

STATE OF NEW HAMPSHIRE SITE EVALUATION COMMITTEE

SEC DOCKET NO. 2015-06

JOINT APPLICATION OF NORTHERN PASS TRANSMISSION LLC & PUBLIC SERVICE
COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE ENERGY FOR A CERTIFICATE
OF SITE AND FACILITY

The purpose of my testimony, on behalf of Peter Menard and Anne Burnett and their property at 65 Nottingham Road, Deerfield is as follows:

1. Due to my first hand real estate knowledge, I will be attesting to the negative impacts of Northern Pass Transmission proposed project (NPT) on the property value of 65 Nottingham Road, Deerfield, NH.
2. To refute the methodology and conclusions drawn from the Deerfield Haynes Road Subdivision Study and the Deerfield Case Study #50, 39 Haynes Road, which are located in the Applicants Appendix 46, known as High Voltage Transmission Lines and Real Estate Markets in New Hampshire: A Research Report by Chalmers and Associates, LLC (Chalmers Report).
3. To attest to the fact that the Applicant has failed to answer a key question before the Site Evaluation Committee as sited in Section 301.09 Effects on Orderly Development of Region, (b) economy of the region, section (4). That question is: "What is the effect of the proposed facility on real estate values in the affected communities?"
4. To testify that the size of this proposed project is so massive in comparison to the existing ROW structures and that NPT as proposed will be so ugly that the negative visual impact to my family's property can never be mitigated in our lifetime.
5. To attest that the value of 65 Nottingham Road, Deerfield NH, is not solely defined in terms of market value and because of NPT, will sustain losses in addition to market value losses.
6. To plead that the historic rural district of Deerfield Parade, in the spirit of our ancestors of 250 years ago, and with gratitude to those who have toiled to maintain such rural character for the benefit of all, be forever preserved without threat from overhead utility projects.

What qualifications do you have to render expert testimony regarding property values?

- NH licensed Realtor (# 42411) since 1992
- Broker/Owner of Parade Properties, since 1998, which is a real estate company located at 45 North Road, Deerfield, a company in good standing with the Dept. of State.
- Listing and selling sales experience of single family residential, land, waterfront properties, and condominiums, and limited commercial, in several NH communities. See recent Parade Properties advertisement (Exhibit #1)
- Demonstrated competence in preparing market analysis by qualifying to participate in the selection process for NH DOT to market surplus land parcels for the State of NH.

1. What is unique about 65 Nottingham Road, Deerfield?

This property is a 3rd generation antique home, purchase by my grandparents in 1950. It is situated in a rural historic district, was identified in the Section 106 process and is noteworthy given its setting on Deerfield Parade. This house is situated on 33 acres, 11 acres hay field, remaining managed woodland. From the home there is a commanding view of North Mountain of Pawtuckaway State Park. An 1800ft. private driveway leads from the house, down a hill and under the ROW to a log cabin built by local craftsmen in the '50s that overlooks a small pond. (tax map, exhibit 2)

2. Why did your grandparents buy this property?

My grandparents purchased this specific site because they loved the view of the mountain and diversity of the land, namely fields, forests, and wetlands. When they granted a 100 ft. easement to PSNH on March 17, 1954, they did so knowing they could shield the ROW with a tree buffer. They purchased trees immediately to plant at the base of the hill and let native vegetation grow to completely hide the wooden poles and wires from site. They went to great expense for underground utilities to the cabin because they did not want the new power line to disrupt this view.

3. Can you put a price tag on a view?

One can look at land sales data to determine what a typical buyer might pay for a residential building lot compared with a similar lot with a view. Given Deerfield's topography, it is difficult in finding a "similar" lot. Lot sales in Deerfield for 2010 were limited due to a down real estate market; from Multiple Listing Service there is a list of 3 sales available for comparison of price, list and sold date, acreage, and DOM. (Exhibit #3a) A casual review will reveal a premium was paid for a view on a 5 acre lot, Meetinghouse Hill Road. (Parade Properties listing sheet, Exhibit #3b) Full listing sheets of all properties on this list available upon request.

As you can see from the chart:

- The median lot price in Deerfield in 2010 was \$80,000.
- The lot with the outstanding view sold for \$130,000 on 4/12/10 with no HVTL influence and sold pre public announcement of Northern Pass.

A market snapshot was also taken from residential lot sales from a 12 month marketing period 11/9/15- 11/9/16 in Hooksett, NH which reveals an average lot sold price of \$91,250. The lot with a stellar view sold on 10/28/2016 for \$195,000.(Exhibit #4) There is no HVTL influence on this lot.

Typically, a more complete market analysis would consider other variables beside the view that might impact lot value: location advantages, lot size, buildable acreage, market adjustments due to the struggling economy, to name a few.

The intended purpose of these two land charts is to evidence that a desirable view is a major contributor to market value. These two examples are not enough sales data to be statistically significant, however they do support what most people would perceive to be true, buyers are willing to pay a premium for a view.

4. How can you determine market value losses to a property with a view that would be ruined by an industrial HVTL project like NPT?

The Chalmers report does not attempt to answer this question but chose instead to research the effects of the existing HVTL on property value on single family residences. My family is not concerned about the existing HVTL effect on property value. The applicant did not offer any NH based evidence that is even remotely applicable to the impacts of the proposed NPT on property values.

I would testify that stigmatizing properties with a HVTL, well above tree tops, would completely destroy the view and leave a permanent scar on the landscape thereby eliminating any value of the view the property owner once enjoyed. 65 Nottingham Rd. would stand to suffer losses far greater than represented in the Chalmers report.

Mr. Chalmers states (pg. 3, 1.3) "it must also be noted that the existence of market value effects does not imply economic damages to the property owner. The owner at the time of easement purchase would have been compensated for market value effects. Further, if there were market value effects, subsequent owners would have purchased the property at a discount, so they would have suffered no economic damage." My grandparents granted the easement for \$1.00 as did many others.

The benefits of electricity in their home and business are clearly obvious. The 1952 Sears and

Roebuck wiring book provides a reminder of what the 1954 easement granting had in store for the PSNH customers of that era. A switch! Electric servants! (Exhibit #5). What is different two generations later is that my grandparents, when granting the ROW easement, were not asked to suffer any losses or sacrifice the view on their property as we are today.

5. How does Anne Burnett and your family describe the impact of the NPT project on your family's cabin setting?

"The visual and audible discord between the immense towers and wires and the intended respite of the modest cabin, tranquil pond and surrounding forest could not be more stark. The deeded 'vegetative buffer' that used to block the original power line has been destroyed by recent poor ROW management practices. What once was thriving wild blueberry habitat, from which we filled our freezer, bears little resemblance today. Towers (upwards of 140 ft.) could never be blocked from view and upon approach, will have a disturbing visible presence from all points around the pond and cabin. NPT will spoil the quiet enjoyment of our property and ruin the intrinsic value of our family's treasure. Not all property value losses can be measured in \$'s."

There is a survey studies which identifies noise as a reason for decline in property value and there is evidence that show that HVTL generate noise, however there is no research available that correlate property value loss specific to the effects of increased noise of a HVTL line. It would be reasonable to assume, as my family does above, that the noise of these lines will contribute to the overall diminishment of value, even though we cannot quantify it in \$'s.

6. How can you claim that NPT will have negative market effects on property values?

Parade Properties listed a residential lot on Mt. Delight Road, Deerfield that has 527 ft. along the center line of the proposed NPT route. A sluggish economy still had a solid hold on the market in 2010 and the announcement of NPT was an additional blow. It had 6.49 acres and 1,280 ft. subdividable road frontage, enough for 2 lots. This parcel sold for \$59,000 on 5/30/2014. As you can see in (exhibit #6) the median value of single building lots sold in Deerfield in 2014 was \$59,450. In this case, no value of the potential additional lot was realized by the seller in the sales price, whereas the severely reduced price benefitted the buyer. The buyer subdivided the property subsequent to the purchase.

While marketing this property, Parade Properties witnessed the phenomenon of Prudent Avoidance, which is exhibited if a buyer perceives that there is a market influence that may pose a health, safety, or economic risk, they will avoid making that purchase. Some buyers responded negatively to the project overall and rejected Deerfield. Fear of NPT impact on a particular property and not having all the answers about the project has negatively reflected in the Deerfield real estate market and is still evident in my business today. 41 Haynes Road, Deerfield is a case of homeowner's nightmare due to NPT. In this situation, a young family unsuccessfully tries to sell their home in 2011 due to severe impact of the NPT. The house is now vacant, new owner

unknown. Reiterating a statement above, not all losses can be measured in \$'s. Deerfield lost a wonderful family who no longer live in our town and moved because of NPT effect on their property value and quality of life.

Michael Rikon, a consultant to the New York State Commission on eminent domain procedure law, in an article Electromagnetic Radiation Field Property Devaluation evaluates the Criscuola V. Power Authority of the State of New York decision (Exhibit 7) which relates to the diminution of property values as a result of proximity to an electromagnetic radiation field (EMF), states that

“In an inverse condemnation (i.e., an EMF property devaluation claim), the damage calculation should be the same as if the property were condemned because the public perceives that there is a health risk when one lives in close proximity to a high voltage when one lives in close proximity to a high voltage power transmission line. This perception among the prospective purchasers of the property results in a substantial loss of value.”

Cancerphobia affects the minds of any prospective purchaser causing a loss of demand, a loss of market value, and therefore limit resale potential.

7. Have you read Appendix 46 of the Application, the Chalmers Report?

Yes, I have. I am the listing broker for the residential Case Study #50; 39 Haynes Road, Deerfield. I am very familiar with Deerfield Subdivision study parcels as described in the report in section 5.2.10. (see tax map Exhibit 8)

8. What criticisms do have of the Chalmers Report?

Mr. Chalmers has stated generalizations made from his work are not intended to be applied to specific properties. 65 Nottingham Road is a unique NH property. If you review the property tax cards provided by the applicant you will find that the majority of properties abutting and adjacent to the ROW are also unique. Chalmers offers an explanation of the general absence of market value effects on page 94, section 7.5.2 and states:

“HVTL effects are most likely in the situation where there are similar properties except for the HVTL. This condition seldom holds in New Hampshire due to variability of terrain and the generally heterogeneous housing stock, i.e. the HVTL are seldom the principal differentiating factor between properties.”

Chalmers’ New Hampshire-Specific Research Initiatives”, which utilized residential sales to measure market value effects of HVTL, is far from adequate to demonstrate market effects of NPT on property values. In case study analysis of individual properties, the potential effects of a buyers response to the HVTL may be offset or mitigated by other factors influencing the pricing

decision and this likely contributes to the lack of findings in Chalmers work. Statistically reliable evidence is needed in order for the Site Evaluation Committee to determine the effect of NPT on market values. The conclusions of his report are generalizations, not specific to any one property, any one community, nor any one region of NH. Site 301.16 directs the committee to consider private property in determining the public interests.

I base this criticism on the fact that HVTL structure heights and styles were not held as a constant in the Chalmers NH case studies from which the study group conclusions and overall generalizations were based. Some case studies have wooden pole configuration while others are steel towers, there are varying heights of structures on varying ROW widths. In study area 3, Chalmers selected a few distribution lines, not what we would perceive as HVTL lines to do his analysis along with varied ROW configurations all within that one study group. Collectively, the only thing the HVTL lines used in the NH Research Specific Report have in common is that they happen to be located in NH.

Mr. Chalmers concludes on page 95; Sect 7.5.4 that “Where there are Market Value Effects, They Decrease Rapidly with Distance”. It provides no consolation that market value effects may decrease with distance because homeowners along the ROW do not have the luxury of moving their property away from the ROW. Case in point: 140 Nottingham Road, home of long time Deerfield residents Joan and Phil Bilodeau, have extreme property value devastation with the siting of the expanded NPT substation in their backyard in addition to unimaginable losses to their way of life that cannot be measured by \$’s.

9. What is the best approach to isolating the effect of NPT on property values in NH?

Francois Des Rosiers, in article titled Power Lines, Visual Encumbrance and House Values: A Microspatial Approach to Impact Measurement, published in the Journal of Real Estate Research, vol. 23 No. 3- 2002 states on page 1 that

“Over the past two decades, environmental issues have drawn greater attention in the economic and real estate literature, particularly with respect to their impact on property prices. Despite its inherent weaknesses, the hedonic approach remains the most reliable tool for measuring environmental negative externalities...” The hedonic pricing model is used to estimate the extent to which each factor, like the presence of a HVTL, affects the price.

A large number of sales is needed to perform an accurate analysis of HVTL impact on property values. Chalmers uses his own results from earlier research (Chalmers and Voorvaart, High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects, 2009) that used multiple regression analysis from suburbs of Hartford, CT and Springfield, MA and suggests on (pg. 16) that “the conclusions of no statistically significant effect of HVTL proximity or visibility on the market value of residential properties” would have applicability to “suburban

neighborhoods in southern New Hampshire around the Concord, Manchester, and Nashua urban areas" (emphasis added) without providing any reproducible evidence to support this comparison claim.

10. Do you have any criticisms of the comparison sales approach used by Chalmers in the Case Studies?

Yes. Consider the following from Transmission Lines & Property Value Impacts A Summary of Published Research on Property Value Impacts from High Voltage Transmission Lines, prepared for the MSTI Review Project, (full report attached as Exhibit #9) on page 4:

"Appraisal techniques, namely the comparison sales approach, look for differences in market performance of properties affected by high voltage overhead transmission lines to otherwise comparable properties not affected by a transmission line. Criticisms of the comparison sales approach have to do with the influence of an author's expert judgment in locating and refining a set of comparable sales for analytical purposes. The implication is not so much that another appraisal would come to different conclusions, but rather that the choice and manipulation of comparables could influence the finding of price impact. This makes peer review and publication in professional and academic journals an important threshold for credibility of comparison sales studies." 7

The following footnote is especially important:

Footnote 7: The following quotation is from an article in Right of Way magazine, a professional journal: "...Appraisals focusing on transmission line impact are unusually complex, and when insufficient market data is available, the valuation process can become somewhat arbitrary." Rigdon, G. J. (1991). 138 KV Transmission Lines and the Value of Recreational Land. Right of Way, December 1991: 8-18, 15. Retrieved May 11, 2012, from <http://www.irwaonline.org/eweb/upload/1201a.pdf>.

In the MSTI Review Project Summary of Key Literature, Transmission Lines & Property Value Impacts, page 3 Analysis section, states that "There are costs associated with the permitting, construction, and operation of a new high voltage overhead transmission line in a right of way on private property that unique to each property. Professional real estate appraisal is the only appropriate way to assess impacts, or potential impacts, to individual properties."

11. What do you think of Chalmers dismissal of "owners" and "public" perspective of HVTL market value effects in favor of "market value" perspective which must be derived by market data? (pg. 4 of Chalmers Report)

I think public perspective deserves far more research. NH public perspective was considered and is reflected in House Bill 626 which authorizes energy infrastructure development and

designating energy infrastructure corridors as noted:

“and as its citizens become more aware of the value, to themselves and others, of the state’s natural landscapes, it has become increasingly difficult to site and develop large-scale above-ground energy transmission lines from neighboring lower cost regions without unacceptably high development costs and regulatory delays, unacceptable negative impacts on the state’s most valuable natural landscapes, and the potential for unacceptable adverse impacts on adjoining private property values.”

The Preliminary Study Report of May 27, 2011 was prepared by Underwood LLC; Impact on Value of High Voltage Transmission Lines Towns of Deerfield and Littleton. (See Exhibit 10,) The purpose of the report was to take a broad look across the market spectrum using 4 sales from each of the two towns to see if the value of residential properties that abut or bisect existing HVTL is impacted. The methodology used after parcel selection was to review tax cards, confirm data in MLS where available, and with a person directly involved in the transaction, did a comparison of sales data. The author indicated that in all cases all sales were arm’s length transactions (see tax card and deed Exhibit #11). It was reported in the Northern Pass Property Value Impact release (Exhibit # 12) that:

“Based on the preliminary analysis contained herein, there is no market evidence in either Deerfield or Littleton that would indicate diminution of property value due to high voltage transmission lines. This conclusion is further supported by interviews conducted with individuals involved in the market transactions of properties abutting HVTL corridors.”

The public has voiced their concerns and opinions in hearings, written scoping comments, petitions and DEIS comment records, and one major component of that perspective is that NPT will have a negative effect on private property values. Negative public perspective on overhead transmission line impacts is increasingly evident in the news and in the professional literature with each passing decade.

Kurt Kielisch, author of Valuation Guidelines for Properties with Electric Transmission Lines, published and copyright @ Appraisal Group One, states that “Perception = Value.” According to his literature study, the majority of people’s perception of HVTL is one of fear (for health reasons) and aesthetics concerns.

12. How do appraisers perceive HVTL?

Charles Delaney and Douglas Timmons in their research paper entitled High Voltage Power Lines: Do They Affect Residential Property Value? Published in Journal of Real Estate Research (summer 1992) administered a survey to appraisers with 219 usable responses, 93.9 %

cited the reason for Decline in Value Due to HVOETL Proximity was that they were Visually Unattractive. See complete table of responses in (Exhibit #13). Though the number of appraisers from New England was too low for a statistically significance, it is noteworthy that the Regional Analysis of the Mean Percentage Decline in Residential Property Value Due to HVOETL Proximity, in New England is 15.5% , more than twice than the Midwest (7.77%)

13. What other deficiencies do you find in the Chalmers Report as it pertains to market value effects due to HVTL's?

- Lack of evidence from the applicant to prove that there will be no diminishment of property value on those private properties that are to be encumbered by an imposed buried high voltage transmission line easement.
- Lack of evidence from the applicant to prove that noise from the proposed project will not jeopardize marketability of private property. I can testify to negative market effects of the hum of the existing substation on certain properties located in Deerfield.
- Chalmers report did a retrospective appraisal of 1 residential property in Deerfield. The report did not attempt to reconcile the fact that there were more residential properties purchased in Deerfield by the utility or agents for the utility, that were severely impacted by the proposed NPT than fair market sales. How does this omission bias market value effects of NPT?
- New Hampshire real estate is made up of property types that were not addressed in Chalmers report, and by focusing exclusively on single family residential sales and subdivision studies only, properties such as condominium sales, second home sales, waterfront property, residential properties that are off the grid, and conservation land, which have a significant percentage of any real estate market regionally, are being shortchanged with regards to NPT property value impact analysis.

14 .Was the Chalmers report designed to capture the market response associated with the potential initial stigma of a transmission line proposal?

I believe not. In a summary of key literature entitled Transmission Lines & Property Value Impacts, A Summary of Published Research on Property Value Impacts from High Voltage Transmission Lines , prepared for the MSTI Review Project it states on page 2 Key Findings, that "There is some limited evidence in other research that market impacts can be greatest during the siting and construction period-anecdotal information...". It is therefore imperative for the Site Evaluation Committee to allow testimony from market participants to determine what effects the NPT have had on the real estate markets from another region other than Deerfield.

15. How will NPT effect the homes in the historic Deerfield Parade area?

During a community effort to revisit Deerfield's Vision in August of 2011, for the purposes of updating Deerfield's Master Plan, when residents were asked "I chose to live in Deerfield because"... 70% responded "Quality of life" and 49% answered "Visual Appearance". When residents were asked "What do I like most about living in Deerfield", Rural Character topped the list at 46%. (Table is Exhibit #14) This project with tall towers visible from Nottingham Road on the approach to Deerfield Parade as well as from private property, is not consistent with expectations and perceptions of what people look for when they move to Deerfield. NPT would irreparably impact the historic essence of this area. These homes in the Parade setting collectively contribute to exactly what is defined by Deerfield's Vision and what we wish to preserve.

Since Deerfield's Vision has never been challenged before by a project like NPT, as an intervenor, I find myself in the position of defense. I do not want my family, community, and state to suffer damages only then to have the evidence needed to prove impact and loss. What I must bring forward then may be astoundingly simple and pure, but for three generations we have loved where we live, we cherish Deerfield's heritage and our views, and we never take for granted what makes Deerfield such a special place. It is in this spirit that I intervene, to defend against the Northern Pass.

Jeanne Menard reserves the right to file additional testimony as allowed per SEC rules and future changes to the schedule.

This concludes the Pre filed testimony of Jeanne Menard on behalf of my dear sister in law, Anne Burnett and my recently deceased beloved brother Peter Menard of 65 Nottingham Road, Deerfield.

