Appraisal Institute's Y. T. and Louise Lee Lum Library.

Research

Over the years, the impact of high-voltage transmission lines (HVTL) on the value of residential property has been studied extensively. These impacts are not easily measurable. Research shows that the effects of HVTL on residential properties are varied and are determined by five interplaying factors: proximity to towers and lines; the view of towers and lines; the

type and size of HVTL structures; the appearance of easement landscaping; and surrounding topography. Many studies indicate that the HVTL have no significant effect on residential property values.¹ More recently, however, an increasing number of studies do show a small diminution in value attributable to the close proximity of these lines.

When negative impacts are evident, studies report an average discount of between 1% and 10% of property value.² This diminution in value is attributable to the visual unattractiveness of the lines, potential health hazards, disturbing sounds, and safety concerns.³ These impacts diminish as distance from the line increases and disappear at a distance of 200 feet from the lines. Where views of the lines and towers are completely unobstructed, negative impacts can extend up to a quarter of a mile. If the HVTL structures are at least partially screened from view by trees, landscaping, or topography, any negative effects are reduced considerably. Value diminution attributable to tower line proximity is temporary and usually decreases over time, disappearing entirely in 4 to 10 years.⁴

Research also has found that the negative impacts on lots adjacent to or with a direct view of a tower or pylon may be slightly greater than impacts on lots further from the tower. This is most likely

1. J. R. Cowger, Steven C. Bottemiller, and James M. Cahill, "Transmission Line Impact on Residential Property Values, A Study of Three Pacific Northwest Metropolitan Areas," *Right of Way* (Sept/Oct 1996): 13-17; William N. Kinnard, "Tower Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 269-284; Hsiang-te Kung and Charles F. Seagle, "Impact of Power Transmission Lines on Property Values: A Case Study," *The Appraisal Journal* (July 1992): 413-418; and Marvin L. Wolverson and Steven C. Bottemiller, "Further Analysis of Transmission Line Impact on Residential Property Values," *The Appraisal Journal* (July 2003): 244-252.
2. Peter F. Colwell and Kenneth W. Foley, "Electric Transmission Lines and the Selling Price of Residential Property," *The Appraisal Journal* (October 1979): 490-499; Charles J. Delaney and Douglas Timmons, "High Voltage Power Lines: Do They Affect Residential Property Value?" *Journal of Real Estate Research* 7, no. 3 (1992): 315-329; William N. Kinnard and Sue Ann Dickey, "A Primer on Proximity Impact Research: Residential Property Values Near High-Voltage Transmission Lines," *Real Estate Issues* (April 1995): 23-29; and William N. Kinnard and Sue Ann Dickey, *High Voltage Transmission Lines and Residential Property Values: New Findings About Unobstructed Views and Tower Construction* (Real Estate Counseling Group of Connecticut, Inc., 2000).
3. Delaney and Timmons.
4. Kinnard and Dickey, "A Primer on Proximity Impact Research."

because the visual obstruction from a tower is more substantial than that from the lines themselves. The value diminution on lots adjacent to or with direct views on a tower may not decrease with time.⁵

A slower absorption rate and extended marketing period for residential properties adjacent to a tower line right-of-way are observed in some studies. However, when the nearby lots are attractively developed, the lots abutting a right-of-way will sell more quickly.⁶ It has also been found that higher-end custom homes are generally more sensitive to the negative impacts of HVTL than lower-end homes.⁷

While most research indicates that HVTL have no significant impact or a slight negative impact on residential properties, some studies have shown that lots adjacent to or with views of an HVTL right-of-way actually sell for a premium over more distant lots. This premium is most likely due to improved visual clearance, increased privacy, and larger lot sizes.⁸

Recent Market Interviews

While academic and professional literature provide a broad background of findings on the price effects of HVTL, brokers and appraisers can provide additional perspective into current market conditions. In early 2007, interviews were conducted of local realtors and appraisers in several central California communities: Discovery Bay near Brentwood, Summer Lake near Oakley, and Sierra View in Roseville. HVTL right-of-ways run through or near these residential developments. Each realtor or appraiser was asked a series of questions about their background, market knowledge, and opinions on the effects of these high-voltage power lines.⁹

Approximately half of the realtors and appraisers interviewed said they had not observed negative impacts on either residential sale prices or days on market due to the presence of the power lines. According to these realtors and appraisers, major factors affecting sale price and marketability of residential properties include: location, the general economy, interest rates, inventory, and neighbor-

hood amenities. A local appraiser in Discovery Bay commented that the presence of power lines "has not deterred residential development in Discovery Bay and surrounding areas." A realtor in Oakley agreed, stating that "buyers are building and selling homes near power lines in many areas of California, and the power lines don't seem to deter buyers."