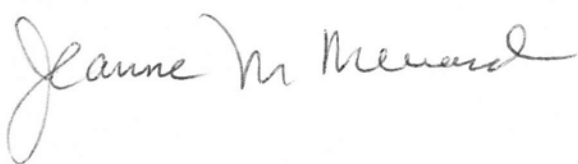
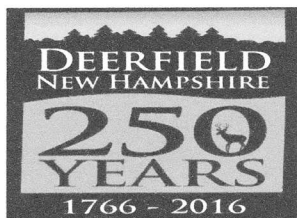
 11/15/16

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- #2 Tax Map for 65 Nottingham Road, Deerfield
- #3A 2010 Deerfield land parcel MLS sheet
- #3B Meetinghouse Hill Road listing sheet
- #4 Hooksett land sales 11-9-15 to 11-9-16 (page 1-3)
- #5 1952 Sears and Roebuck & Co 'Wiring for Home or Farm'
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Waterfront



Deerfield –
 Pleasant Lake. Year
 round home w/
 possible in-law on
 2 acres of land and
 75' shared water
 frontage.
 ..\$449,900



Manchester – 11
 Room, 3 bedroom &
 3 bath Colonial in
 desirable Eastwind
 Estates! Home has
 new flooring, newer
 roof, granite accents
 and fin. basement.
 Conveniently located
 near Exit 1, Rt
 101...\$299,900.



Allenstown – 3700 sq.
 ft. home with attached
 garage. Home has 4
 bedrooms & 3 baths,
 farmers porch, huge
 master w/ spacious
 bath, seprate dressing
 room plus additional
 office space...\$319,900

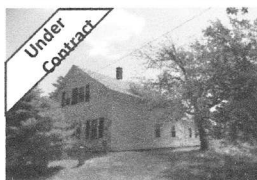


Deerfield – 8 room gambrel on main
 road location has an inviting open
 concept floor plan, new septic,
 newly paved driveway and finished
 2-story outbuilding perfect for home
 office or shop space...\$319,900



Deerfield – Great fishing spot
 on Lamprey at the end of
 private road...Flexible floor
 plan includes sunroom w/
 woodstove...\$176,000

Looking for an Antique?



Deerfield – A true landmark – 10 room
 antique cape with detached 2 story garage.
 \$315,000



Deerfield – We welcome
 out new neighbors to this
 classic antique!

Land

Deerfield:
 3.16 acre building
 lot on Blakes Hill
 Rd...\$64,900



Concord – 2 bedroom
 Condo in Sought after
 Cranmore
 Ridge...\$130,000

Nottingham:
 Cooper Hill Road -
 2.43 acre lot on quiet
 country Rd wooded &
 former pasture
 land...\$82,900

Cooper Hill Road -
 7.31 acre lot for
 single
 dwelling...\$89,900.00

Commercial

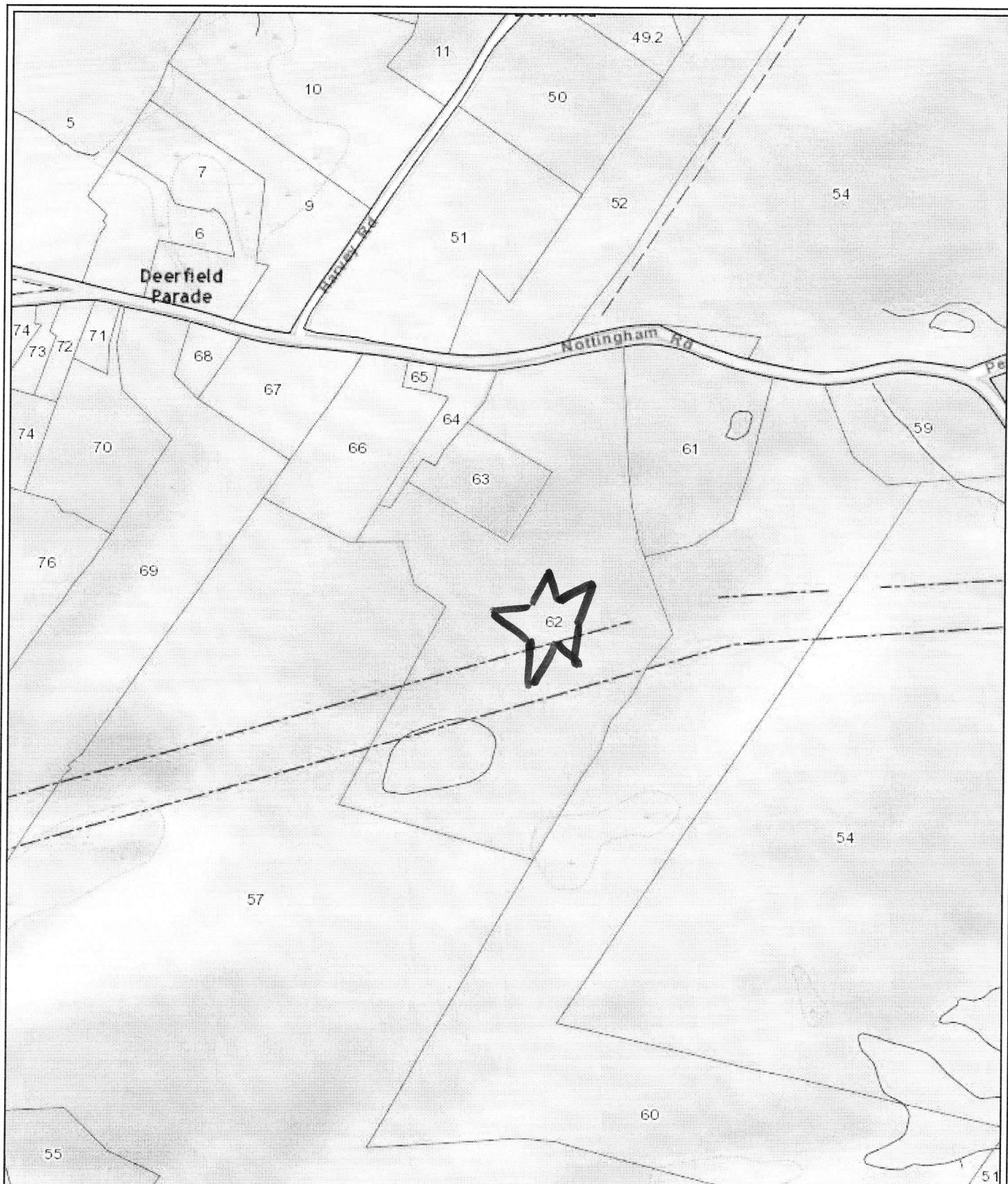


Bedford – professional office space
 located off South River Rd. This 1st
 floor condo has 1025 sq ft. Great
 location! \$129,900. Lease option
 available. Call Tom at 714-1889

In Memory

Peter Menard

To clients & friends; your kind
 words and wonderful memories
 are very consoling. Thank you for
 your understanding during our
 time of transition. We miss him
 at the office!



Deerfield, NH
1 Inch = 530 Feet
February 01, 2016

Exhibit #2



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

www.cai-tech.com

CAI Technologies
Digital Mapping, Data & GIS

	TOTAL		HIGH	LOW	AVG	MED		HIGH	LOW	AVERAGE	MEDIAN	TOTAL PRICE
LISTING COUNT: 3		DAYS ON MARKET:	301	22	120	38		LIST PRICE: \$139,900	\$69,900	\$96,600	\$80,000	\$289,800
								SOLD PRICE: \$130,000	\$55,000	\$88,333	\$80,000	\$265,000




	PIC	Pics	Status	MLS #	Address	City	Price	Date - MLS List	Acres	DOM	Date - Closed	Price - Closed
1	1		CL	2825415	Mountain View Road	Deerfield	\$55,000	3/23/2010	3.00	22	5/21/2010	\$55,000
2	4		CL	2811722	45.5 Browns Mill Road	Deerfield	\$80,000	12/18/2009	5.76	38	3/19/2010	\$80,000
3	6		CL	2778623	Meetinghouse Hill Road	Deerfield	\$130,000	5/19/2009	5.04	301	4/12/2010	\$130,000

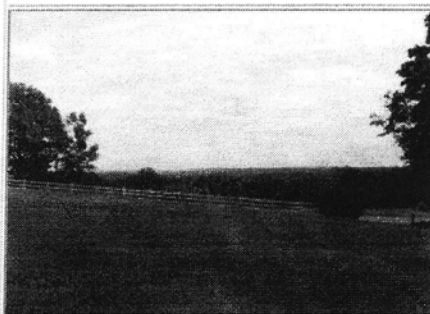
Exhibit #3 a



Land
2778623 Closed

Meetinghouse Hill Road
Deerfield, New Hampshire 03037

L \$139,900
C\$130,000



Type:	Agriculture , Horse Property , Residential , Tillable	Lot Acre:	5.04
Gross Taxes:	\$ 3,926.00	Lot SqFt:	219,542.
Taxes TBD:	No	Est Open Spc:	60 %
Tax Year:	2008	Price/Acre:	\$ 27,757.94
Zoning:	ResAgricultural	Permit Num:	
Flood Zone:	Unknown	Pole Num:	
Road Frontage:	270	Easements:	Unknown
Water Frontage:		Exposure:	East , South , West
Water Acc Type:		Surveyed:	Yes
Water Body Type:			
Water Body Name:			

Multiple Deeds:	Mo. Lease Amt: \$	Association:	Monthly Assoc.\$: \$
Water Body Restri.:	Current/Land Use: Yes	Surveyed By:	Land Gains:
Total # Leases:	Total # Lots:		

Parcel Access ROW:	ROW for other Parcel:	ROW Width:	ROW Length:
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Public Rems: Pasture and view s. 5 acre lot, mostly field, with view s to the south. 270' frontage on scenic Meetinghouse Hill Road, lot probably a field since Deerfield founded. Rolling land is Paxton loam, woods on back line. Lots like this do not come on market often. Next to cemetery.

Directions: 101 Exit 3 (Candia), take Rt. 43 N 11 mi., left onto Meetinghouse Rd. 0.8 mi, white fence on right just past cemetery. From Seacoast, go to 101 Exit 5 (Raymond), take 107 N 11 mi. +/-, left onto Meetinghouse Hill Rd. 0.8 mi. on right.

Amenities:	Location: Rural
Topography: Fenced , Horse Property , Pasture/Field , Paved Road , Rolling , View , Wooded	
Current Use:	

Utilities:	Structure:
Electric: At Street	Shore Rights:
Gas: None	Restrictions:
Roads: Paved , Public	Financing:
Water: On Site Well Needed	Sewer: On Site Septic Needed
Permit Status:	Possession:
Docs Avail: Property Disclosure , Soil Data/USDA Map , Survey	
Excl Sale:	

Tax Rate: \$19.41	Assmt: \$202,300.00	Assmt Yr:
Tax Class:		
Covenant: Yes	Source SqFt:	County: Rockingham
Recorded Deed: Other	Book/Pg: 2924/ 2459	Plan/Survey:
Map/Blck/Lot: 410/ / 108	Property ID:	Tax ID No. (SPAN# VT):
Devel/Subdiv:		
District: Deerfield	High Sch: Conant High School	Jr./Mid Sch: Deerfield Community School
Elem Sch: Deerfield Community Sch	Cable:	Power Co:
Fuel Co:	Phone Co:	Resort:
	Short Sale:	

Auction \$ Det. By:

List Off: Parade Properties	List Agt: Peter Menard	
Firm/Office: 1538/ 0	Phone: (603) 463-7001	Ext: 15
Agent#: 16001	Email: peter@paradeproperties.net	Cell:
Phone/Fax: (603) 463-7001 / (603) 463-9373		Fax: (603) 463-9373
Co-List Agt: Phone:	Cell:	Email:

Non-Public Rems:

Firm/Off Rems:







Showing: Call List Office , Sign on Prop

MLS List Date: 05/19/2009	MLS Type: MLS	List Type: Exclusive Right	TB Fee:
Expire Dt:	BA Fee: 2.50%	NA/Facil Fee: 2.50%	Internet: Yes

Cont Date: 03/16/2010	Contings:	SubA/BrkA: .00%	Var Comm: Yes
Pend Date: 04/07/2010	Org LA: Peter Menard	Orig List \$: \$139,900	DOM/DUC: 301 / 27
With Date:	Org CA: Maria Prentice		
Closed Date: 04/12/2010	Cancelled Date:		
Closed \$: \$130,000	Fin Terms: Conventional		

Exhibit 36

TOTAL		HIGH	LOW	AVG	MED		HIGH	LOW	AVERAGE	MEDIAN	TOTAL PRICE
LISTING COUNT: 6	DAYS ON MARKET:	740	5	170	63	LIST PRICE:	\$220,000	\$55,000	\$101,666	\$77,500	\$610,000
						SOLD PRICE:	\$195,000	\$45,000	\$91,250	\$70,000	\$547,500

	PIC	Pics	Status	MLS #	Address	City	Price	Date - MLS List	Acres	DOM	Date - Closed
1	4		CL	4450352	52 College Park Drive	Hooksett	\$45,000	9/11/2015	2.05	49	11/13/2015
2	1		CL	4493366	Lot 1-1 Coaker Ave	Hooksett	\$65,000	5/26/2016	0.21	5	7/11/2016
3	5		CL	4514919	27 Francis Avenue	Hooksett	\$65,000	9/10/2016	0.23	26	10/19/2016
4	3		CL	4481064	25 Golden Gate Drive	Hooksett	\$75,000	4/5/2016	0.59	78	7/25/2016
5	2		CL	4444552	129 Farmer Road	Hooksett	\$102,500	8/13/2015	1.30	124	12/21/2015
6	10		CL	4382914	Lot 10 Quimby Mountain Rd	Hooksett	\$195,000	9/8/2014	2.18	740	10/28/2016

Land	Lot 10 Quimby Mountain Rd	Unit/Lot #:	Price - List	\$220,000
4382914	Hooksett	NH 03106	Price - Closed	\$195,000
Closed				



Zoning LDR
Lot Acres/SqFt 2.18 / 94,961
Price Per Acre \$100,917
Taxes TBD N
Gross Taxes/Year \$3,874.00 / 2015 :
Flood Zone No
Water Access
Water Body Type
Water Frontage Length
Water Restrictions
Current Use N
DOM 740

Road Frontage TBD
Road Frontage Length
Surveyed No
Surveyed By
Easements Yes
Parcel Access ROW
ROW Length/Width /
ROW Other Parcel
Total Lots/Leases /
Exposure
Estimated Open Space %
Land Gains



Virtual Tours: Previsit VTour URL

Directions I-93 to Exit 11 to Hackett Hill take right onto S.Bow Rd, left onto Roy Rd, turn left onto Pearl drive, take left onto Quimby Mountain Rd property on right with sign.

Are you looking for the perfect spot to build your DREAM home? This is the one you have been waiting for! It is rare to find a building lot available that will take your breath away and this is IT! Lot 10 on Quimby Mountain offers SPECTACULAR, 180' westerly views of Mt. Kearsage, Mt. Sunapee and Mt. Monadnock. Be a part of this private subdivision located conveniently only 15 minutes from Concord or Manchester. Want location, location, location AND a view? You've found it!

LOT/LOCATION

Lot Description	Country Setting, Sloping, Subdivision, View, Wooded	Area Description	
County	Merrimack	Devel/Subdiv	Quimby Mountain Subdivision
Pole Number		Suitable Use	Residential
Permit Status		Permit Number	
Roads	Cul-de-Sac, Paved, Public	Driveway	
Equipment		Amenities	
Parking		School-Elem	
School-District	Hooksett School District	School-High	
School-Middle			

UTILITIES

Services		Management Co/Phone	
Water	On-Site Well Needed	Fuel Company	
Sewer	On-Site Septic Needed	Phone Company	
Electric	Underground	Cable Company	
		Electric Company	

PUBLIC RECORDS

Recorded Type	Warranty	Deeds-Total	Book/Page	3207 / 1123
Map		Block	Lot	
SPAN #		Property ID	Plan Survey #	
Assmt Amt/Year	/	Assmnts-Special	Tax Class	
Tax Rate				

DISCLOSURES

Fee/Frequency	/	Fee Includes	
Fee 2/Frequency	/	Fee 2 Includes	
Fee 3/Frequency	/	Fee 3 Includes	

Exhibit #4 pg 2

DISCLOSURES continued

Page 2 of 2

Monthly Lease Amt
Listing Service Full Service
Comp Only/Type No
Short Sale No
Covenants Yes
Resort No
Auction N
Auctioneer - Responsible
Auctioneer License #
Auctn Price Determnd By
Documents Available Covenants, Deed, Property Disclosure, Tax Map

Sale Includes
Items Excluded
Land Restrictions Mobile Homes
Foreclsd/BankOwnd/REO No
Shore Rights
Financing
Possession At Closing
Auction Date/Time /
Auction Info

LISTING INFORMATION

List Office Name/ID Century 21 Thompson Real Estate /1024-0
List Agent Name/ID Terry Riel /21841
 Off: 603-736-9700 Cell: 603-848-7371
 Fax: 603-736-8059 C21RielT@metrocast.net

Co-List Agent Name/ID /

Buyer Agency/Type 2.50 /% **NonAgency Facilitator/Type** 2.50 /% **SubAgency/Type** 0.00 /%
Transactional Broker/Type / **See Non-PublicRemarks for Comp** No **Variable Commission** No

OCCUPANT / SHOWING INFORMATION

Showing Instructions

Showing Service

Owner Name on file

Owner Phone

Occupant Name

Occupant Phone

STATUS INFORMATION

Date - MLS List 9/8/2014 **Listing Type** Exclusive Right **Price-Original** \$220,000
Date - AUC 9/17/2016 **Contingencies** Other
Date - Pending 10/26/2016
Date - Withdrawn
Date - Terminated
Date - Expiration

CLOSING INFORMATION

Date - Closed 10/28/2016 **Selling Agent** Terry Riel
Selling Office Century 21 Thompson Real Estate / 1024-0 Cell: 603-848-7371
Title Company C21RielT@metrocast.net
Concessions No Comment **Concession Comments**
Concessions Amt
Appraisal Complete **Appraiser** /
Financial Terms Cash **Buyer Name** **Residence**

REMARKS

Remarks - Non-Public **Commission based on selling price minus any seller concessions.**
 Remarks - Intra-Firm

MY INFO

My Name Jeanne Menard **My Office Name** Parade Properties
My Phone Number Off: 603-463-7001 **My Phone Number** Off: 603-463-7001
My E-mail jeanne@paradeproperties.net

Exhibit # 4 pg 3



NEW *Improved*
1951-1952
EDITION

ELECTRIC WIRING

FOR HOME OR FARM

How to Plan It . . . How to Install It

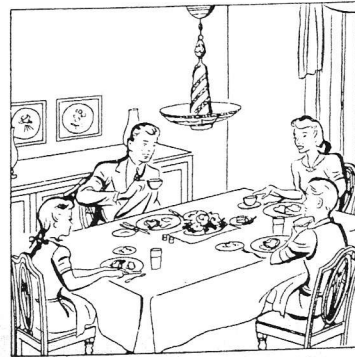
— Exhibit #5 —

SEARS, ROEBUCK AND CO.

"Planned Wiring



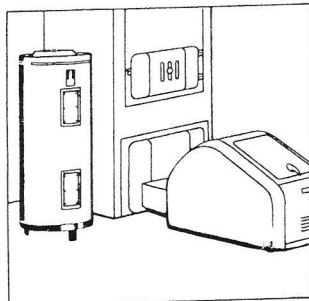
An electric range practically prepares meals for you by itself



Good light saves eyesight, makes rooms beautiful and attractive

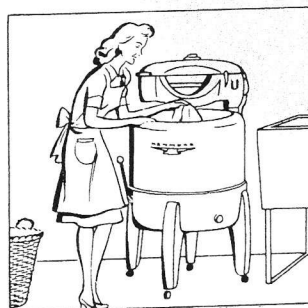
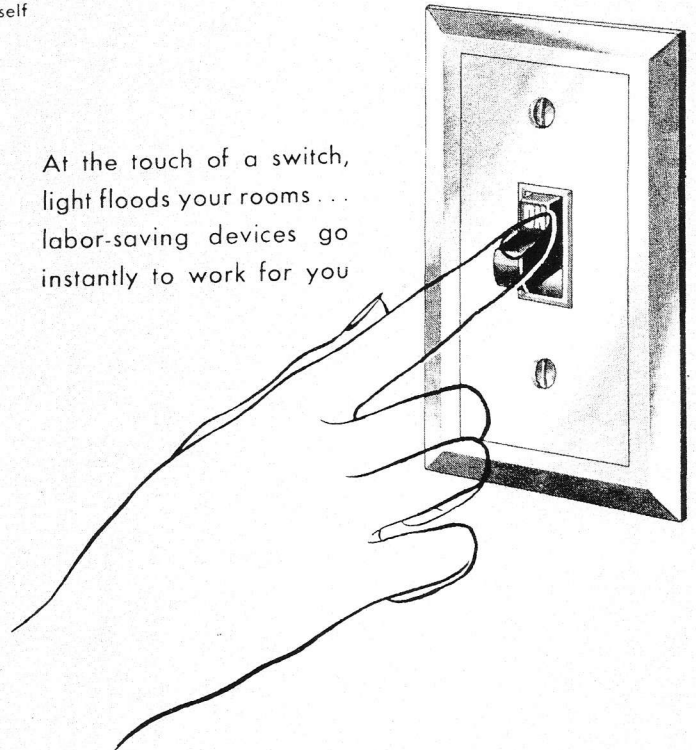


An electric refrigerator keeps food fresh and edible longer



Electric Stokers and Water Heaters operate automatically

At the touch of a switch, light floods your rooms . . . labor-saving devices go instantly to work for you



On washdays an electric washer saves time . . . reduces drudgery



Vacuum cleaners simplify and speed up house cleaning tasks



A portable heater provides constant heat wherever it is

for the up-to-date electrified home

With electricity you have more time to do many extra things around the house . . . more time for your family

Electrical living makes the home a more pleasant place in which to live. Tasks that once took hours to perform are now undertaken by time-saving, automatic servants. With the aid of electricity you have more time to spend with your family . . . time for hobbies and recreation:

To get the most from the multitude of electrical servants now waiting to serve you, you must plan **an adequate system of wiring**. This means that your home must be wired to accommodate all lighting and electrical appliances you now have as well as those you expect to install in the future. Think ahead . . . plan for the following:

Housework savers such as a vacuum cleaner; a range and dishwasher in the kitchen; washer, ironer and clothes dryer in the laundry.

Refrigerator and Food Freezer to keep foods fresh, healthful, and delicious; to eliminate canning. You'll eat better the whole year 'round.

Water Heater and Pump to provide a lavish supply of hot running water whenever you need it.

Bright anti-glare light in every room to eliminate eyestrain and make rooms cheerful.

Health and comfort appliances such as portable and built-in heaters to provide warmth on chilly days, a ventilating system, fans, electric blankets, heating pads, sunlamps and heat lamps.

Convenience appliances which cut housework in half—toaster, roaster, coffee-maker, mixer, waffle-iron, sandwich grill, and clock.

A Radio-Phonograph for news, music, entertainment.

To enjoy electrical living, **be sure to plan ahead NOW!** See that you have a large enough electrical system to meet your growing electrical needs. Plan for a sufficient number of branch circuits to carry full current to all appliances. Be sure you have plenty of convenience outlets so that lamps and appliances can be used where you want them.

A few more dollars spent for your wiring system now will make it possible for you to enjoy all the electrical servants to be developed in the future . . . without costly rewiring expense.



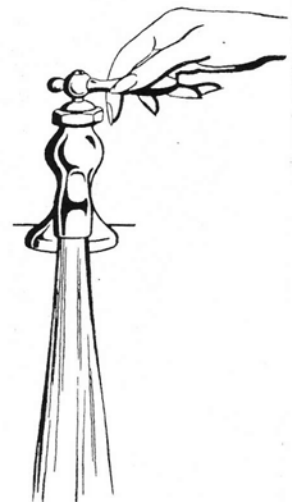
All appliances greatly add to your comfort and convenience



Entertainment for the whole family at the turn of a radio dial

Running water the instant you want it with just a twist of the wrist

The convenience of running water at low cost is possible for those who live away from city water lines. Running water increases farm profits by saving you time, labor, and money. Plan for a large enough system so that you will have sufficient water for your home, cattle, poultry, and garden at all times.



for the efficient electrified farm

Electricity is cheap . . . saves time and labor . . .

does as much work for 10c as a man can do all day

Electrification on your farm is more than a dream . . . it is a reality thanks to your local REA Cooperative and the Utility Companies. Electricity can and will bring to American farms modern lighting, running water, powered equipment, scientific machinery, and conveniences that farmers have so long needed and deserved.

Electricity means higher profits, too. No matter what type of farm you own, the intelligent use of dependable Electric Servants will increase production . . . permit you to do more work in less time and at lower cost.

Hand labor costs money, even when you do the work yourself. It wastes your time, time that could be more profitably spent doing something else. Can you afford to spend your own time at

hard drudgery jobs like shelling corn, pumping water, milking cows, or cutting wood when electricity does them for only a few pennies an hour?

Look ahead to the day when your farm will be run almost entirely by electricity and plan now for an adequate wiring system. Remember that the more electricity you use, the less it costs per kilowatt hour, because rate schedules are always based on a sliding scale. For example the table below indicates the average rates charged by the power supplier of a typical farm community. Note how the cost of power decreases as consumption increases.

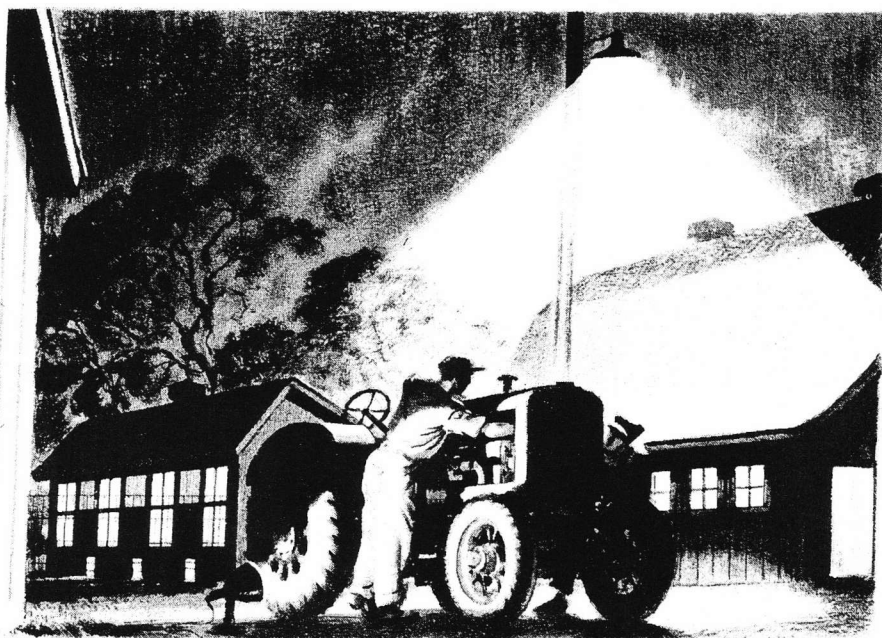
Current used per month	Cost per kilowatt hr.
First 35 kilowatt hours	\$3.00 minimum bill
Next 45 kilowatt hours	4½ cents per kwh.
Next 120 kilowatt hours	2½ cents per kwh.
Over 200 kilowatt hours	2 cents per kwh.



Make your own equipment repairs with an electric grinder

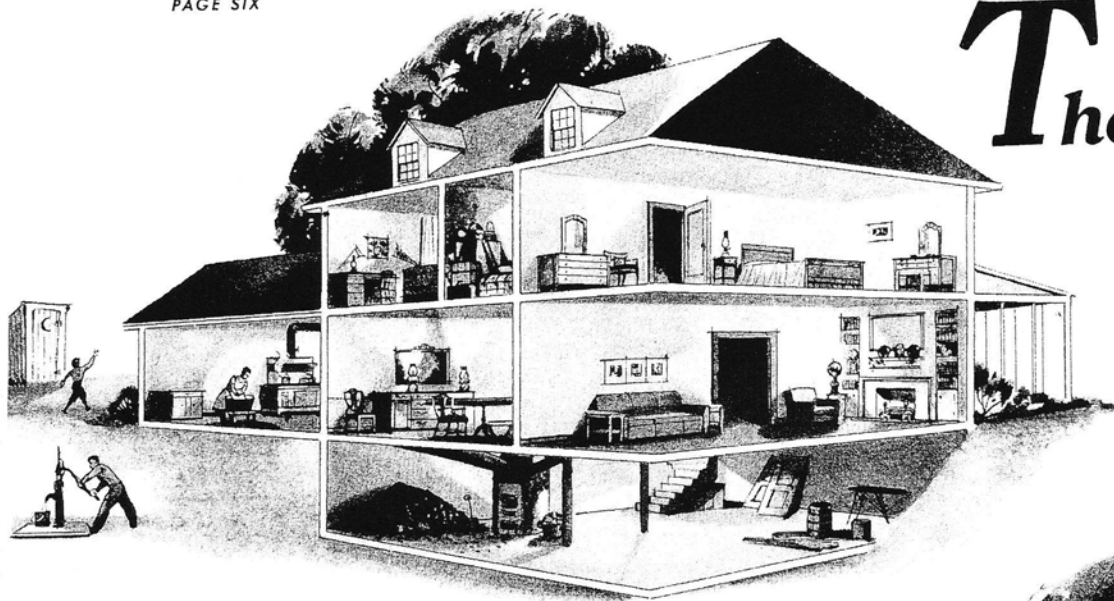


Save time and labor with an electric automatically controlled Hammermill



Farmyard and building lighting stretches the working day of farm animals as well as farmers. You can do after-dark chores more easily and safely. Properly placed yard lights prevent accidents and discourage prowlers

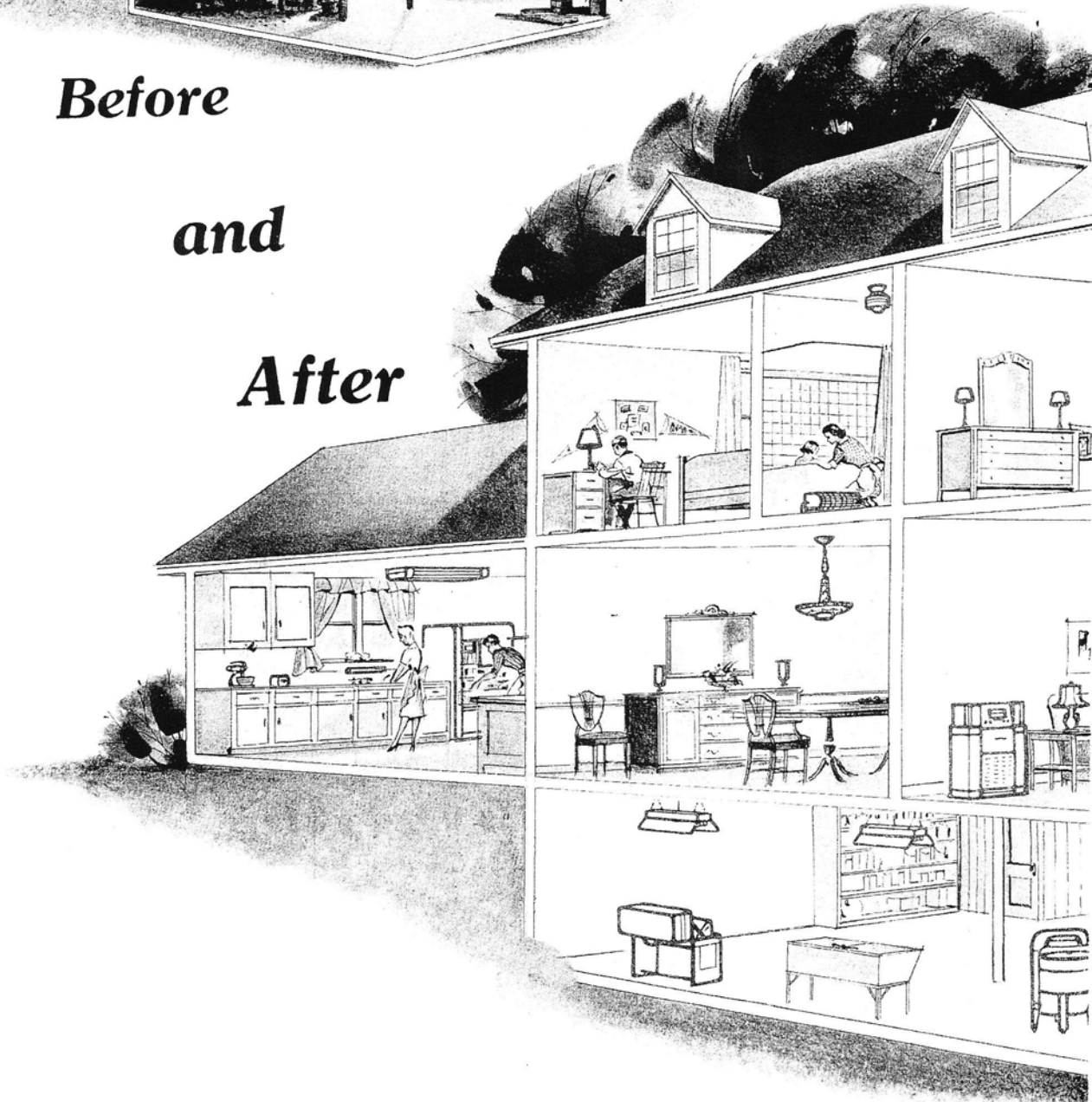
The old wa



Before

and

After



TOTAL		HIGH	LOW	AVG	MED		HIGH	LOW	AVERAGE	MEDIAN	TOTAL PRICE
LISTING COUNT: 6	DAYS ON MARKET:	1372	5	355	141	LIST PRICE:	\$80,000	\$55,000	\$65,766	\$64,900	\$394,600
						SOLD PRICE:	\$70,000	\$40,000	\$56,816	\$59,450	\$340,900







PIC	Pics	Status	MLS #	Address	City	Price	Date - MLS List	Acres	DOM	Date - Closed	Price - Closed
1	1		CL	4249244	Lot 12-2 Ritchie Road	Deerfield	\$40,000	6/24/2013	3.42	395	8/1/2014 \$40,000
2	3		CL	4240163	North Rd	Deerfield	\$47,000	5/23/2013	1.59	153	1/6/2014 \$47,000
3	4		CL	4335018	TBD Mt. Delight Road	Deerfield	\$59,000	2/3/2014	6.49	79	5/30/2014 \$59,000
4	3		CL	4348691	0 Griffin Road Map 204 Lot 2 Sub 01	Deerfield	\$59,900	4/18/2014	4.60	129	9/26/2014 \$59,900
5	1		CL	4000644	Lot 1 Wild Turkey Lane	Deerfield	\$65,000	5/24/2010	6.83	1372	3/14/2014 \$65,000
6	5		CL	4367487	TBD Griffin Road	Deerfield	\$70,000	6/28/2014	4.40	5	8/14/2014 \$70,000

Exhibit #6

Electromagnetic Radiation Field Property Devaluation

The *Criscuola v. Power Authority of the State of New York* decision by the New York State Court of Appeals seems to provide the means to obtain damages due to diminution of property values as a result of proximity to an electromagnetic radiation field (EMF). This article explores ramifications of the decision and its application to valuation problems.

When New York State's highest court, the Court of Appeals, handed down *Criscuola v. Power Authority of the State of New York*¹ last year, many hailed the decision as the missing piece of the puzzle that would provide the means to obtain monetary damages because of diminution of property values caused by proximity to an electromagnetic radiation field (EMF).

One year later, the aggressive use of the holding can be observed in many different types of lawsuits. The *Criscuola* doctrine is also being used in inverse condemnation cases and in a host of other situations as diverse as the fertile imagination of learned counsel would allow.

Much has been written in legal periodicals about *Criscuola* and its potential application to any litigation involving the use of

land. It is therefore necessary to carefully explore the decision to consider its application to valuation problems.

EMINENT DOMAIN CONTEXT

Criscuola arose in the context of a pure eminent domain taking; that is, there was a condemnation of a strip of property through the Criscuola brothers' farm in rural New York. The appropriation was by the Power Authority of the State of New York for a 345-KV power transmission line, involving a 160-foot corridor crossing the property diagonally in an east-west direction approximately midway of its depth.

The claimants filed a claim for damages seeking just compensation, not only for the six acres directly taken for the pow-

1. *Criscuola v. Power Authority of the State of New York*, 81 NY2d 649, 602 NYS2d 588, 621 NE2d 1199 (1993). Also reported, *ATLA Law Reporter* 23, no. 33, 37; *Toxic Law Reporter* 8, no. 20; *Indoor Pollution Law Report* 7, no. 5; *Mealey's Litigation Reports, Toxics Torts* 2, no. 14; *EMF Litigation News* (November 1993); and *Microwave News* (Sept./Oct. 1993, Nov./Dec. 1993, Jan./Feb. 1994).

Michael Rikon is a partner in Goldstein, Goldstein & Rikon, P.C., in New York City. He received a BS in business administration from the New York Institute of Technology, a JD from Brooklyn Law School, and an LLM from New York University, School of Law. Mr. Rikon was a consultant to the New York State Commission on eminent domain procedure law.

Exhibit #7

erline, but for the loss in value sustained by the remaining 94 acres because of the remainder's loss of market value. Condemnation lawyers refer to these two types of damages in partial takings as direct and consequential.

Claimants alleged that the consequential damages arose as a result of the public's perception of health risks associated with high-voltage powerlines, a fear known as "cancerphobia." One of the owners testified that he never would have bought the property if it had had a high-voltage powerline across it. Claimants' expert valuation witness, an MAI-designated appraiser, testified that because of the public's cancerphobia, the market value of the remainder was worth half of its prevesting value.

The trial court, the New York State Court of Claims, held that the Criscuolas were only entitled to recover for the direct takings, and awarded \$5,400, plus \$543 for hardwood trees taken down, a total of \$5,943. The court ruled that to recover for consequential damages, the claimant must first prove that powerlines cause health problems by a preponderance of the credible scientific evidence. If scientific proof supported the cancerphobia of the public, the claimant must then also establish that this reasonable apprehension has affected the purchaser's willingness to pay the fair market value of the property.

On appeal, the trial court's decision was affirmed by the Appellate Division.² The Appellate Court, in affirming *Criscuola*, relied on a companion case involving another parcel located in a different county that was also taken by the Power Authority for the same Marcy-South powerline that was decided by another appellate court of equal jurisdiction.³

Criscuola moved for, and received permission to appeal to New York State's highest court, the Court of Appeals. The Power Authority argued, once again, that existing law required that the claimants must first prove by a preponderance of the evidence that health fears were scientifically reasonable, and that the claimants (who were joined with all other Marcy-South claimants) could not con-

vince the trial judge, who heard a bevy of impressive and certainly expensive expert witnesses, that there was a basis in scientific evidence for a fear of exposure to the fields emitted by powerlines.

NEW YORK STATE COURT OF APPEALS DECISION

The Court of Appeals held otherwise, and reversed in a decision by Judge Bellacosa, who stated:

We are satisfied that there should be no requirement that the claimant, as a separate and higher component of its market value proofs, must establish the reasonableness of a fear or perception of danger or of health risks from exposure to high-voltage powerlines. The issue is a just compensation proceeding (citations omitted). This consequence may be present even if the public's fear is unreasonable. Whether the danger is a scientifically genuine or verifiable fact should be irrelevant to the central issue of its market value impact. Genuineness and proportionate dollar effects are relevant factors, to be sure, but in the usual evidentiary framework. Such factors should be left to the contest between the parties' market value experts, not magnified and escalated by a whole new battery of electromagnetic power engineers, scientists or medical experts. "Adverse health effects *vel non* is not the issue in eminent domain proceedings: full compensation to the landowner for property taken is" (citations omitted). As the Court of Appeals of Kansas has noted, "Logic and fairness . . . dictate that any loss of market value proven with a reasonable degree of probability should be compensable, regardless of its source. If no one will buy a residential lot because it has a high-voltage line across it, the lot is a total loss even though the owner has the legal right to build a house on it. If buyers can be found, but only at half the value it had before the line was installed, the owner has suffered a 50% loss."⁴ Thus, relying on *Willsey*, the Supreme Court of Kansas concluded, and we agree, that evidence of fear in the marketplace is admissible with respect to the value of property taken without proof of the reasonableness of the fear.⁵

KEY HOLDING

In the key holding, once again, the New York Court of Appeals ruled:

- There should be no requirement that the claimant must establish the reason-

2. *Criscuola v. Power Authority of the State of New York*, 188 AD2d 951, 592 NYS2d 79 (3d Dept., 1992).