The remaining realtors and appraisers interviewed had observed negative impacts on homes directly adjacent to a power line right-of-way. They said that on average, the indicated price discounts ranged between 2% and 7% for adjacent homes. For homes not directly adjacent but with a view of the power lines, average price impacts were estimated between 0% and 5%, depending on the view and proximity to the lines. On average, homes adjacent to or with a view of the lines could anticipate an increase of 0 to 60 days on the market. None of the realtors or appraisers interviewed had observed any negative impacts on residential properties in close proximity to the lines, but without a direct view.

Many realtors and appraisers indicated that price and marketability effects of HVTL depend on the market conditions at the time of sale. The presence of power lines can be viewed as a negative externality. *Externalities*, as defined in the Appraisal Institute's *The Appraisal of Real Estate*, 12th edition, are "the use or physical attributes of properties located near the subject property, or the economic conditions that affect the market in which the subject property competes."¹⁰

According to a broker active in Discovery Bay, "the negative effects from the power line (and from other negative externalities) are evident in a slow market. When demand is strong, these effects diminish. The price effects depend on property characteristics and market conditions." Another realtor in Roseville agreed, stating, "In a slow market, homes adjacent to a power line are harder to sell. These homes are great investment opportunities in a slow market, because any price effects diminish and may disappear when the market picks up."

5. Peter F. Colwell, "Power Lines and Land Value," *Journal of Real Estate Research* 5, no. 1 (1990): 117-127.

6. Louie Reese, "The Puzzle of the Power Line," *The Appraisal Journal* (October 1967): 555-560.

7. Francois Des Rosiers, "Power Lines, Visual Encumbrance and Home Values: A Microspatial Approach to Impact Measurement," *Journal of Real Estate Research* vol. 23, no. 3 (2002).

8. Delaney and Timmons; and Des Rosiers.

9. Interviews conducted by Real Property Analytics, Inc., January 2007. For methodology, see Thomas O. Jackson, "Surveys, Market Interviews, and Environmental Stigma," *The Appraisal Journal* (Fall 2004): 300-310.

10. Appraisal Institute, *The Appraisal of Real Estate*, 12th ed. (Chicago: Appraisal Institute, 2001), 42.

The impact of the power lines on residential property values may also be influenced by a buyer's personal preference. Several realtors and appraisers indicated that there might not be a market consensus on the impacts of power lines because some buyers may consider these power lines a nuisance and an eyesore, while other buyers do not. A broker in Discovery Bay stated, "personal preference may cause some buyers to locate further from the power lines, but the lines have caused no observable negative impacts for the market in general." Another Discovery Bay realtor stated, "external factors such as power lines have less of an effect on lower-end homes than on luxury properties."

Conclusion

Both the market interviews and academic literature show that the impacts of power lines on residential properties are varied and difficult to measure. The impacts from the power lines, as well as other negative externalities, depend on many factors, including market condition, location, and personal preference.

Jennifer M. Pitts researches environmental issues and their effects on real estate markets for Real Property Analytics, Inc. She received her master's degree in land economics and real estate from Texas A&M University. Pitts also has a bachelor's degree, *summa cum laude*, in finance from the Mays Business School at Texas A&M. **Contact: T 254-760-0847; E-mail: jennifer@real-analytics.com**

Thomas O. Jackson, PhD, MAI, CRE, is a clinical associate professor in the Department of Finance of the Mays Business School at Texas A&M University, where he teaches real property valuation in the Land Economics and Real Estate Program. In addition, he is the president of Real Property Analytics, Inc., based in College Station, Texas, where he specializes in analyzing the effects of environmental contamination on real property. **Contact: T 979-690-1755; E-mail: tomjackson@real-analytics.com; Web site: www.real-analytics.com**

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #1

ELEMENT	SALE 1		SALE 2	
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Address	14824 Shelter Ln. Haymarket, VA		16845 Thunder Road Haymarket, VA	
Tax Map I.D.	GPIN 211571		GPIN 158415	
MRIS No.	PW5515024		PW6174492	
Sale Price	\$965,000	\$1,200,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	05-May-06	02-Feb-07	Similar	0%
Location	Haymarket	Haymarket	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos. Bldg. Imps.	Pos.Bldg. Imps	Similar	-16%
Size (Acres)	12.70	10.00	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	A-1	A-1	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$965,000	\$1,200,000		
Net Adjustment	---	-16%		
Adj. Sale Price	\$965,000	\$1,008,000		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-4%	(\$43,000)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #2