3. *Zappavigna v. State of New York*, 186 AD2d 557, 588 NYS2d 585 (2d Dept., 1992).

4. *Willsey v. Kansas City Power*, 631 P2d 268, 277-278.

5. *Ryan v. Kansas Power & Light Co.*, 815 P2d 528, 533.

ableness of a fear or perception of danger or of health risks from exposure to high-voltage power lines, and

- Whether the danger is a scientifically genuine or verifiable fact should be irrelevant to the central issue of its market value impact.

APPLICATION TO NONCONDEMNATION CASES

It is this marketplace evidence rule that has sparked the plaintiff's bar to apply *Criscuola* to noncondemnation situations. Indeed, *Criscuola* is being applied against the City of New York by homeowners who live in Staten Island and are unable to sell their homes because of the largest landfill in the country. The noxious smell and unsightliness of this mountain of garbage has created a well-publicized fear of cancer to would-be home buyers.

Fear in the real estate marketplace is also argued as a reason for not allowing construction for a CellularOne Tower in Glen Cove, Long Island. Community Board Two in Greenwich Village, New York, uses this reason to oppose the construction of a power substation the Transit Authority plans to build. The State of Connecticut General Assembly's Committee on Transportation is considering the potential EMF property devaluation that may be caused by Amtrak's electrification of railroad lines within the state.

The argument being advanced in these situations is that even though the best-informed experts cannot say for sure that EMF causes cancer, everyone agrees that if a powerline is constructed next door, local real estate values may suffer substantial devaluation.

Litigation is currently proceeding in New York against Consolidated Edison and against the Long Island Lighting Company, seeking damages for inverse condemnation, trespass, and injunctive relief. Similar inverse condemnation claims are being filed across the country. The number of property devaluation claims continues to grow geometrically.

CRISCUOLA FORMULA

Judge Bellacosa wrote in *Criscuola* that "evidence of fear in the marketplace is admis-

sible with respect to the value of property taken without proof of the reasonableness of the fear."⁶

A claimant, however, is not relieved from giving any proof to establish claims and just compensation damages. *Criscuola v. Power Authority of the State of New York* mandates that a claimant must still establish some prevalent perception of a danger emanating from the objectionable condition.

Quoting the *Ryan* decision once again, the Court of Appeals stated that "no witness, whether expert or nonexpert, may use his or her personal fear as a basis for testifying about fear in the marketplace. However, any other evidence that fear exists in the public about the dangers of high-voltage lines is admissible" (emphasis added). Judge Bellacosa further stated:

Claimants should have to connect the market value diminution of the property to the particular fear in much the same manner that any other adverse market effects are shown; e.g., by proffering evidence that the market value of property across which powerlines have been built has been negatively affected in relation to comparable properties across which no powerlines have been built (citations omitted).

EMF INVERSE CONDEMNATION

In an inverse condemnation (i.e., an EMF property devaluation claim), the damage calculation should be the same as if the property were condemned because the public perceives that there is a health risk when one lives in close proximity to a high-voltage power transmission line. This perception among the prospective purchasers of the property results in a substantial loss of value.

This cancerphobia affects the minds of any prospective purchaser, causing a loss of demand, a loss of market value, and thus damage to an EMF-affected property. Indeed, even if a prospective purchaser were certain that there was no risk to health, he or she still would not be disposed to acquire a property with such a limited resale potential.

One thing is certain: whether the danger is a scientifically genuine or verifiable fact is irrelevant to the central issue of its market value impact. Appraisers should be cognizant of not only the change in law, but of the market effect as well.

6. *Ryan v. Kansas Power & Light Co.*

It should not be difficult to establish that the market value of real property in close proximity to a high-voltage powerline is substantially lower than a comparable property unaffected by a powerline.

THE PUBLIC'S PERCEPTION— CANCERPHOBIA

According to an article by Ron Marx,⁷ a public poll taken in 1993 by Cambridge Reports/Research showed that 63% of all adult Americans were aware of the EMF issue, up from 31% in 1989. Half responded that they were "extremely worried" about it. The public's perception of a problem is well established.

The reason for the growing awareness has been the increased reporting of residential and school cancer cluster investigations near powerlines, along with numerous studies of occupational exposure showing an increased frequency of cancer in workers who have had higher exposure levels to EMF.

Recently, an article in *The New York Times*, "Power Lines Raise Fears in Home Buyers,"⁸ began, "When Marie Trizano takes people to see houses near powerlines, she says sometimes they won't even get out of the car." There have been hundreds of other similar articles in magazines and newspapers across the country.⁹

Homeowners who adjoin high-voltage powerlines have reported that their EMF-affected homes are unsellable at any price. An appraiser should be easily able to connect the market value diminution of the property to the public's fear of an EMF.

APPROACH TO VALUATION

The proper approach for an appraiser to take in valuing a parcel of land damaged by the visible presence of a high-voltage powerline will be a before-and-after valuation of similar properties. In other words, comparable unaffected properties will be selected and adjusted, with an appraiser considering location, market conditions, physical characteristics, conditions of sale, time, financing terms, and use. This sales comparison approach will provide or indicate a market value for the unaffected (before) property.

The appraiser will then attempt to find comparable sales of parcels similarly situated next to a powerline, if possible. It may be extremely unlikely that any recent sales of EMF-affected properties exist. Assuming that the appraiser's research does indicate some nonforeclosure or other distress sales of property in proximity to a powerline, these sales must be analyzed and compared with the subject property. The after (affected) property value is then subtracted from the before (unaffected) property value, and the difference will be the damages.

CONCLUSION

It is entirely possible to conclude after an EMF market study that most parcels of EMF-affected property will have a restricted resale value, and thus there will be damages in the full indicated value found by adjusted comparable properties not affected by high-voltage powerlines.

7. Ron D. Marx, "This ELF Could Be the Next Giant in Environmental Hazards," *Econ the Environmental Magazine for Real Property Hazards* (November 1993): 22.

8. *The New York Times*, "Power Lines Raise Fears in Home Buyers," *The New York Times*, Section 10 (July 11, 1993): 5.

9. See, for example, "Power Lines Short-Circuit Sales, Homeowners Claim," *The Wall Street Journal* (December 8, 1993): B1; *New York Newsday*, "Power Struggle—High-Tension Lines Creating Tension Among Some Buyers," *New York Newsday* (August 14, 1994): Real Estate, 1.

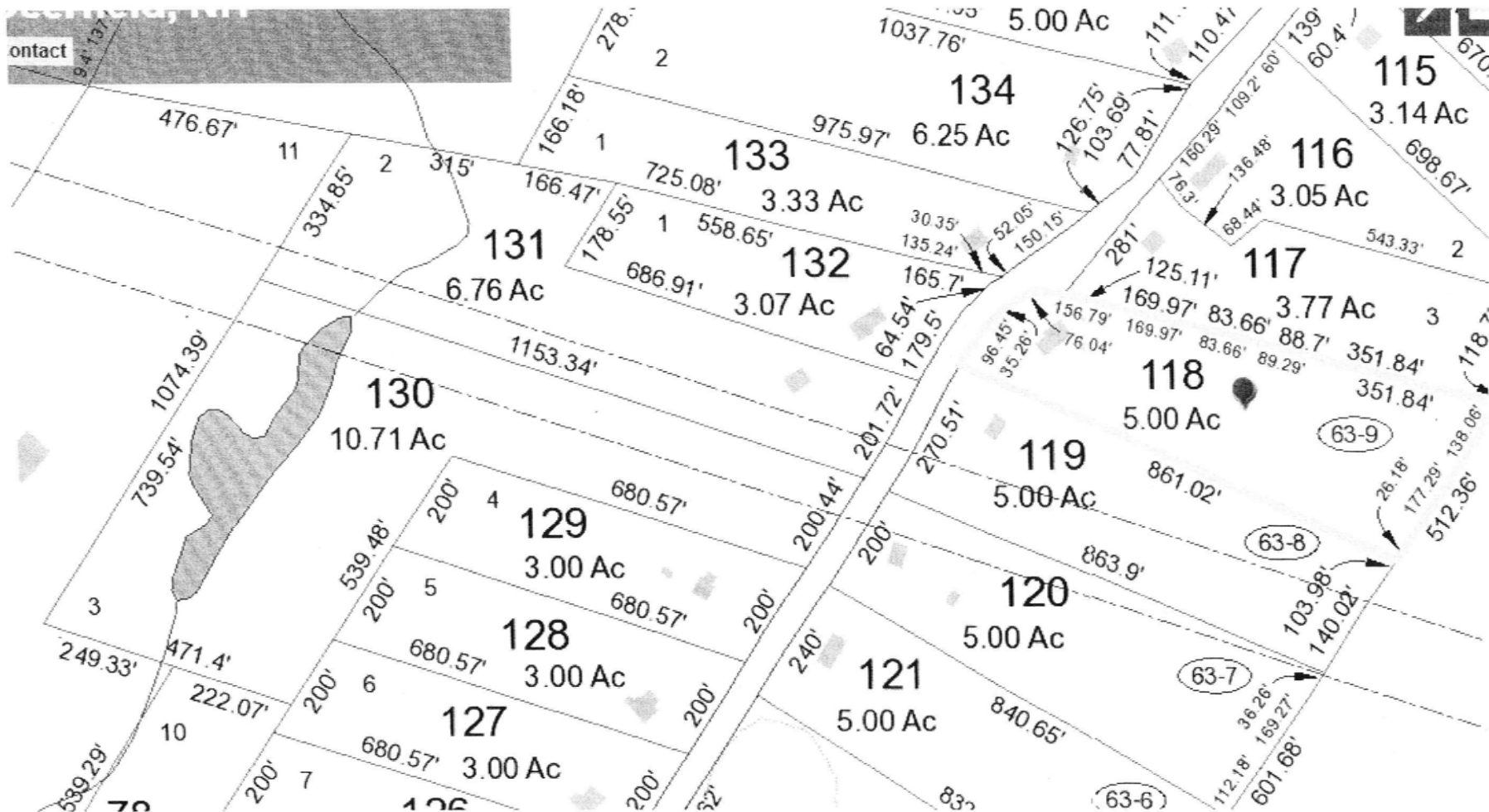


Exhibit #8

A Summary of Key Literature by



Transmission Lines & Property Value Impacts

A Summary of Published Research on Property Value Impacts from High Voltage Transmission Lines

PREPARED FOR THE MSTI REVIEW PROJECT

May 2012

Transmission Lines & Property Value Impacts

A Review of Published Research on Property Value Impacts from High Voltage Transmission Lines

May 2012

PUBLISHED ONLINE:

<http://headwaterseconomics.org>

ABOUT HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions in the West.

ABOUT THE MSTI REVIEW PROJECT

The MSTI Review Project is a joint effort between three Montana counties and five non-governmental organizations along the Montana-Idaho border to conduct an independent analysis of the Mountain States Transmission Intertie (MSTI).

For more information, please visit the project web site: <http://mstireviewproject.org>

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mstireviewproject@gmail.com
(406) 548-1592



P.O. Box 7059
Bozeman, MT 59771
<http://headwaterseconomics.org>

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Introduction and Key Findings

Many stakeholders in the Mountain States Transmission Intertie (MSTI) permitting process including local government officials are concerned about the potential impact of a new high voltage overhead transmission line on private property values in Montana and Idaho. This review discusses research on property value impacts from high voltage overhead transmission lines with a focus on what can be learned that is of relevance to the proposed MSTI project.¹ The target audience for this review is local government officials associated with the MSTI Review Project.

There is a significant body of professional and academic literature on property value impacts from transmission lines. Several important summaries of this body of work are available, including one commissioned for the Draft Environmental Impact Statement (EIS) for the MSTI project.² However, one new study has yet to be assimilated into existing summaries of the professional literature on property value impacts from high voltage overhead transmission lines. The new study is Dr. James Chalmers' research on sales of properties located along the 500 kV Colstrip-BPA line in Montana. Dr. Chalmers' research was carried out under contract to Northwestern Energy in 2010 and 2011. His findings are available in a detailed research report and were published in two peer-reviewed journal articles in 2012.³

Chalmers' research is relevant to the MSTI proposal because it considers property types more comparable to the areas affected by MSTI than any other published studies. If built, MSTI would traverse parts of Montana and Idaho where agriculture land uses, including ranching and intensive crop production, are dominant on private property. Forested cabin sites, exurban and rural residential properties could also be affected. Chalmers' study provides new insights into the market effects of the Colstrip-BPA line on similar property types—although it is not appropriate to generalize from such research to effects on specific properties. The only way to assess impacts on an individual property is through a professional appraisal. Furthermore, Chalmers' research was not designed to provide an impact analysis for MSTI and there it presents opportunities and some notable limitations as a resource in assessing potential impacts from the MSTI line.

¹ The MSTI Review Project is an effort between Montana counties and non-governmental organizations along the Montana-Idaho border to conduct an independent analysis of the Mountain States Transmission Intertie (MSTI) proposal. The Project is working to (1) better understand the need and context of the line, (2) balance energy development with local values by identifying corridors while protecting the community and environment, and (3) assess the economic impacts and benefits of the line. Focused on outreach to local government stakeholders in the MSTI permitting process, the MSTI Review Project core team includes Madison County, MT; Jefferson County, MT; Western Environmental Law Center; Headwaters Economics; Sonoran Institute; Craighead Institute; and Future West. For more information, please see: <http://www.mstireviewproject.org>.

² Kroll, C. A. and Priestly, T. (1992). The Effects of Overhead Transmission Lines on Property Values. *Report to Edison Electric Institute Siting & Environmental Planning Task Force*. Priestley, T. (2009). *Transmission Lines and Property Values: Review of the Research and Summary of Key Findings* (Vol. Appendix c.7.2 to the 2010 Draft EIS, MSTI). Jackson, T. O., & Pitts, J. (2010). The Effects of Electric Transmission Lines on Property Values: A Literature Review. *Journal of Real Estate Literature*, 18(2), 239–259.

³ Chalmers, J. A. (2012a). *High Voltage Transmission Lines and Montana Real Estate Values*. Available from Northwestern Energy. Retrieved May 11, 2012, from <http://www.northwesternenergy.com/documents/ElectricTransmission/HighVoltageFinalReport.pdf>. Chalmers, J. A. (2012b). High-Voltage Transmission Lines and Rural, Western Real Estate Values. *The Appraisal Journal*, Winter, 2012: 1-16. Available from Northwestern Energy. Retrieved May 11, 2012, from <http://www.northwesternenergy.com/documents/ElectricTransmission/HighVoltageValues.pdf>. Chalmers, J. A. (2012c). Transmission Line Impacts on Rural Property Values. *Right of Way*. May/June 2012: 32-36.

The review is organized as follows.

- A brief summary of key points concludes this introduction.
- Section 2 describes the approaches used in research on property value impacts from high voltage transmission lines, what the research says generally, and how Chalmers' research findings compare and contribute to the existing studies.
- Section 3 highlights cautions and challenges in applying existing research, including the Chalmers study, to projections of impacts from the MSTI project.
- A complete bibliography is provided at the end. An annotated digital version with links to many of the referenced studies will be provided with the final draft.

As part of the effort to evaluate and understand property value impacts from transmission lines, the MSTI Review Project hosted a presentation in Butte on April 17, 2012. Dr. Chalmers presented his research findings and a panel of real estate professionals from different locations in the region of Montana potentially affected by MSTI provided comments and critique.⁴

Key Findings

Most property value impact studies use market response to evaluate impact. From a market response perspective, transmission lines affect property values adversely when they sell at prices lower or more slowly than comparable properties without transmission lines. This approach tends to find less evidence of negative impact than what might be expected based on surveys and interviews that ask people about their feelings about transmission lines. The majority of responses to such queries reveal negative associations with transmission lines, although not without variation and some exceptions.

The majority of previous research on property value impacts concerns residential properties in suburban and urban areas. The recent study of sales involving agricultural and residential properties along the Colstrip-BPA 500 kV line in Montana by James Chalmers is the first detailed exploration of market impacts to rural properties in the Interior West. The research uses appraisal-based techniques to evaluate a cohort of 56 case studies and also applied a statistical evaluation to sales in the Aspen Valley Ranches subdivision in Jefferson County.

The case study approach to the BPA-Colstrip 500 kV line found cases in which the adverse impacts to parcels in rural residential subdivisions from the line exceeds what might be expected based on earlier research, while the statistical analysis of the Aspen Valley Ranch showed an average impact of 15 percent devaluation within 1000 feet of the line. The average masks significant variation, with some properties suffering much larger losses in value. Chalmers found little to no sensitivity to price impacts within production agriculture and amenity-influenced agricultural properties. However, his work emphasizes the strong influence of location- and property-specific concerns on the relationship between the presence of a high voltage overhead transmission line and market response.

The Chalmers study concerns the effects on raw land values many years after the construction of the line. It was not designed to capture the market response associated with the potential initial stigma of a transmission line proposal. There is some limited evidence in other research that market impacts can be

⁴ The panel included Kevin Pearce, Appraiser and Owner of New Frontier Ranches, Twin Bridges, MT (<http://www.newfrontierranches.com>); Katie Ward, Broker in Sheridan and Missoula (<http://www.propertyinmontana.com>), Vana Taylor, Broker in Bramlette & Co in Dillon, MT (<http://www.bramlettecompany.com>), and Sarah Bauer, Broker in Helena and Boulder, MT (<http://www.mymontanahome.net>). The panel was covered in an April 18, 2011 news report in the Montana Standard which in Appendix 1.

greatest during the siting and construction period—anecdotal information from real estate professionals in southwestern Montana suggest that this trend may be playing out in the current MSTI situation.

The research can inform the siting process for MSTI in several ways. The findings provide solid reasons (among many others) to separate industrial features like a transmission line from residential land uses, especially small lot subdivisions. While the sales data do not provide any evidence of adverse price impacts to production agricultural parcels in eastern and central Montana, interview data substantiate the imperative to locate towers at minimally intrusive locations within existing agricultural operations, especially irrigated, plowed, or otherwise mechanically managed fields. The challenges in using market response to document impacts to agricultural lands where market value is affected by recreational and other amenities is evident in the Chalmers study. These difficulties reveal important information gaps that may suggest a need for further analysis. In the absence of further conclusive research, the siting process will continue to demand discussions with landowners and communities about perceived impacts and how best to mitigate them in the event that the project is permitted.

Approaches to Property Value Impact Analysis

The research summarized in this brief is geared toward conclusions about the size and nature of the impact to property value from high voltage transmission lines. This can be done through several accepted methods that are described below.

It must be noted that the analysis of trends in real estate sales and/or survey data is not the same as assessing costs to an individual landowner. There are costs associated with the permitting, construction, and operation of a new high voltage overhead transmission line in a right of way on private property that are unique to each property. Professional real estate appraisal is the only appropriate way to assess impacts, or potential impacts, to individual properties.

One contribution of published research into groups of properties is to help identify circumstances that make properties vulnerable to a loss in cash value due to the intrusion of a transmission line, but the research findings are not a substitute for property-specific appraisals. Nor do market values necessarily describe the full range of concerns and perceived costs experienced by some affected property owners.⁵

Research Overview

A number of useful summaries of the property value impact literature discuss the following points in much more comprehensive detail.⁶

Transmission line property value research seeks to understand whether the presence of a high voltage overhead transmission line on or near a property affects the market value of the property at all, and if so how much, for how long, et cetera.

⁵ Although dated, a 1988 article provides a good synopsis of the gap between what is compensable and what property owners perceive as costs: Furby, L., et. al. (1988). Electric Power Lines, Property Values, and Compensation. *Journal of Environmental Management*, 27, 69–83. See also: Schutt, A. J. (1996). The Power Line Dilemma: Compensation for Diminished Property Value Caused by Fear of Electromagnetic Fields. *Florida State University Law Review*, 24(125): 125-160.

⁶ Kroll, C. A. and Priestly, T. (1992). The Effects of Overhead Transmission Lines on Property Values. *Report to Edison Electric Institute Siting & Environmental Planning Task Force*. Priestly, T. (2009). *Transmission Lines and Property Values: Review of the Research and Summary of Key Findings* (Vol. Appendix c.7.2 to the 2010 Draft EIS, MSTI). Jackson, T. O., & Pitts, J. (2010). The Effects of Electric Transmission Lines on Property Values: A Literature Review. *Journal of Real Estate Literature*, 18(2), 239–259.

There are two major sources of data that have been explored by researchers. One is data provided through interviews and mail surveys. These types of studies have explored the attitudes of property owners and the public towards transmission lines as well as what real estate professionals and property owners perceive the market impact of high voltage transmission lines to be.

Many more studies focus on market transactions involving properties affected by transmission lines—including those adjacent to transmission line corridors, those encumbered by easements, and those nearby or with a view of transmission lines. Depending on the quantity and quality of sales data and other circumstances, market impacts of transmission lines on property values can be analyzed through appraisal techniques and or by statistical methods.

Appraisal techniques, namely the comparison sales approach, look for differences in market performance of properties affected by high voltage overhead transmission lines to otherwise comparable properties not affected by a transmission line. Criticisms of the comparison sales approach have to do with the influence of an author's expert judgment in locating and refining a set of comparable sales for analytical purposes. The implication is not so much that another appraisal would come to different conclusions, but rather that the choice and manipulation of comparables could influence the finding of price impact. This makes peer-review and publication in professional and academic journals an important threshold for credibility of comparison sales studies.⁷

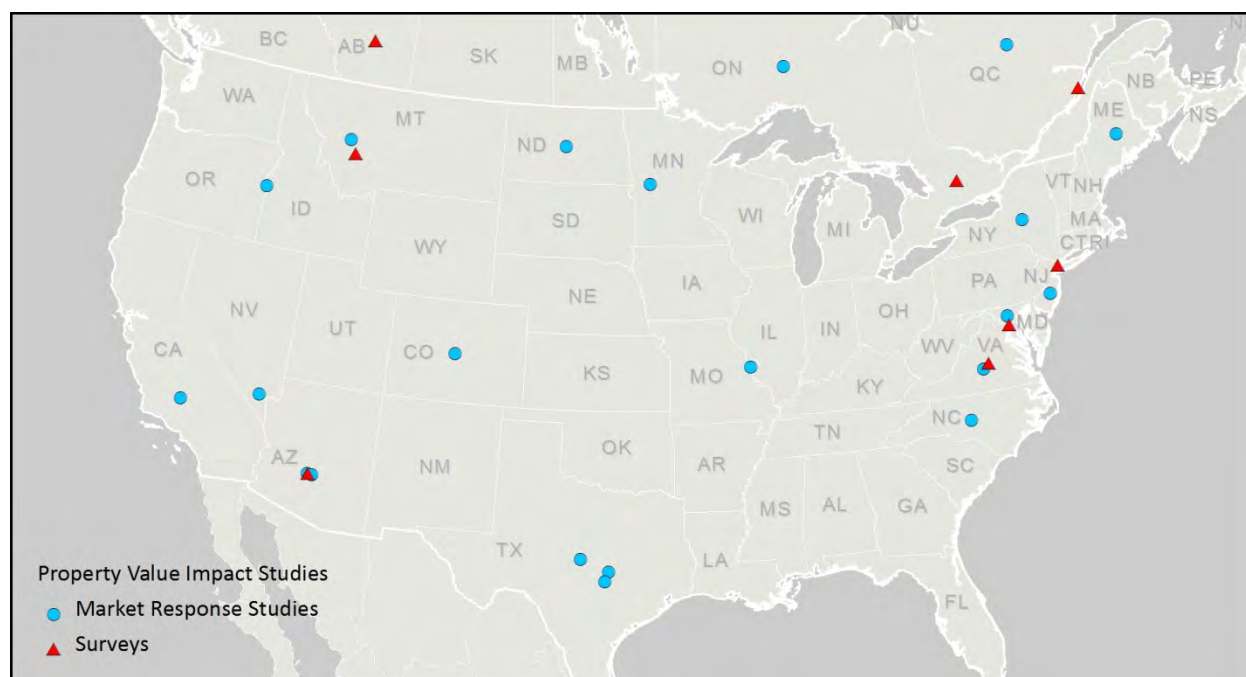
Lastly, there is an increasing focus in the published literature on the use of statistical analysis of large cohorts of sales data. Statistical techniques such as multivariate regression analysis can effectively isolate the influence of high voltage overhead transmission lines on property value from a number of factors that can affect market performance. It can be difficult to find a database of the size and quality necessary for rigorous statistical analysis. And statistical evaluations by design look for significant patterns and exclude outliers that don't fit those patterns. This introduces a risk of underemphasizing or failing to address unusual cases that may still be relevant to assessments of property value impacts from transmission lines.

Map 1 gives an overview of the location and approach of studies of property value impacts conducted in the United States that have been cited by major literature reviews (full citations of all titles are included in the bibliography). As the map suggests, the majority of published research on the impacts of high voltage overhead transmission lines concerns residential property in metropolitan and suburban areas, with only a handful of studies devoted to other property types such as agricultural, vacant, and recreational.⁸ The amount of research interest in the subject over time tracks closely with proposals for new transmission line construction activity.

⁷ An indication of this is the following quotation from an article in *Right of Way* magazine, a professional journal: "Appraisal professionals use a systematic approach, but they realize that the appraisal of real estate is an inexact science. ...[s]ome subjective and judgmental elements may find their way into an appraisal report. Appraisals focusing on transmission line impact are unusually complex, and when insufficient market data is available, the valuation process can become somewhat arbitrary." Rigdon, G. J. (1991). 138 Kv Transmission Lines and the Value of Recreational Land. *Right of Way*, December 1991: 8-18, 15. Retrieved May 11, 2012, from <http://www.irwaonline.org/eweb/upload/1201a.pdf>.

⁸ Not surprisingly, utilities are often the sponsors of transmission line property value impact analysis. For those suspicious of bias in favor of the research sponsors, studies published in professional or academic journals that were peer-reviewed by a community of qualified experts prior to publication can be considered more credible.

Map 1. Study Areas of Research on Property Value Impacts from Transmission Lines



Shows studies dating from the mid-1970s onward. Sources of citations are: Kroll and Priestly, 1992; Priestly, 2009; and Jackson and Pitts, 2010.

Generalized Findings

One observation of available research and previous summaries of that research is that the results have been as mixed as the study approaches and their diverse locations. That said, taking in the whole body of research, most summaries note that negative property value impacts (as measured in market transactions) tend to be smaller in size, extent, and duration than might be expected. For example, a recent summary observes: “The studies reviewed [published empirical research from 1964 to 2009]... generally pointed to small or no effects on sale price due to the presence of electric transmission lines. Some studies found an effect but this generally dissipated with time and distance. The effects that were found ranged from approximately 2% to 9%.”⁹

The explanation offered by researchers for the lack of an effect on price commensurate with the negative perceptions of landowners is basically that in most real estate transactions, numerous factors affect buyer decisions and can often outweigh the stigma of a high voltage overhead transmission line. Writing in a frequently referenced study that first appeared in 1967, William N. Kinnard, wrote: “Proximity to a tower line is not nearly so important to buyers as are other locational or amenity considerations.” This assessment has been echoed in numerous subsequent assessments of the literature.¹⁰

⁹ Jackson, T. O., & Pitts, J. (2010). The Effects of Electric Transmission Lines on Property Values: A Literature Review. *Journal of Real Estate Literature*, 18(2), 239–259: 258.

¹⁰ For example, Kroll and Priestly’s summary of the literature quotes Des Rosiers: “In short, most studies conclude that proximity to a HVTL per se does not necessarily lead to a drop in the value of surrounding properties and that other physical as well as neighborhood variables prevail in the price determination process.” Des Rosiers, F. (2002). Power Lines, Visual Encumbrance, and House Values: A Microspatial Approach to Impact Measurement. *Journal of Real Estate Research*, 23(3): 275-302, 277. (Publicly Available. Retrieved May 11, 2012, from <http://ideas.repec.org/a/jre/issued/v23n32002p275-302.html>). Quoted in Priestley, 2009: 32.

However, there have been very few tests of these conclusions in rural environments, let alone rural Western landscapes. Prior to the publication of Dr. Chalmers' research on the Colstrip-BPA line, there were no peer-reviewed studies of property value impacts from high voltage transmission lines anywhere in the rural West. Several appraiser-directed studies of rural and unimproved land in western states conducted in the 1970s and 1980s are briefly noted in a 1992 review of the literature by Priestly and Kroll, but the reports were typically conducted as reports to utility companies and are not readily available. According to the summaries of these reports provided in Priestly and Kroll's review, the few appraisal studies of transmission line impacts on sales of agricultural and rural properties in western states that utilized sales data (as opposed to interview data) showed little to no effect on price from transmission lines beyond the loss associated with the right of way acreage.

Exceptions from other areas are noted in the Priestly and Kroll literature review. A comparison sales study of farmland in Minnesota completed in 1982 found cases of zero price effect as well as negative impacts as high as 20 percent in situations where the transmission lines were highly intrusive on farm operations.¹¹ Another study in rural Alberta that considered agricultural land sales during the period 1976 to 1981 found a decrease in property values from the presence of multiple lines (64 kV and 240 kV), especially in land with irrigation potential.¹² A very recent study of sales of rural land parcels in central Wisconsin during the period 2002-2008 found small, but not statistically significant negative price effects on the sale of properties encumbered by a transmission line easement.¹³

Note: Costs to Agricultural Operations

The property value impact literature is concerned with costs to agricultural operations primarily in terms of their relationship to market price. Technical assessments of operation costs associated with transmission lines for different types of farming properties may be produced as part of the environmental permitting process. A report prepared for the Department of Environmental Quality in conjunction with the proposed Montana-Alberta Transmission Line provided estimated ranges of annual costs associated with transmission structures in "typical" dry land and irrigated farming operations in north-central Montana.¹⁴ More recently, a professional agronomist has completed a technical agricultural impact analysis for south central and southeastern Idaho in conjunction with the EIS process for the Gateway Transmission Line Project that estimates impacts to rotational crop production including: one-time costs

¹¹ Jensen, G. A. and Weber, W.V. (1979). Study of Farms and Sale of Farms Having High Voltage Powerline Crossings Located in Municipalities of Roster, Woodlands, Rockwood, Manitoba Province, Canada. Luverne, Minnesota: Jensen Management Service, Inc. Cited in Kroll and Priestley, 1992: 19.

¹² Thompson, R. R. 1982. The Impact of High Voltage Electric Transmission Lines on Agricultural Land Valuation in Alberta. Master of Science Thesis, Department of Rural Economy, University of Alberta. Cited in Kroll and Priestley, 1992: 44.

¹³ Jackson, T. (2010). Electric Transmission Lines: Is there an Impact on Rural Land Values? *Right of Way*, (November/December), Publicly Available. Retrieved May 11, 2012, from <http://www.real-analytics.com/Transmission%20Lines%20and%20Rural%20Land.pdf>. A rebuttal to challenges to the article is subsequently printed as: Jackson, T. (2011). Electric Transmission Lines and Rural Land Values: A Closer Look. *Right of Way*. Publicly Available. Retrieved May 11, 2012, from http://www.irwaonline.org/eweb/upload/web_may_11_ElectricTrans.pdf. The study methodology does not describe the nature of the land use on the properties considered (88 sales in various locations in central Wisconsin, affected by different transmission lines).

¹⁴ HydroSolutions, Inc. and Fehringer Agricultural Consulting, Inc. (2007). Farming Cost Review (Final) Montana Alberta Tie Limited. Prepared for Montana Dept. of Environmental Quality and featured as

of disturbances from construction per acre as well as annual costs on a per tower basis. Results of that study will not be made public until the final EIS is released.¹⁵

A related question is how easements associated with the Conservation Reserve and other federal Farm Bill-related programs could be affected. Each program has different stipulations for enrollment regarding affected land. In reality each situation will be unique to the property and the program under which it is enrolled. In the case of imposition of a new power line on acreage enrolled for Conservation Reserve Program rental, some portion or all of the acreage affected by the transmission Right of Way could lose eligibility, but not the remainder of the property. The Wildlife Habitat Improvement Program (WHIP) has a large focus on sage grouse habitat protection in Montana and Idaho, suggesting it could be incompatible with overhead transmission lines.

There are a few studies that have looked explicitly at recreational rural property with mixed results. Two separate studies in the Upper Midwest failed to find statistically significant impact of transmission lines on the sales of recreational rural properties in the 1980s.¹⁶ In contrast, a study examining the impact of the 735 kV line in Hydro Quebec on recreational land in Quebec found that proximity to and view of a line exerted a statistically significant negative effect on the value of second home lots—in instances up to 34 percent—during the period 1965-1981. Priestly's summary notes that "Smaller parcels are affected more severely than larger parcels."¹⁷ Curiously, the same study also reportedly observed a positive price effect from encumbrance with a transmission line easement.

In all, there are some general conclusions that have been drawn from the existing literature, but when it comes to rural properties the findings have not been especially conclusive to date. Few studies offer insights that can be safely applied to the types of rural landscapes found in southwestern Montana and southern Idaho. Chalmers' recent research on the Colstrip-BPA 500 kV line in Montana was conducted in response to this shortage of information.

Property Value Impacts from the Colstrip-BPA 500 kV Line in Montana

Nearly 600 miles of 500 kV line stretch across Montana running from Colstrip in the southeast corner of the state west to the state border near Taft. Chalmers' research reports on sales dynamics involving properties within 500 feet of the centerline of the Colstrip-BPA line that sold between 2000 and 2010. Chalmers identified 74 unique transactions meeting these parameters and was able to analyze 49 transactions in detail, along with additional data covering sales in 8 rural subdivisions. Chalmers examined the impacts of the 500 kV line on property sales by using a comparison sales appraisal approach to find market effects and also interviews of buyers and sellers whenever possible. Sales trends are reported for seven property types: Production Agricultural Lands, Agricultural Lands with Recreational Influence, Agricultural Lands with High Amenity Recreation and Natural Features, Rural

¹⁵ Schneider Consulting Services (2012). Agricultural Economic Impact Analysis South Central and Southeastern Idaho Gateway West Transmission Line Project. Manuscript provided to cooperating agencies upon request to Walt George, BLM.

¹⁶ Solum, C. L. (1985). Transmission Line Easement Effect on Rural Land in Northwest Wisconsin. *Right of Way*, April 1985. Retrieved May 11, 2012, from <http://www.irwaonline.org/eweb/upload/0485.pdf>. Rigdon, 1991.

¹⁷ Université du Québec à Montréal. 1982. Impact de l'implantation des lignes de transport d'énergie hydro-électrique sur les valeurs foncières des sites de Villegiature. Project Hydro-Québec HA-596-507. June. Title translation: Impact of the establishment of hydroelectric transmission lines on the property values of second home lots. Cited in Kroll and Priestly, 1992: 44.

Residential Subdivision with lot sizes under 5 acres, Rural Residential Subdivisions with lots sizes over 5 acres, Large Acreage Rural Residential Tracts, and Rural Residential Tracts/Cabin Sites.

In addition, the research delved into some detail to understand the impacts of transmission lines on rural residential subdivision property sales by looking at the full history of sales of rural residential lots in several subdivisions (e.g., every transaction from the date of plat). A full statistical analysis was conducted on sales of parcels in Aspen Valley Ranches, a rural subdivision in Jefferson County that was platted in 1985. In addition, the study applied a comparison sales and interview approach to seven subdivisions in Sanders County located within a 500 kV transmission corridor running east-west from Hot Springs to Taft that parallels the Clark Fork River Valley.

In all cases examined by Chalmers, the 500 kV line and associated easement was in place at the time of purchase and in the case of subdivisions, at the time of original plat. For the majority of the properties studied, the line had been present for over twenty-five years.

The research findings are reported in three ways.¹⁸ A complete research report with detailed data on individual transactions is available, and two peer-reviewed articles have been published. *The Appraisal Journal*¹⁹ published the findings from the comparison sales and interview methodology in its winter 2012 issue under the title “High-Voltage Transmission Lines and Rural, Western Real Estate Values.” An article in the magazine *Right of Way*²⁰ documents the results of multiple regression analysis of sales trends in Aspen Valley Ranches.

The findings are summarized briefly below.

Production Agriculture Lands

Chalmers reports on 19 transactions affecting properties with production agriculture—the dominant land use located within 500 feet of the Colstrip-BPA line. The properties were characteristic of farm and ranch land in eastern and central Montana, typically featuring a mix of native range and dry cropland, with a few instances of irrigated land and improved pasture. Chalmers provides interview material indicating that while the transmission lines presented nuisance factors—especially for farming operations, neither the interviews nor the sales data indicate that the nuisance translated to an impact on sale price.

Agricultural Lands with Recreational Influence and Agricultural Lands with High Amenity Recreation and Natural Features

Chalmers analyzes three transactions involving agricultural properties with some recreational influence and three transactions involving agricultural properties with significant amenity or recreational influences. This cohort has particular relevance for the Montana counties affected by the MSTI proposal, where agricultural land often has significant recreational and amenity influences. Sales data were available for five of the transactions. Chalmers did not find evidence of a price effect from the presence of a

¹⁸ Chalmers, J. A. (2012a). *High Voltage Transmission Lines and Montana Real Estate Values*. Available from NorthWestern Energy. Retrieved May 11, 2012, from <http://www.northwesternenergy.com/documents/ElectricTransmission/HighVoltageFinalReport.pdf>. Chalmers, J. A. (2012b). High-Voltage Transmission Lines and Rural, Western Real Estate Values. *The Appraisal Journal*, Winter, 2012: 1-16. Available from NorthWestern Energy. Retrieved May 11, 2012, from <http://www.northwesternenergy.com/documents/ElectricTransmission/HighVoltageValues.pdf>. Chalmers, J. A. (2012c). Transmission Line Impacts on Rural Property Values. *Right of Way*. May/June 2012: 32-36.

¹⁹ *The Appraisal Journal* is published by the Appraisal Institute, a professional appraisal organization. *The Appraisal Journal* publishes research of interest to professional appraisers, written by appraisers and academics. Manuscripts are reviewed by a panel of professional or academic peers depending on their focus.

²⁰ *Right of Way* is a magazine published by the International Right of Way Association, a professional organization.

transmission line in the study properties, although in two cases the sellers who were interviewed felt strongly that the transmission line had had an adverse effect on the sale of the property.

This conflicting evidence in one example from the Agricultural Land with High Amenity Recreation and Natural Features merits attention because it helps to demonstrate how appraisal-based market analyses work. The property in question is a 350-acre parcel in central Broadwater County with Missouri River frontage sold without improvements in 2006. The Colstrip-BPA 500 kV line travels through the middle of property and is visible from most areas of the property. The amenities unique to the property include the river frontage, wildlife habitat, and presumably an open, scenic character (although this has to be inferred from the notes in Chalmers' report and basic knowledge of the area). Chalmers interviewed the seller, the buyer, and a former operator of the property with real estate expertise and also consulted market data.

Chalmers' interviewees provided a host of subjective information about impacts from the transmission line and other features of the property affecting its sale. The seller reported showing the property an estimated 25 to 30 times, stated that the transmission lines were always an issue with prospective buyers, and estimated the loss from the transmission line in terms of potential sale price in the absence of transmission line at 25 percent. The buyer, despite reporting many current frustrations with the transmission line, is noted as saying, "I looked at it [the 500 kV line] and felt it wasn't that bad."²¹ The former operator who spoke to Chalmers suggested the marketing period for the property was not exceptional and disputed the seller's comment that a price concession was made in the final negotiation. The notes provided on the former operator's comments suggest that the property was possibly a second-tier amenity property with less competitive fishing and hunting amenities and low potential for rural subdivision.

Chalmers compares the sale of this property on an adjusted price per acre to two comparable sales in the area of properties with similar features but no transmission line. The per-acre price falls between the per-acre price of the two comparable sales. Based on this data, there is no evidence of a significant price impact from the line.

This case study highlights the potential for a wide gap between subjective reports of property value loss and what market data capture. There are at least two ways to think about this. A critical view would point out the significant challenges associated with identifying comparable sales and accurately adjusting per-acre prices for seven large, highly unique recreationally-influenced agricultural properties. These challenges—and the lack of transparency in the actual calculations and choices within the comparison sales methodology—could raise questions about the reproducibility of these findings and by extension their conclusiveness.

Another interpretation is that offered by Chalmers: the larger the property and the more diverse its attributes, the less likely the transmission line is to significantly affect price. It is likely that both assessments of these kinds of conflicts between subjective information about price and market effects, and appraisal-based sales comparisons, have some merit; they are not necessarily exclusive.