ELEMENT	SALE 1	SALE 2		
Address	4402 Sanders Lane Catharpin, VA	4522 Logmill Road Gainesville, VA		
Tax Map I.D.	Tax ID: 13267	Tax ID: 14856		
MRIS No.	PW4944972	PW5089438		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$425,000	\$439,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	30-Sep-04	29-Dec-04	Similar	-4%
Location	Catharpin	Gainesville	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos. Bldg. Imps.	Pos. Bldg. Imps	Similar	11%
Size (Acres)	3.83 Acres	2.04 Acres	Similar	5%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	A-1	R-A	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$425,000	\$439,000		
Net Adjustment	-- -- --	12%		
Adj. Sale Price	\$425,000	\$491,680		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-16%	(\$66,680)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #3

ELEMENT	SALE 1	SALE 2		
Address	4383 Richards Fort Lane Jeffersonton, VA	19245 Kings Drive Jeffersonton, VA		
Tax Map I.D.	CU 8H- -1- -4	CU 8A- -1- -12		
MRIS No.	CU6047394	CU6310765		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$295,900	\$287,500	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	19-Mar-07	24-Apr-07	Similar	0%
Location	Jeffersonton	Jeffersonton	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos.Bldg.Imp	Pos.Bldg.Imp.	Similar	5%
Size (Acres)	3.0 Acres	3.0 Acres	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	R-A	R-A	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$295,900	\$287,500		
Net Adjustment	----	5%		
Adj. Sale Price	\$295,900	\$301,875		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-2%	(\$5,975)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #4

ELEMENT	SALE 1	SALE 2		
Address	Briarfield Lane Aldie, VA	24778 James Monroe Highway Aldie, VA		
Tax Map I.D.	LC 101-D-2--1	LC 99----14		
MRIS No.	LC5090146	LC4769985		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$735,000	\$740,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	27-Dec-04	16-Jun-04	Similar	16%
Location	Aldie	Aldie	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Vacant	Vacant	Similar	0%
Size (Acres)	12.05 Acres	13.23 Acres	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	CR1	AR2	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$735,000	\$740,000		
Net Adjustment	-- -- --	16%		
Adj. Sale Price	\$735,000	\$858,400		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-17%	<i>(\$123,400)</i>

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #5

ELEMENT	SALE 1	SALE 2		
Address	18655 Springs Road Jeffersonton, VA	19512 Kings Drive Jeffersonton, VA		
Tax Map I.D.	CU 8C- -1- -3	CU 8A- -1- -21		
MRIS No.	CU3289090	CU3458038		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$163,000	\$199,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	12-Dec-00	29-May-01	Similar	-7%
Location	Jeffersonton	Jeffersonton	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos.Bldg.Imps	Pos.Bldg.Imps	Similar	-5%
Size (Acres)	3.68 Acres	3.0 Acres	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	R1	RA	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$163,000	\$199,000		
Net Adjustment	---	-12%		
Adj. Sale Price	\$163,000	\$175,120		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-7%	(<i>\$12,120</i>)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #6

ELEMENT	SALE 1	SALE 2		
Address	2314 Burlington Drive Amissville, VA	16014 Quail Ridge Drive Amissville, VA		
Tax Map I.D.	CU 7J- -1- -30	CU 6L- -1-1-14		
MRIS No.	CU4889301	CU4856786		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$347,500	\$355,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	22-Jun-04	28-Jun-04	Similar	0%
Location	Amissville	Amissville	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos.Bldg.Imp.	Pos.Bldg.Imp.	Similar	0%
Size (Acres)	2.03 Acres	1.86 Acres	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	R1	A1	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$347,500	\$355,000		
Net Adjustment	---	0%		
Adj. Sale Price	\$347,500	\$355,000		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-2%	<i>(\$7,500)</i>

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #7

ELEMENT	SALE 1	SALE 2		
Address	4404 Sanders Lane Catharpin, VA	4413 Shari Court Catharpin, VA		
Tax Map I.D.	Tax ID: 15896	Tax ID: 15004		
MRIS No.	PW4244020	PW4410048		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$270,000	\$275,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	24-Sep-02	29-Apr-03	Similar	-10%
Location	Catharpin	Cartharpin	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos.Bldg.Imp.	Pos.Bldg.Imp.	Similar	12%
Size (Acres)	0.9 Acre	1.0 Acre	Similar	0%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	A-1	A-1	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$270,000	\$275,000		
Net Adjustment	----	2%		
Adj. Sale Price	\$270,000	\$280,500		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-4%	(\$10,500)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #8