Rural Residential Subdivisions

In describing market effects on rural residential subdivisions in the categories of lots smaller than 5 acres and lot size greater than 5 acres, Chalmers reports on twelve different data points—five are individual lot sales and the remaining seven are groups of all available lot sales of individual subdivisions since the date of plat. All but one example were supported by sales data. These data show the strongest evidence of price and "absorption" effects. Three of six cases of small lot (<5 acres) subdivisions showed evidence of

²¹ Chalmers 2012c: 5-4.

a price impact, in one case as large as 50 percent, and two had significant absorption effects.²² In three of six cases of rural residential subdivisions with lot sizes larger than 5 acres there was evidence of price impact of up to 25 percent, and evidence of an extending marketing period for affected lots.

Assessing these data, Chalmers makes the point that the design of a subdivision, the nature of the topography, and the layout of the transmission line all work together to affect how easily the intrusion of the line is mitigated. The smaller the opportunity to mitigate the intrusion of the line on individual residences, the greater the measured impact on price and market value is.

Aspen Valley Ranches

A separate statistical analysis was performed on lot sales in Aspen Valley Ranches, a rural subdivision with 156 separate 20-acre (+/-) lots and bisected by the Colstrip-BPA 500 kV line. In all, 183 sales of unimproved lots between 1986 and 2010 were included in the analysis, which involved rigorous testing of factors such as lot size for their influence on sales price. The statistical analysis indicates an average discount of 15 percent in the sale price of the lots within 1,000 feet of the center line of the 500kV line. Chalmers did not identify a delay in marketing time of the lots near the 500 kV line. He attributes this to a pricing schedule that “must have been a fair reflection of the market’s evaluation of the relative strengths and weaknesses of the individual lots.”²³

Large Rural Residential Tracts and Rural Recreational Tracts/Cabin Sites

Chalmers also presents findings for two eclectic property types. Sales data were available for three of four transactions involving large rural residential tracts (ranging from 60 to 591 acres in size with seasonal or year-round use). Although Chalmers acknowledges that transmission lines likely result in a thinning of the buying pool for these properties especially when they are conspicuous, he does not find any evidence of price effects in comparable sales analysis.

Sales data were available for 10 of 14 transactions involving cabin sites and other recreationally-focused small properties, mostly in western Montana. Chalmers finds inconclusive evidence of adverse price impacts on 3 of the 14 transactions but on the whole observes that buyers of recreational land approach their purchase with very different criteria than residential buyers. In his words, accessibility and “the unique recreational character of the site will frequently dominate considerations relative to the transmission lines.”²⁴

Implications for Evaluating the Proposed MSTI Line

With regard to those circumstances that may affect vulnerability to transmission line impacts in rural settings, Chalmers suggests three general principles based on his study of the BPA line:

1. When a property’s sole use is residential, its vulnerability to price impacts from a transmission line increases.
2. As property size increases, vulnerability to negative market impacts from a transmission line decreases.
3. If substitutes are available, vulnerability to price impacts and marketing delays can increase.

Although extents vary, price impacts and market delays associated with the 500 kV line on small rural residential parcels are clearly noted in the Chalmers study. This has implications for existing rural

²² See summary table, Chalmers 2012b: 10.

²³ Chalmers 2012b: 36.

²⁴ Chalmers 2012: 14.

subdivisions—to the extent that lost property value is a criteria in a siting decision on the part of permitting agencies, these are the first properties to avoid.

The strength of this signal has implications for future development as well. Non-contiguous development patterns often eliminate options to separate land uses effectively. Designated energy corridors on public lands ideally would recognize vulnerable property types on adjacent private land and avoid them. That said, Chalmers' study and other research suggest that subdivision development can be planned in ways that minimize the intrusion of a 500 kV line and by extension the scale of property devaluation. The rural residential parcels that suffered the greatest devaluation in Chalmers' study tended to be those with few opportunities to mitigate the impact of the line on individual parcels due to the design of the original plat.

Production agriculture properties including cropland, pasture, and dryland farming dominate the private property landscape in the majority of the Idaho counties potentially affected by MSTI. While the sales data do not provide any evidence of decreased market competitiveness of production agricultural parcels in eastern and central Montana counties within 1,000 feet of the centerline of the Colstrip-BPA 500 kV line, interview data confirm a large nuisance factor for agricultural operators. These findings and other studies confirm the obvious imperative to locate towers at minimally intrusive locations within existing agricultural operations, especially irrigated, plowed, or otherwise mechanically managed fields.

Agricultural properties with highly varied levels of amenity, development, and recreational influences dominate the private property landscape in southwestern Montana. Property value impact research including the Chalmers study does not support the suspicion that this type of property is especially vulnerable to adverse price effects from the presence of a transmission line. On the other hand, evidence of a lack of price impact is presently limited to the lack of an observed per-acre price impact in the seven case studies developed in the Chalmers report. This suggests that much more information is needed before it will be possible to forecast the range of property value impacts from MSTI with any certainty.

There are indications from previous research that the negative price impacts and the stigma of a transmission line development are greatest at the time when the project is being developed and proposed. One implication of this relative to the Chalmers research is that by focusing on a line that has been part of the landscape for several decades, the study might underestimate market impacts relative to the ten-year period of permitting and (possible) construction when the route is initially uncertain and the line is the subject of controversy, and later when construction impacts are greatest.

The Chalmers study may be frustrating for stakeholders in the MSTI siting process seeking timely data that affirms their professional and personal experiences from the impact of the MSTI proposal. Realtors associated with the panel held by the MSTI Review Project as well as others active in southwestern Montana have attested to a marked impact of the proposed project on real estate sales activity over the past four years.²⁵ One concern is that “top tier” buyers won’t consider recreational properties affected (or potentially affected) by a transmission line. In addition, two realtors at the panel indicated that the MSTI proposal has kept sellers from putting properties on the market and has frozen certain real estate development proposals.

One real estate appraiser has proposed that Chalmers could have studied the effects of the Colstrip-BPA line at the time of permitting. See the letters in Appendix 1 for this proposal and Chalmers' response that data availability would be a problem.

²⁵ See Appendix 1.

As the discussion above seeks to point out, capturing present trends associated with MSTI in reliable market data could be very challenging. For example, the loss of “top tier” buyers could only be quantified in a price impact if, when a property was sold, it sold for a per-acre price significantly lower than comparable properties. There are a few obvious challenges in attributing the share of the slowdown or loss of value that can be legitimately attributed to the MSTI project proposal. The first is that the timing of the MSTI proposal coincides with the recession. The recession brought a major slump in the demand for rural land for development purposes. Isolating the MSTI impact within this larger trend could be extremely challenging. Doing this credibly would mean locating areas with similar real estate offerings and no transmission proposals in order to make meaningful comparisons. There are a couple of challenges in locating areas and properties for comparison. The first is that the proposal involves so many different potential routes that there are relatively few unaffected areas in southwestern Montana. The second is that when it comes to high amenity large ranch properties, the volume of properties on the market has been low.²⁶

Altogether, established quantifiable evidence of a clear market response to the MSTI proposal would be a formidable exercise in scope that may not yield conclusive results. Here, a survey-based methodology could be useful to help gather and assess the reported concerns from those active in the real estate market in areas affected by the MSTI proposal in Montana and Idaho. If surveys of real estate professionals and buyers could help to clarify the specific concerns about the proposal, this may provide information of value to the siting process.

Conclusions

Stakeholders in the permitting process for the MSTI proposal may be frustrated by the research on property value impacts from high voltage overhead transmission lines.

On the one hand, there is a large body of peer-reviewed evidence that suggests that property value impacts—measured in actual sales of properties affected by a transmission line easement to those that are not—often do not register, and when they do, they are relatively small. Few of these studies address the types of property in the area affected by MSTI in Montana and Idaho which includes rural residential subdivisions, production agriculture, and recreationally-influence agricultural land.

On the other hand, there are case studies and appraisal reports that occasionally find very large impacts on sales price and or time on the market. This includes recent market research about dynamics of land prices on properties located adjacent to the Colstrip-BPA line in Montana in the period 2000-2010. That study identified some dramatic impacts on rural subdivisions with small lots and poor plat design in terms of minimizing the impact of the transmission line to particular parcels. The same report did not find evidence of transmission line impact on sales involving production agricultural properties and based on a small number of case studies found no impact on the sales of recreationally-influenced agricultural lands from the presence of the Colstrip-BPA line.

The absence of a market impact on recreationally-influenced agricultural properties conflicts with the experience of some area real estate professionals who have spoken about their experiences selling property in the MSTI study area in southwestern Montana. It is possible that more detailed market research on recreational property sales involving transmission line proposals or installed transmission lines could help to clarify these conflicting conclusions. However, given the limits on available data and

²⁶ A good overview of the recent dynamics of Montana rural real estate markets is provided by Bozeman-based appraiser Clark Wheeler in his online report, “General Market Conditions and Sales,” June 2011. <http://www.normancwheelerandassociates.com/market.html>

study design it is likely that it may not be possible to develop quantifiable, conclusive information about the market response to high voltage transmission lines within this cohort of properties.

Despite these information challenges, there are some common-sense conclusions that can be drawn. From a broad permitting perspective, a general observation is that when property value impacts occur, they tend to be negative. Impacts to any type of property are highest when the impact of the line on the property's use cannot be mitigated. From the perspective of a siting process seeking to minimize risk of lost property value (as one of a many factors considered), there is credible data suggesting that small-lot rural residential subdivisions face high risk as a class of properties. For larger properties, it is difficult to predict impact without specifically considering how the siting of the line would affect the use of the property. Formal appraisals are the only appropriate mechanism to assess impacts to individual properties.

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Appendix 1. Realtor Perspectives

April 18, 2012 report on Panel on Chalmers Research held at Montana Tech.

Apr 18, 2012 (The Montana Standard - McClatchy-Tribune Information Services via COMTEX) -- Major power lines overall have a limited impact on property values, but also can lower the value of some smaller parcels as well as driving up the time it takes for them to sell.

That was among the conclusions that Jim Chalmers, Ph.D, an economist, presented Tuesday at Montana Tech during a talk put on by the MSTI Review Project. The collaborative group made up of county commissioners and nonprofit groups is studying NorthWestern Energy's proposed 500 kV power line.

Chalmers said overall the effects were less, yet he cautioned that his study used an existing high-power line in Montana that has been around for 30 years. And buyers consider that when looking at a property.

"You knew exactly where the line was, you knew how high the towers were going to be," he said. "In the studies we did, the buyer chose that property; in this case the property owner had the line imposed on them."

The Mountain States Transmission Intertie, or MSTI, is proposed to be built from near Townsend and run through southwest Montana to southern Idaho. The line has caused a heated debate and some landowners have spoken out with concerns that it will lower their property values.

Chalmers led the study that looked at a similar 500 kV line running across Montana. The study came to three main conclusions: the more a property was for residential use, the more likely it was to lose value; smaller parcels were more prone to see a lower value; and properties with a similar parcel available for sale were more vulnerable to see a value reduction.

But he said with larger ranches, the study found no effects on the price of the property.

That drew criticism from a panel of real estate agents.

Kevin Pearce, a broker-owner with New Frontier Ranches in Twin Bridges, said the study only addressed an existing line and didn't consider the effects during construction of a power line. He said the presence of a power line can completely shut out some buyers.

"A top-tier buyer is not going to be interested, period," he said. "Then you're going to be left with a second-tier buyer and a reduced price."

Pearce said what's needed is a study specific to MSTI.

And Katie Ward, a broker with her own company in Sheridan and Missoula, said buyers often ask for properties without power lines even on the larger tracts.

"In this economy, people have choices, even with the bigger properties," she said.

The brokers agreed that the uncertainty of where MSTI will be built has spooked some buyers. In one case in Beaverhead County, a proposed subdivision was dropped over those concerns, said Vana Taylor, a broker with Bramlette and Co. Realtors in Dillon.

"We really can't put a price on it because we don't know where it's going to be located," she said.

Jefferson County Commissioners Leonard Wortman and Tom Lythgoe said their preference is that MSTI get built on public land so it doesn't affect private property values.

"We shouldn't be messing up the current owners, property values and viewsheds," Lythgoe said.

But Ted Williams, an engineer with wind energy company Gaelectric, said if that's done, the project would be delayed up to a decade because groups would fight it.

"All of these efforts to put it on public land are just an effort to kill the line," he said. "It simply won't get done because it will take too long."

-- Reporter Nick Gevock may be reached at nick.gevock@mtstandard.com

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ANOTHER VIEW OF HIGH VOLTAGE TRANSMISSION LINES

Kevin T. Pearce, ARA

Letter to the editor submitted to local papers and to the The American Society of Farm Managers and Rural Appraisers (ASFMRA). Received by MSTI Review Project via e-mail, May 20, 2012.

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The recently completed report “High Voltage Transmission Lines and Montana Real Estate Values” by James A. Chalmers, Ph.D. was carried out under contract to Northwestern Energy (NWE) during 2010 and 2011. Northwestern Energy is proposing to construct a 500 kV High Voltage Transmission Line (HVTL) from Townsend, Montana southerly some 450-500 miles across southwestern Montana to near Twin Falls, Idaho to deliver Montana-generated power to possible users in the western US. This proposed line is identified as the Mountain States Transmission Intertie line (MSTI). The Chalmers report was commissioned by NWE to be used to study the effects of HVTL on real estate values as an aid in the process of planning, permitting, and siting the proposed MSTI power line.

The Chalmers report considered the effect of a HVTL on real estate values by studying the 650+/- mile route of a 500 kV line extending from Colstrip, MT westerly across Montana to the Idaho/Montana border. This power line was constructed in the early 1980's. The report, however, utilized sales data from “arms length” transactions that occurred in the year 2000 through 2010 on properties within 500 feet centerline of the 500kV line.

Seven different property types were identified in the Chalmers report across Montana that was analyzed through paired-sales and before and after analysis. This report leads the reader(s) to a conclusion that there is very little, to no effect on real estate values due to HVTLs. This might be expected since this report studied the effects of the power lines 30+/- years **after** construction of the power line. After 30 years, the lands affected by the power lines have healed and become a part of the accepted landscape. Also, for the majority of the study period (2000-2010), the Montana real estate market was appreciating rapidly and in many areas, a buying frenzy was occurring which left few substitute and alternative properties that forced buyers to accept properties containing HVTLs (when in most other markets they would not consider) and purchase them at or near par as compared to those without HVTLs.

While I do not necessarily disagree with the results of this report within the context of the scope of work and parameters of the project, I do not believe that this report accurately depicts the effects of HVTLs on real estate values at the time of planning, permitting, construction, or immediately after construction of a HVTL. This report is not relevant or applicable to the proposed MSTI project and its effect on current real estate values.

Studies of market data considering the effects of fire, flood, and other occurrences indicate that there is a considerable negative affect on land values at the time of and immediately after their occurrence. To accurately depict the true effects of HVTLs on real estate values at the time of a new HVTL's permitting, siting, and construction, a study of sales data consistent and contemporaneously with the planning, construction, and immediately following construction should be utilized rather than transactions occurring 30 years after construction.

Response to “Another View of High Voltage Transmission Lines”

James A. Chalmers, Ph.D.

Letter provided to the MSTI Review Project, 5/30/2012 and submitted to local newspapers.

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High Voltage Transmission Lines and Montana Real Estate Values: Final Report (the “Chalmers Study”) was presented at a public forum at Montana Tech in Butte on April 17 of this year. This report is available at _____. Presentation of the study was followed by comments from a panel of real estate professionals including Mr. Kevin Pearce, ARA of Twin Bridges. Mr. Pearce made comments at that time which he followed up with a letter that was published in the *Dillon Tribune* on May 23, 2012 and the *Madisonian* on May 24, 2012.

At the most general level, his point is that the effects on the real estate market and property values during the siting and construction period of a transmission line may be different from the effects once the line is constructed. I agree with this proposition. However he goes on to argue that our study of an established transmission line has no relevance to the proposed MSTI project and its effect on current real estate values. In so doing, his representation of both the purpose of our work and its findings merit clarification. Finally, he offers an opinion with respect to the longer term effects of transmission lines that deserves brief discussion.

Mr. Pearce says that our study was commissioned by NorthWestern Energy “....as an aid in the process of planning, permitting and siting of the proposed MSTI power line.” That’s not correct. The study was conceptualized from the outset as an analysis of the effects of Montana’s only existing 500kV line on the value of the various property types that it crossed or was close to. The basic question was once a line was built and buyers and sellers were fully informed with respect to its location, its visibility, etc. what were the implications for the value of affected properties. Given the interest in development of renewable energy sources in Montana, and proposals for new transmission facilities emerging as a result, NWE had a broader interest in understanding how rural land uses may be affected by HVTL’s in general. The study was motivated by, and paralleled, similar work that I had carried out in New England, recognizing that no similar work had been carried out in Montana or surrounding states.

Mr. Pearce characterizes our study as concluding that “....there is very little, to no effect on real estate values due to HVTLs.” That also is incorrect. The case studies for two of the seven property types we studied showed significant price effects as well as effects on marketing time. Further, we were careful to emphasize that you couldn’t generalize from our results to the effects on a particular property. For those property types where our case studies found no effect, it was easy to imagine particular circumstances where there would be an effect. Conversely, where our case studies found an effect, it was easy to imagine particular circumstances where there would be no effect. What our study did identify were the factors and conditions where the likelihood of effect was greater or lesser, but conclusions with respect to any particular property would have to be grounded in a site specific analysis of the attributes of the property that give it value and the way in which the transmission line affects those attributes.

Finally, Mr. Pearce argues that our study of sales along a transmission line that had been in place since the early 1980’s was irrelevant to understanding property value effects from a new transmission line because “.... the lands affected by the power lines have healed and the lines (added) have become a part of the accepted landscape.” He goes on to suggest an analogy to the effects of fire or flood. I understand the fire or flood argument where the negative effects dissipate over time, but when a buyer sees a transmission line on a property, especially a buyer new to that market, his reaction is unlikely to be different whether the line has been there for 5, 15 or 25 years. As to whether our case studies reflect the

experience of properties during a highly active market or a down market, our findings that the availability of unaffected substitute properties is a critical factor in determining the likelihood of value impacts speak directly to this very point.

These clarifications notwithstanding, I certainly acknowledge that the current situation of not knowing where the final MSTI alignment is going to be and what the lines might look like from any particular property introduces an important element of uncertainty that can significantly impact the current value and marketability of a property. This question was not intended to be addressed by our study. Mr. Pearce asks for a study that would examine sales relevant to this period of siting and potential construction. However, sales during this period for the 500kV lines we studied would be very old and of a substantially different market era. They are also likely to be very few in number, partly because the time period of siting is relatively short and because the effect of uncertainty on potentially affected properties is to cause people to be reluctant to try to sell during this period or, if they do, to be unsuccessful. Finally, finding parties to these transactions 30+ years later would be extraordinarily difficult if not impossible, as would obtaining accurate interview recollections as to their buying and selling motivations.

Further, it's not clear what the relevance of knowing these interim effects would be to the large number of potentially affected properties while multiple corridors are under consideration. Once the final alignment is known many of these properties will turn out to be completely unaffected. The two relevant areas of contribution of the real estate research we carried out are the siting process, i.e. recognizing areas where the likelihood of property value effects are greater or lesser, and determining appropriate compensation for those properties actually affected once the final alignment is known. Our research has important things to say in both of these areas.

James A. Chalmers, Ph.D.

Preliminary Study Report

IMPACT ON VALUE OF HIGH VOLTAGE TRANSMISSION LINES

Towns of Deerfield & Littleton

Rockingham & Grafton Counties, New Hampshire

Prepared for:

Mr. George Dana Bisbee, Esquire
Devine, Millimet & Branch, P.A.
111 Amherst Street
Manchester, New Hampshire

Date of Study:

May 27, 2011

May 27, 2011

George Dana Bisbee, Esquire
Devine, Millimet & Branch, P.A.
111 Amherst Street
Manchester, New Hampshire 03101

Re: Preliminary Study of HVTL Impact on Value
Towns of Deerfield and Littleton
Rockingham & Grafton Counties
New Hampshire

Dear Mr. Bisbee:

At your request, I have prepared the following preliminary study report in summary format to determine if the value of residential properties that abut or bisect existing high voltage transmission lines (HVTL) is impacted. It is my understanding that the use of this summary study is for internal purposes and may be disclosed to others outside your office in conjunction with legislative, legal, and application proceedings. It is important to note that this study does not include analysis of any one specific property; rather looks broadly across the market spectrum to analyze and determine the impact on value, if any.

The scope of this preliminary study was to research two towns: one in the North Country and one located in the southern tier of New Hampshire. Littleton was selected in the North Country due to the presence of an existing high voltage direct current transmission line (HVDC) similar to the proposed Northern Pass project. Deerfield was selected in the southern tier due to the presence of a large high voltage alternating current (HVAC) transmission line.

The methodology in this preliminary study was to review all parcels that are either bisected by or abutting existing HVTL corridors. More than 150 parcels were initially reviewed as part of this study in Deerfield and Littleton. These parcels are all located along the existing HVDC line in Littleton and the existing double 345kV transmission running north / south in Deerfield. In addition to sale transactions, vacant parcels of land that were improved with a home since 2000 have also been analyzed. The initial data research began with a review of tax assessment cards in both towns. The data was confirmed with MLS, where available, and a person directly involved in the transaction. Sales that included distressed conditions such as a foreclosure were not relied upon due to extenuating circumstances that make it difficult to measure impact on value. For example, loan to value ratios, borrower's personal circumstances, and bank's disposition strategy all factor into foreclosure sales. Therefore, these external factors unrelated to the real estate market can vary greatly; thus rendering this type of data unreliable.

Four properties were identified in each town. These properties were either sales transactions or vacant land parcels that were improved with homes. The sale data was compared against all other similar properties that sold within the town during the same year. The sale data was also compared against the equalized assessed value.

The factors in the study include: marketing period, vacant land with new improvements, the principle of substitution, equalized assessed value, and comparing all other sale data in the town during the same year. The summary analysis and conclusions follow:

▲ **Marketing Period**

In transactions where marketing period data was available, there was no evidence of increased marketing times compared to the average marketing periods during the same time period. In fact, the marketing periods were shorter than the mean for the marketplace in each transaction.

▲ **Vacant Land with New Improvements**

There are three examples of vacant land in Littleton underneath the HVDC located in the pristine Connecticut River Valley with waterfrontage on the Connecticut River where houses were constructed since 2000. As shown on the sale data pages that follow, significant investment in improvements (homes) are being made despite the presence of the HVDC transmission line.

▲ **Principle of Substitution**

Based on a review of MLS data, market participants in the two towns had alternatives within the marketplace to purchasing property abutting or bisected by HVTLs. There were other alternative locations that provided similar amenities and characteristics without being near a HVTL; yet market participants chose properties that abut or are bisected by the HVTL paying market value.

▲ **Equalized Assessed Value**

Comparison of the sale price to the equalized assessed value of the property was analyzed. For the transaction in Littleton, the property sold for significantly more than the equalized assessed value. In Deerfield, the town's historical assessment data was not available at the time of sale. The tax assessment cards in both towns did not reflect any discount for the presence of the HVTL.

▲ **Comparing Sale Data for Properties Abutting to All Other Similar Sale Data Within the Town**

MLS data for the five sales abutting the HVTL was compared to all other sales transactions within the town during the same time period. This analysis included review of sale data within the town of similar properties during the same time period in order to confirm whether the property sold at market value. The MLS sales data was reviewed on an individual basis

for each of the five sales. Without exception, the five transactions did not reflect a discount or a below market value transaction price.

All sale data has been confirmed from the municipal records. In addition, a party that was involved with the transaction was interviewed. Individuals that were directly involved in the transaction were asked if the presence of the HVTL impacted the listing price, the sale price, and marketing time of the property. Without exception, the parties interviewed indicated that the presence of a HVTL did not impact the market value of the property. In all cases, the sales were arm's length transactions.

The following pages include a summary of the data analyzed and considered as part of this preliminary study. The associated satellite images found on the following pages show the existing HVTL corridor in relation to the property analyzed. For the Littleton data, the parcel is shown in yellow and the HVTL corridor is shown in red. For the Deerfield data, the HVTL corridor is shown in pink.

LITTLETON, NEW HAMPSHIRE

1314 Monroe Road

Tax Map 40, Lot 3

47.14 acres with 2,694 feet of waterfront on the Connecticut River. Improved with a single family house constructed in 2000 that contains 2,652 square feet of finished area with 3 bedrooms and 3 bathrooms.

The parcel is bisected by the HVDC line along the waterfront. The HVDC right of way is between the house and the waterfront. The property sold on May 10, 2010 for \$400,000 and was marketed for 69 days (mean marketing period was 105 days). The equalized assessed value at the time of sale was \$254,900 (not considering land in current use).

According to a participant in the transaction, the house sold at its “market value” and the transaction was arm’s length without any concessions paid by the seller.



**1996 Monroe Road
Tax Map 27, Lot 4**

28.94 acres with 960 feet of waterfront on the Connecticut River.

In 1993, the parcel sold as vacant land for \$30,000. In 2011, a new 2,192 square foot house was constructed on the site at an estimated cost of \$264,598 (as completed) according to the tax assessment card. The HVDC power line bisects the property approximately halfway between the road and the water. The total equalized assessed value of the property as of April 1, 2010 was \$284,700.



**1950 & 1952 Monroe Road
Map 27, Lot 5**

28.96 acres with 920 feet of waterfront on the Connecticut River. Improved with two homes: a 2,398 square foot gambrel house constructed in 1996 and a 795 square foot ranch house constructed in 2006.

The HVDC power line bisects the property approximately halfway between the road and the water. The property sold on March 29, 1994 for \$28,900 as vacant land. Since 1996, two years after the purchase of the raw land, according to the tax assessment data, the owner has invested \$311,600 in improvements. The total equalized assessed value is currently \$414,400.



1174 Monroe Road
Map 28, Lot 2

11.74 acres with 677 feet of waterfront on the Connecticut River.

In 2008, a new 2,212 square foot house was constructed on the site at an estimated cost of \$150,000 according to the tax assessment card building permit data. The HVDC power line bisects the property approximately halfway between the road and the water. The total equalized assessed value of the property as of April 1, 2010 was \$248,200.



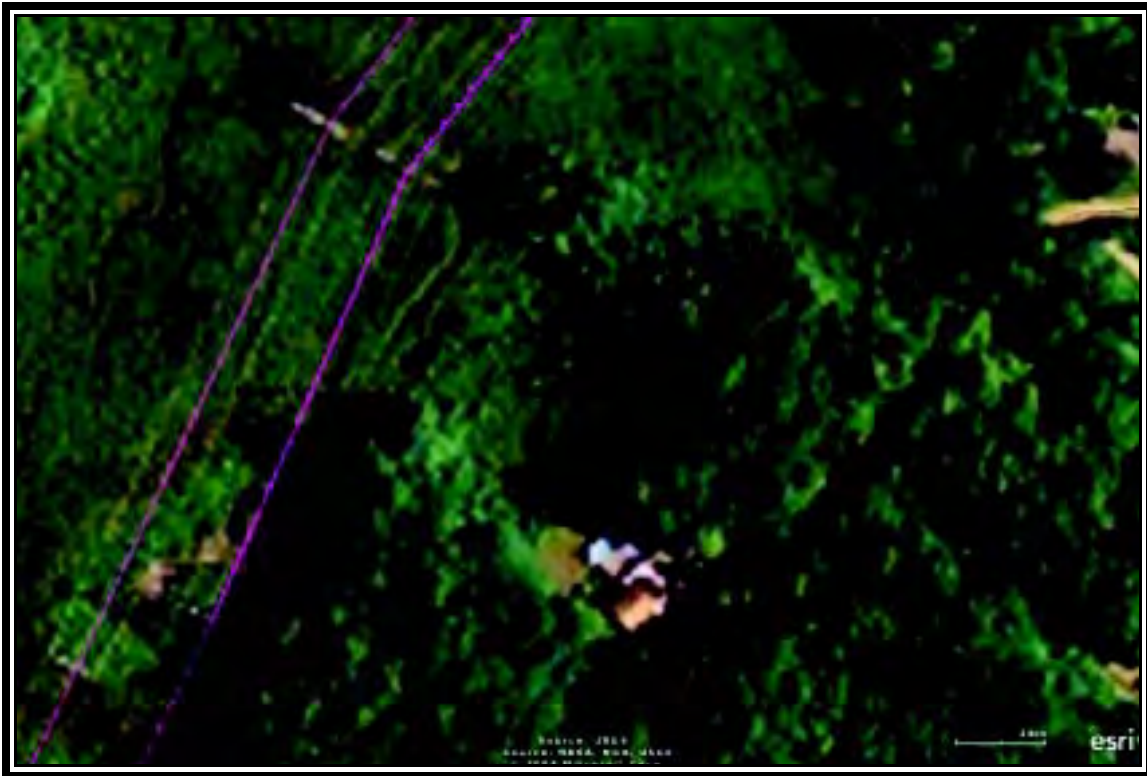
DEERFIELD, NEW HAMPSHIRE

134 Mountain Road Map 415, Lot 69

5.0 acres improved with a 2,800 square foot house with 3 bedrooms and 1¾ bathrooms constructed in 1988. The house has year round views of the power lines and abuts the HVAC corridor. The power lines can be clearly seen from not only the road in front of the house, but also from the house itself.

The property was marketed for 71 days (mean marketing period was 87 days) and sold for \$274,000 on August 12, 2005. The current equalized assessed value calculates to \$231,496.

According to a participant in the transaction, the HVTL did not impact the sale of this property despite the fact the power lines can be clearly seen not only from the road in front of the house, but also from the house itself. The transaction was arm's length.



**60 Reservation Road
Map 418, Lot 32**

3.0 acres improved with a 2,652 square foot house with 3 bedrooms and 2½ bathrooms constructed in 2006. The house has year round views of the HVTL corridor and abuts the HVAC power lines.

The property sold on February 1, 2007 for \$265,000 near the peak of the real estate market. The tax assessment card notes that the property abuts the power lines, but makes no adjustment to the assessed value. The current equalized assessed value calculates to \$243,996 which reflects the downward trend of real estate values since 2007 in Deerfield.

According to a participant in the transaction, the power lines are “very close to the house” and in plain view year round. There was no consideration given to the presence of the HVTL corridor or the view shed from the property.



**204 Raymond Road
Map 424, Lot 44**

2.51 acres improved with a 2,400 square foot house with 4 bedrooms and 1½ bathrooms constructed in 1750. The house has year round views and abuts the HVAC power lines.

The property was marketed for 57 days (mean marketing period was 87 days) and sold for \$147,000 on May 1, 2000. The original asking price was \$150,000. The current equalized assessed value calculates to \$255,906.

According to a participant in the transaction, properties in Deerfield that abut HVTs are not impact by price or marketing time. They also indicated that while the “type” of buyer may be different for these properties, the marketing periods are not noticeably different.



204 Raymond Road
Map 424, Lot 45

2.9 acres improved with a 1,974 square foot house with 2 bedrooms and 1 bathroom constructed in 1980. The house has year round views and abuts the HVAC power lines.

The property was sold for \$75,000 on January 27, 2003. The current equalized assessed value calculates to \$229,626.



REPRESENTATIVE IMAGES OF POWER LINE TRANSMISSION CORRIDORS



HVDC Lines Viewing from Monroe Road, Littleton Across Connecticut River to Vermont



HVAC Power Line Corridor in Deerfield

Summary

The market data indicates that significant investment occurs on properties that are bisected by HVTLS. Marketing period data indicated the properties all sold faster than the mean marketing period during that time. There were no deductions noted on any of the municipal tax assessment cards reviewed for properties abutting or bisected by HVTLS. Based on the preliminary analysis contained herein, there is no market evidence in either Deerfield or Littleton that would indicate diminution of property value due to high voltage transmission lines. This conclusion is further supported by interviews conducted with individuals involved in the market transactions of properties abutting HVTL corridors.

It should be clearly understood, the acceptance of this assignment was not conditioned upon my reporting a specific (dictated) value; nor was the acceptance of the assignment conditioned on my concluding a requested result or outcome.

Respectfully submitted,

B.C. UNDERWOOD LLC



Brian C. Underwood, CRE
NHCG-394

CERTIFICATION

Brian C. Underwood, CRE certifies that, except as otherwise noted in this report:

1. I have no present or prospective interest in the properties that are the subject of this report, and neither the employment to make the study, nor the compensation for it, is contingent upon the results of the study.
2. This assignment was not based on a requested result.
3. I have no personal interest or bias with respect to the parties involved or the subject matter of the study. The conclusions contained herein are not based in whole or in part on the race, color, or national origin of the owners, prospective owners, or occupants of the properties studied.
4. I have made a personal inspection of the properties part of this study. To the best of my knowledge, the statements of fact contained in this report are true and correct, and I have not knowingly withheld any significant information.
5. All contingent and limiting conditions are contained in this report (imposed by the terms of the assignment or by the undersigned affecting the analyses, opinions, and conclusions contained in the report).
6. My analyses, opinions and conclusions were developed and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Practice of the appraisal organizations with which I am affiliated.
7. No one provided significant professional appraisal assistance to the appraiser signing this report. All conclusions and opinions concerning the real estate that are in the summary study were prepared by the appraiser whose signature appears on the report. No change in any item in the summary study shall be made by anyone other than the appraiser, and the appraiser shall have no responsibility for any such unauthorized change.



Brian C. Underwood, CRE

QUALIFICATIONS OF THE FIRM



B.C. Underwood LLC has completed a wide range of valuation, counseling, and mediation assignments. The following is a representative list of these assignments, the geographical areas covered, and clients served.

TYPES OF ASSIGNMENTS:

Airport Land & Buildings	Marinas
Apartment Buildings	Market & Feasibility Studies
Appraisal Review	Mediation
Athletic Clubs	Mill Buildings
Automobile Dealerships	Mineral Rights
Bank Buildings	Mobile Home Parks
Bed & Breakfasts	Multi-Family
Business Valuation	Office Buildings & Parks
Campgrounds	Parking Lots
Commercial Land & Buildings	Planned Residential Developments
Condominium Buildings	Private Schools
Conservation Easements	Quarries
Convenience Store Chains	Railroad Tourist Attractions
Diminution in Value Projects	Restaurants
Easements & Rights of Way	Retail Petroleum Properties
Eminent Domain	Self Storage Facilities
Environmentally Contaminated Property	Service Garages
Fast Food Restaurants	Spring Water Plants
Forest Land	Shopping Malls
Group Homes	Single Family Homes
Going Concerns	Strip Centers
Golf Courses	Taverns & Inns
Hardware Stores	Tax Abatement
Horse Farms	Time Share Projects
Industrial Land & Buildings	USPAP & Appraisal Methodology
Lumber Yards	Waterfront Property

GEOGRAPHICAL AREAS (COUNTIES):

Connecticut: New Haven	New Hampshire: Belknap, Carroll, Cheshire, Coös,
Maine: Androscoggin, Cumberland, York	Grafton, Hillsborough, Merrimack, Rockingham,
Massachusetts: Barnstable, Bristol,	Strafford, Sullivan
Middlesex, Nantucket, Norfolk, Plymouth,	New York: Kings
Suffolk, Worcester	Pennsylvania: Cumberland, Juniata, Lancaster,
Georgia: Fulton	Northampton, York
	Rhode Island: Providence
	Vermont: Rutland, Windham, Windsor

QUALIFICATIONS OF THE FIRM, continued

CLIENTS SERVED:

AMRESKO Commercial Finance	Key Bank
Archibald, Nolan D.; Chairman, Black & Decker	Lakes Region Conservation Trust
Arent Fox Kintner Plotkin & Kahn, PLLC	Lakeview Management, Inc.
Bald Peak Land Company	Mallet Company
Bank of America	Marriott, J. Willard Jr.; Chairman, Marriott International
Bank of America Private Clients Group	Martin, Lord, & Osman, P.A.
Bangor Savings Bank	Latic, P.A.
Beech River Mill, Inc.	McLane, Graf, Raulerson & Middleton
Brewster Academy	Mobil Oil Corporation
Chase Manhattan Bank	Mount Washington Observatory
Citizens Bank	Mutual Oil Company
Cleveland, Waters & Bass, P.A.	North Conway Country Club
Cooper, Cargill, Chant Attorneys at Law	Northway Bank
Dartmouth College	Ocean Bank
Devine, Millimet & Branch, P.A.	Orr & Reno
Federal Deposit Insurance Corporation	Pace Academy
First Pioneer Farm Credit	Pike Industries, Inc.
Fletcher, Tilton & Whipple, P.C.	PriceWaterhouseCoopers
Franklin, City of	Public Service of New Hampshire
Gallagher, Callahan, & Gartrell, P.C.	Sheehan, Phinney, Bass & Green, P.A.
Godbout & Associates	Sulloway & Hollis, PLLC
Governor Wentworth Regional School District	Sullivan & Gregg Attorneys at Law
Green Mountain Furniture, Inc.	TD Bank
Grinnell & Bureau Attorneys at Law	Taylor Community
Haynes Management, Inc.	Town of Wolfeboro
Holland & Knight	U.S. Trust Company
Huggins Hospital	Walker & Varney Attorneys at Law
J.P. Noonan, Inc.	Wescott, Dyer, Fitzgerald & Nichols, P.A.
Johnson & Dix Fuel Corporation	

BRIAN C. UNDERWOOD, CRE QUALIFICATIONS

PROFESSIONAL DESIGNATIONS

Awarded the CRE designation, Counselor of Real Estate; The Counselors of Real Estate

PROFESSIONAL PUBLIC APPOINTMENTS

New Hampshire Real Estate Appraiser Board, Chairman
By Appointment of Governor John Lynch

PROFESSIONAL EXPERIENCE

B.C. Underwood LLC, Rye Beach, New Hampshire: Principal of an east coast real estate and business valuation firm specializing in complex property types, litigation support, and mediation.

Genesis Real Estate Synergy Partners LLC, Portsmouth, New Hampshire: Managing Partner of a commercial real estate financing and private equity investment company.

Atlantic Valuation Consultants, Inc., Meredith, New Hampshire: President of an east coast real estate and business valuation firm specializing in market / feasibility studies, and litigation support.

I. J. Barkan, Inc., Boston, Massachusetts: Appraiser for a regional commercial and industrial real estate appraisal company.

Schubert Appraisals, Inc., North Conway, New Hampshire: Appraiser for a regional, commercial and industrial real estate appraisal company.

Conwood Group, New Cumberland, Pennsylvania: Managing General Partner of a real estate investment company that owned and operated coin laundries.

LICENSEE

Certified General Real Estate Appraiser, State of New Hampshire
License Number: NHCG-394 (expires December 31, 2011)

The State of New Hampshire maintains reciprocity with most other states.