ELEMENT	SALE 1	SALE 2		
Address	Ebenezer Church Road Round Hill, VA	34908 Bloomfield Road Round Hill, VA		
Tax Map I.D.	LC 614276470000	LC618481065000		
MRIS No.	LC 5487816	LC 5117820		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$2,330,000	\$2,750,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	06-Mar-06	26-Mar-05	Similar	11%
Location	Round Hill	Round Hill	Similar	0%
Physical Characteristics:				
Access	Gravel Road	Paved Road	Similar	0%
Condition	Vacant	Vacant	Similar	0%
Size (Acres)	91.12 Acres	95.62	Similar	-3%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	AR2	AR2	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$2,330,000	\$2,750,000		
Net Adjustment	---	8%		
Adj. Sale Price	\$2,330,000	\$2,970,000		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-27%	(\$640,000)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #9

ELEMENT	SALE 1	SALE 2		
Address	5714 Pageland Lane Gainesville, VA	4100 Aldie Road Catharpin, VA		
Tax Map I.D.	Tax ID: 14524	Tax ID: 104058		
MRIS No.	PW5507338	PW5460460		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$449,000	\$675,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	24-Jul-06	27-Feb-06	Similar	-6%
Location	Gainesville	Catharpin	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Vacant	Vacant	Similar	0%
Size (Acres)	13.68 Acres	15.00 Acres	Similar	-5%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	A-1	A-1	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$449,000	\$675,000		
Net Adjustment	---	-11%		
Adj. Sale Price	\$449,000	\$600,750		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-34%	(\$151,750)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS #10

ELEMENT	SALE 1	SALE 2		
Address	3159 Chimney Lake Lane Goldvein, VA	12350 Elk Run Road Midland, VA		
Tax Map I.D.	Tax ID: 7837-02-7605	Tax ID: 7818-62-2856		
MRIS No.	FQ4042836	FQ3538501		
	DESCRIPTION	DESCRIPTION	COMPARISON	ADJUSTMENT
Sale Price	\$325,000	\$350,000	---	---
Property Rights	Fee Simple	Fee Simple	Similar	0%
Financing	All Cash to Seller	All Cash to Seller	Similar	0%
Conditions of Sale	Arm's-Length & Normal Motivation	Arm's-Length & Normal Motivation	Similar	0%
Sale Date	04-Feb-02	07-Dec-01	Similar	0%
Location	Goldvein	Midland	Similar	0%
Physical Characteristics:				
Access	Paved Road	Paved Road	Similar	0%
Condition	Pos.Bldg.Imp	Pos.Bldg.Imp	Similar	27%
Size (Acres)	28.2 Acres	21.5 Acres	Similar	2%
Topography	Rolling	Rolling	Similar	0%
Utilities	Well & Septic	Well & Septic	Similar	0%
View	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	<i>Inferior</i>	<i>See Below</i>
Zoning	RA	RA	Similar	0%
Other ()			Similar	0%
Unadj. Sale Price	\$325,000	\$350,000		
Net Adjustment	-- -- --	29%		
Adj. Sale Price	\$325,000	\$451,500		
VALUE DIFFERENCE	<i>HVTL (<1,000 Ln. Ft.)</i>	<i>Woods</i>	-39%	(\$126,500)

DVP 500 KV TRANSMISSION LINE

PAIRED SALE ANALYSIS SUMMARY

No.	Area	Test Property	Control Property	Type	Year	HVTL
1	Pr. Wm. Co.	14824 Shelter Ln. Haymarket, VA	16845 Thunder Rd. Haymarket, VA	SFD	2006	-4%
2	Pr. Wm. Co.	4402 Sanders Ln. Catharpin, VA	4522 Logmill Rd. Gainesville, VA	SFD	2004	-16%
3	Culpepper Co.	4383 Richards Ft. Ln. Jeffersonton, VA	19245 Kings Dr. Jeffersonton, VA	SFD	2007	-2%
4	Loudoun Co.	Briarfield Ln. Aldie, VA	24778 James Monroe Aldie, VA	Land	2004	-17%
5	Culpepper Co.	18655 Springs Rd. Jeffersonton, VA	19512 Kings Dr. Jeffersonton, VA	SFD	2000	-7%
6	Culpepper Co.	2314 Burlington Dr. Amissville, VA	16014 Quail Ridge Dr. Amissville, VA	SFD	2004	-2%
7	Pr. Wm. Co.	4404 Sanders Ln. Catharpin, VA	4413 Shari Ct. Catharpin, VA	SFD	2002	-4%
8	Loudoun Co.	Ebenezer Church Rd. Round Hill, VA	34908 Bloomfield Rd. Round Hill, VA	Land	2006	-27%
9	Pr. Wm. Co.	5714 Pageland Ln. Gainesville, VA	4100 Aldie Rd. Catharpin, VA	Land	2006	-34%
10	Fauquier Co.	3159 Chimney Lk. Ln Goldvein, VA	12350 Elk Run Rd. Midland, VA	SFD	2002	-39%
Avg.						-15%