QUALIFICATIONS, BRIAN C. UNDERWOOD, CRE, continued

PROFESSIONAL EDUCATION

Harvard Business School

- *Valuation*; Cambridge, Massachusetts; May 1999

American Society of Appraisers Seminars

- *The Expert Witness*; Manchester, New Hampshire; May 1996

Appraisal Foundation

- *Appraisal Investigator Training Level I*; Alexandria, Virginia; August 2009
- *Appraisal Investigator Training Level II*; Scottsdale, Arizona; November 2010

Appraisal Institute Courses

- 400: *National Uniform Standards of Professional Appraisal Practice (USPAP) Update Course*; Manchester, New Hampshire; October 2004
- 410: *Standards of Professional Practice, Part A (Uniform Standards of Professional Appraisal Practice)*; Portland, Maine; September 1997
- 420: *Standards of Professional Practice, Part B*; Hershey, Pennsylvania; May 1993
- 110: *Appraisal Principals*; Hershey, Pennsylvania; March 1993
- 120: *Appraisal Procedures*; Hershey, Pennsylvania; March 1993
- 310: *Basic Income Capitalization*; Tallahassee, Florida; August 1993
- 320: *General Applications*; Boston, Massachusetts; September 1995
- 510: *Advanced Income Capitalization*; Tallahassee, Florida; August 1993
- 540: *Report Writing & Valuation Analysis*; Tallahassee, Florida; August 1995

Appraisal Institute Seminars

- *Subdivision Valuation*; Manchester, New Hampshire; September 2005
- *Automated Valuation Models*; Baltimore, Maryland; October 1997
- *Mock Trial*; Boston, Massachusetts; September 1995
- *Appraisal Practices for Litigation*; Boston, Massachusetts; September 1995
- *GIS Seminar*; Boston, Massachusetts; April 1995
- *Due Diligence, Contaminated Properties, & the Real Estate Appraiser*; Boston, Massachusetts; January 1995
- *Environmental Risk and the Real Estate Appraisal Process*; Rockport, Maine; October 1994
- *Uniform Standards of Professional Appraisal Practice - Update Course*; Concord, New Hampshire; October 2009

The Counselors of Real Estate Seminars

- *Global Economic Forces: The Deficit, the Dollar and Interest Rates*; Chicago, Illinois; April 2005
- *Real Estate Capital Markets*; Chicago, Illinois; April 2005
- *Big Thinkers on The Big Picture: Commercial Real Estate Markets*; Chicago, Illinois; April 2005
- *Hedging: Protecting Your Assets in a Rising Interest Rate Environment*; Chicago, Illinois; April 2005
- *Market Watch: A Real World View on Market Prospects*; San Francisco, California; October 2007

QUALIFICATIONS, BRIAN C. UNDERWOOD, CRE, continued

- *Institutional Investment: When Residential Real Estate Brings the Highest Yields*; San Francisco, California; October 2007

Massachusetts Board of Real Estate Appraisers Seminars

- *Teamwork in Eminent Domain*; Boston, Massachusetts; September 1997

New Hampshire Association of Industrial Agents Seminars

- *Redeveloping Contaminated Sites*; Center Harbor, New Hampshire; October 1994

New Hampshire Attorney General's Office

- *Wynn Arnold Administrative Law Workshop*; Concord, New Hampshire; December 2009

New Hampshire Bar Association Seminars

- *Managing, Buying, & Selling Contaminated Properties*; Concord, New Hampshire; March 1994

New Hampshire Superior Court, Office of Mediation & Arbitration

- *NH Superior Court Rule 170 Civil Mediation Training*; Concord, New Hampshire; June 2010

University of New Hampshire

- *Uniform Standards of Professional Appraisal Practice*; Portsmouth, New Hampshire; December 2001

ARTICLES PUBLISHED

How to Lower Real Estate Taxes, Coin Launderer & Cleaner; February 1996

Tax Abatements for Environmentally Contaminated Real Estate, New England Service Station & Automotive Repair Association; January 1995

SEMINARS PRESENTED

Real Estate Appraisal Issues, New Hampshire Chapter, Appraisal Institute; Concord, New Hampshire; January 2010

Appraising Environmentally Contaminated Real Estate, New Hampshire Bar Association; Concord, New Hampshire; March 1999

Real Estate Tax Abatement & Eminent Domain, [presented together with Jack B. Middleton, Esquire & Arthur G. Greene, Esquire; McLane, Graf, Raulerson & Middleton]; North Conway, New Hampshire; February 1999

Real Estate Tax Abatement Process, [presented together with Jack B. Middleton, Esquire; McLane, Graf, Raulerson & Middleton]; Hanover, Portsmouth, and Manchester, New Hampshire; December 1996

Real Estate Tax Abatement Process, [presented together with Jack B. Middleton, Esquire; McLane, Graf, Raulerson & Middleton]; Manchester, New Hampshire; November 1995

QUALIFICATIONS, BRIAN C. UNDERWOOD, CRE, continued

Tax Abatement for Environmentally Contaminated Real Estate, Independent Oil Marketers Association of New England; Westborough, Massachusetts; October 1995

Tax Abatement Issues for Campground Owners, New Hampshire Campground Owners' Association; Laconia, New Hampshire; October 1995

LITIGATION EXPERIENCE

- New Hampshire Superior Court: Admitted as an expert witness.
- New Hampshire Board of Tax and Land Appeals: Admitted as an expert witness.
- New York Family Court: Admitted as an expert witness.
- Massachusetts Appellate Tax Board: Admitted as an expert witness.
- United States Bankruptcy Court: Admitted as an expert witness.
- Vermont Family Court: Admitted as an expert witness.

PROFESSIONAL & PUBLIC AFFILIATIONS

New Hampshire Real Estate Appraiser Board by appointment of Governor Lynch in 2008

The Counselors of Real Estate: Member

- *Real Estate Issues* Editorial Board (2005-2007)
- CRE Consulting Corps Steering Committee (2005 -2007)

Mount Washington Observatory; Board of Trustees. Served as Vice President & Treasurer

Town of Wolfeboro Zoning Board of Adjustment; Chairman (1995-2008)

Moderator, First Congregational Church, Wolfeboro, New Hampshire (2008- 2010)

Member of the Aircraft Owners and Pilots Association

CONTACT INFORMATION

Brian C. Underwood, CRE
B.C. Underwood LLC
Post Office Box 88
Rye Beach, New Hampshire 03871

603.387.1340
bcu@bcunderwood.com
www.bcunderwood.com

OWNER INFORMATION		SALES HISTORY						PICTURE																															
BROWN, JOHN C.		Date	Book	Page	Type	Price	Grantor																																
PO BOX 61		06/17/2011	5222	1096	U I 39		BROWN, NANCY A.																																
DEERFIELD, NH 03037		01/27/2003	3939	1884	Q I	75,000	BROWN,																																
		05/27/1988	2742	803	U I 99	70,000	BROWN, FREDERICK & SAL																																
LISTING HISTORY		NOTES																																					
03/07/12 JBVM 01/30/12 INSP MARKED FOR INSPECTION 05/19/10 JBCL CONDENSATION PROB W/MET 02/18/10 JBRM 06/04/02 JDUL 08/10/00 JDRE 08/03/00 JDRM 07/03/90 JY		NAT; EPF=NOT HEATED, USED AS WORKSHOP; 2/10 NOH; PAT IN PR COND; TREE LINE OBSTR VIEW OF PL'S; DEK=EST SHAPE; 5/10 CRL=WET, CHIMNEY=HALF BRICK; 3/12 NOH; FIX XFOBS;																																					
EXTRA FEATURES VALUATION												MUNICIPAL SOFTWARE BY AVITAR																											
Feature Type	Units	Lngh x Width	Size Adj	Rate	Cond	Market Value	Notes	DEERFIELD ASSESSING OFFICE																															
FIREPLACE 1-STAND	1		100	3,000.00	100	3,000		PARCEL TOTAL TAXABLE VALUE <table border="1"> <thead> <tr> <th>Year</th> <th>Building</th> <th>Features</th> <th>Land</th> </tr> </thead> <tbody> <tr> <td>2014</td> <td>\$ 145,100</td> <td>\$ 15,000</td> <td>\$ 73,800</td> </tr> <tr> <td colspan="4">Parcel Total: \$ 233,900</td> </tr> <tr> <td>2015</td> <td>\$ 139,700</td> <td>\$ 15,000</td> <td>\$ 82,100</td> </tr> <tr> <td colspan="4">Parcel Total: \$ 236,800</td> </tr> <tr> <td>2016</td> <td>\$ 139,700</td> <td>\$ 15,000</td> <td>\$ 82,100</td> </tr> <tr> <td colspan="4">Parcel Total: \$ 236,800</td> </tr> </tbody> </table>				Year	Building	Features	Land	2014	\$ 145,100	\$ 15,000	\$ 73,800	Parcel Total: \$ 233,900				2015	\$ 139,700	\$ 15,000	\$ 82,100	Parcel Total: \$ 236,800				2016	\$ 139,700	\$ 15,000	\$ 82,100	Parcel Total: \$ 236,800			
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Parcel Total: \$ 236,800																																							
2016	\$ 139,700	\$ 15,000	\$ 82,100																																				
Parcel Total: \$ 236,800																																							
POOL-INGRND-GUNITE	648	36 x 18	85	33.00	40	7,271																																	
LEAN-TO	135	9 x 15	179	4.00	20	193	MADE OF LOGS																																
SHED-WOOD	180	10 x 18	149	7.00	40	751	NEAR POOL																																
SHED-WOOD	18	3 x 6	400	7.00	40	202	ATT TO EPF OIL TANK																																
DECK	360	10 x 36	104	7.00	70	1,835	ATT TO IGP																																
LEAN-TO	135	15 x 9	179	4.00	50	483	ATT 9X15																																
LEAN-TO	72	6 x 12	282	4.00	70	569	ATT HSE																																
LEAN-TO	204	12 x 17	138	4.00	60	676	NEAR D-WAY																																
15,000																																							
LAND VALUATION																																							
Zone: AR AGR/RESI/PLEASANT Minimum Acreage: 3.00 Minimum Frontage: 200 Site: AVERAGE Driveway: DIRT Road: PAVED																																							
Land Type	Units	Base Rate	NC	Adj	Site	Road	DWay	Topography	Cond	Ad Valorem	SPI	R	Tax Value	Notes																									
1F RES	2.900 ac	95,800	E	100	100	100	95	95 -- MILD	95	82,100	0	N	82,100	ACC																									
		2.900 ac									82,100		82,100																										

Exhibit 11 pg 1


PICTURE	OWNER	TAXABLE DISTRICTS	BUILDING DETAILS	
	BROWN, JOHN C.	District	Percentage	
	PO BOX 61			
	DEERFIELD, NH 03037			
PERMITS				
	Date	Permit ID	Permit Type	
			Notes	
Model: 1.50 STORY FRAME CAPE				
Roof: GABLE OR HIP/PREFAB METALS				
Ext: LOGS				
Int: DRYWALL/WALL BOARD				
Floor: PINE/SOFT WD/CARPET				
Heat: OIL/HOT WATER				
Bedrooms: 2 Baths: 1.0 Fixtures: 3				
Extra Kitchens: Fireplaces:				
A/C: No Generators:				
Quality: A1 AVG+10				
Com. Wall:				
Size Adj: 0.9954 Base Rate: RSA 72.00				
Bldg. Rate: 1.0190				
Sq. Foot Cost: \$ 73.36				
BUILDING SUB AREA DETAILS				
ID	Description	Area	Adj.	Effect.
PAT	PATIO	352	0.10	35
UFF	UPPER FLR FIN	96	1.00	96
FFF	FST FLR FIN	1212	1.00	1212
CRL	CRAWL SPACE	1212	0.05	61
EPF	ENCLSD PORCH	624	0.70	437
CTH	CATHEDRAL	988	0.10	99
ATF	ATTIC FINISHED	128	0.25	32
HSF	1/2 STRY FIN	538	0.50	269
GLA:	1,609	5,150		2,241
2015 BASE YEAR BUILDING VALUATION				
Market Cost New:		\$ 164,400		
Year Built:		1980		
Condition For Age:		GOOD	15 %	
Physical:				
Functional:				
Economic:				
Temporary:				
Total Depreciation:		15 %		
Building Value:		\$ 139,700		

Exhibit 11 pg 2



CLEAN
HYDROELECTRIC
ENERGY

LOW COST
RENEWABLE
ENERGY

PRO-NH
GOOD FOR THE
ECONOMY

PROPERTY VALUE IMPACT

WILL THE NORTHERN PASS TRANSMISSION LINES AFFECT MY PROPERTY'S VALUE?

Property value effects have usually been raised as a concern with proposed high-voltage transmission lines (HVTL). Property owners are understandably worried that a new corridor, or an upgrade of an existing corridor, will negatively affect the value of their property. These concerns are no doubt an important part of the stimulus that has led to over 100 research studies, employing a variety of methods, that address the question of whether proximity to, or visibility of, HVTL negatively affects property values.

The results of this research suggest that there are often no effects on property values, or when there are effects, they are most often small and diminish very rapidly as distance from the line increases. These results shouldn't be misinterpreted to imply that most people do not consider the lines a negative influence. Rather, the research suggests that the influence of the HVTL does not carry sufficient weight (relative to all the other factors that influence property values) to have a consistent, measureable effect. While this is a well-supported conclusion of the research, the researchers are careful to point out that conclusions with respect to individual properties must always be based on consideration of circumstances specific to the property.

The studies identified here build on this research and will be useful in addressing the potential property value effects of the Northern Pass transmission lines. The Underwood Study is a preliminary case study of property sales along existing New Hampshire transmission lines. (Underwood is also currently undertaking a broader analysis, investigating a broad range of property types along existing HVTL that are representative of the terrain and land uses affected by the Northern Pass route. The essence of this case study is to compare actual arm's length sales of properties influenced by transmission lines to the sale of otherwise similar properties not influenced by transmission lines.) The Chalmers and Voorvaart Study will have some application to the more heavily developed areas in southern New Hampshire, while the recently published Chalmers Montana Study may have implications for more rural portions of the route. The Thibeault Report is a useful summary of the published research on the question of property value effects of HVTL.

UNDERWOOD PRELIMINARY STUDY, MAY 2011¹

A preliminary study prepared in May 2011 analyzed the impact of existing HVTLs on property values in Littleton and Deerfield NH. Brian C. Underwood, CRE, of B.C. Underwood Real Estate Counseling & Appraisal, selected these towns because they are representative of towns along the proposed Northern Pass direct current (DC) line in the North Country and the alternating current (AC) line proposed in the southern tier of the state.

Underwood initially reviewed more than 150 parcels located along the existing lines, and then narrowed the preliminary study down to those properties that had been sold or improved with a house or other upgrade within the last 10 years. His analysis of the resulting eight properties, four in each town, and his interviews of persons involved in these transactions, led Underwood to conclude:

"Based on the preliminary analysis contained herein, there is no market evidence in either Deerfield or Littleton that would indicate diminution of property value due to high voltage transmission lines. This conclusion is further supported by interviews conducted with individuals involved in the market transactions of properties abutting HVTL corridors."

CHALMERS AND VOORVAART STUDY, 2008²

A study conducted in 2008 by James Chalmers, PhD, an economist and real estate appraiser, and Frank Voorvaart, PhD, an economist and vice president of The Analysis Group, was published in 2009 in the extensively peer-reviewed *Appraisal Journal*. The analysis included both a review of other studies and its own analysis of the effects of HVTLs on the value of residential properties in two New England states. The study concludes:

"The professional literature cited, combined with the results reported here, support the position that a presumption of material negative effects of HVTLs on property values is not warranted."

Exhibit 12 ps 1

PROPERTY VALUE IMPACT

THIBEAULT REPORT, MAY 2011³

In May 2011, Russell Thibault, president of Applied Economic Research, prepared a synopsis of the appraisal literature addressing the issue of the impact of HVTs on real estate values. The review covered 50 or more studies conducted over several decades in a variety of settings by several dozen researchers using a variety of techniques.

Based on this extensive review, Thibault stated that the majority of the studies found that,

"High Voltage Transmission Lines (HVTs) have a modest or no measurable impact on property values."

IMPLICATIONS OF THE MONTANA RESEARCH FOR THE NORTHERN PASS⁴

Dr. Chalmers recently authored a new study looking at the effect of an existing HVT on property values in Montana. Like New Hampshire, Montana has diverse combinations of terrain, vegetative cover and land use patterns relative to the urban/suburban context in which most of the existing research on property value effects has been carried out. Further, the relevant lands in Montana are characterized by a wide variety of agricultural, recreational and residential property types with relatively few sales. This led Dr. Chalmers to pursue a case study approach.

He carried out 57 case studies that fell into 7 property types: 3 agricultural, 2 recreational residential subdivisions and 2 large acreage recreational tracts. He emphasizes that conclusions with respect to a particular property always have to be based on the attributes that drive the value of that property and the way in which they are affected by the transmission line. Nevertheless, some general conclusions emerged. Properties appear to be less vulnerable to value effects the more diversified their use beyond pure residential, the larger the property, and the fewer the substitute properties unaffected by the transmission lines. In the Montana case studies, the most vulnerable properties were lots in residential subdivisions (recreationally oriented) with limited flexibility in the siting of improvements and for which there were plenty of substitutes unaffected by the lines.

This same methodological approach has been applied in the previously cited ongoing Underwood study.

FINDINGS CONSISTENT WITH PRIOR STUDIES

These four studies are consistent with prior published reports of extensive research on the issue of the effect of HVTs on property values. A notable recent summary of that prior research can be found in a report titled *Transmission Lines and Property Value: Review of the Research and Summary of Key Findings*, prepared by Thomas Priestley, PhD in May 2007.

SOURCES:

- ¹Brian C. Underwood, CRE, "Impact on Value of High Voltage Transmission Lines: Towns of Deerfield & Littleton, Rockingham & Grafton Counties, New Hampshire." Prepared for Devine, Millimet & Branch, P.A., May 2011.
- ²James Chalmers, PhD and Frank Voorvaart, PhD, "High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects" *The Appraisal Journal*, Summer 2009. (Commissioned by Northeast Utilities.)
- ³Russell Thibault, "The Effect of High Voltage Transmission Lines on Real Estate Values: A Review of the Appraisal Literature." Prepared for Devine, Millimet & Branch, P.A., May 2011.
- ⁴James A. Chalmers, PhD, "High-Voltage Transmission Lines and Rural, Western Real Estate Values" *The Appraisal Journal*, Winter 2012.

Exhibit 12 pg 2

Exhibit 1
Regional Analysis of the Mean Percentage Decline and Range of Decline
in Residential Property Value Due to HVOETL Proximity

Region	Mean Decline in Value	Range of Decline
Midwest	7.77 (41)	0-25
West Coast	9.79 (19)	2-25
S. Central	10.63 (27)	0-50
Rocky Mts.	10.94 (08)	0-25
Southeast	10.70 (34)	0-50
Mid-Atlantic	10.88 (21)	0-25
Plains	12.50 (03)	2-20
New England	15.50 (05)	5-20
All Regions	10.03 (158)*	0-50

where () is the number of responses by region.

*The number of responses does not total 166 (219 usable responses less the 35 responses of those indicating that HVOETLs did not negatively affect residential property value less the 18 responses of those who thought a negative effect was warranted but had no experience) because eight respondents failed to indicate the state in which they did most of their appraisals.

Source: Authors

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Exhibit 3
Reasons Cited for Decline in Value Due to HVOETL Proximity

Reason	Percent of Respondees Citing
Visually unattractive	93.9
Health problems	58.9
Disturbing sound	43.1
Unsafe	28.6
Other	14.0

Source: Authors

Exhibit 4
What Actions are Taken by Builders, Developers, or Sellers to Offset
Negative Effects of HVOETLs?

Action	Percent of Respondees Citing
Lower price	68.5
Larger lot size	58.0
Buffers/landscaping	48.7
Other	8.0

Source: Authors

Exhibit 13

Figure 1: "I moved to/live in Deerfield because ..." (Multiple responses possible. Percentages may add to more than 100 percent)

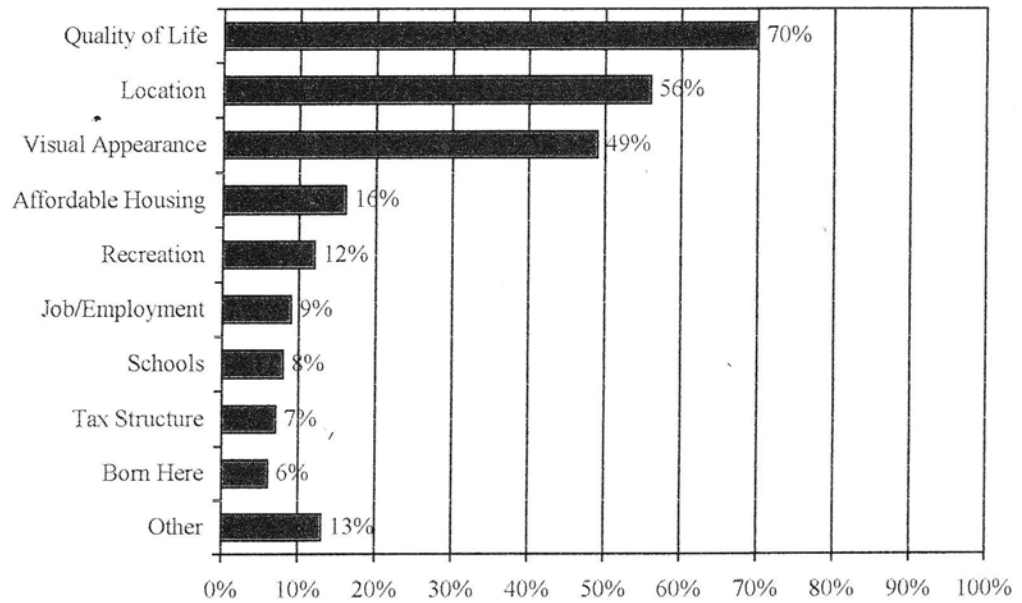


Figure 2: "What do you like most about living in Deerfield?"

