

Hans Karow  
Coalition to Reduce Electropollution (CORE)  
M2 /C14  
1215 Poplar Grove Road  
PENTICTON, BC, V2A 8T6  
Tel.: (250) 493-8507  
E-mail: [hkarow@shaw.ca](mailto:hkarow@shaw.ca)

Commission Secretary  
B.C. Utilities Commission  
900 Howe Street, Box 250  
Vancouver, BC V6Z 2N3  
Phone: (604) 660-4700  
Facsimile: (605) 660-1102  
BC Toll Free: 1-800-663-1385  
Email: [Commission.Secretary@bcuc.com](mailto:Commission.Secretary@bcuc.com)

December 22, 2005

Dear Mr. Pellatt,

Re: **FortisBC Inc. Order No. G-114-05 / Project No. 3698407CPCN Application for Nk'Mip Substation & Osoyoos Transmission Line**  
<http://www.bcuc.com/ApplicationView.aspx?ApplicationId=93>

Please accept this as my Evidence # 19, containing 5 reports about property devaluation associated with near by power lines.

In the best interest of the directly and indirectly affected people by the proposed Fortis transmission line and the optional routes, it is imperative that these people get informed also about the other side of the controversial EMR issue, including property devaluation.

Alternative solutions and mitigation measures are possible, by applying precautionary principle in a way that people can enjoy active and passive prudent avoidance.

The people have the right to know what they are exposed to, and about possible consequences of associated with near by power lines. People must be able to make an **informed decision!**

Respectfully submitted,

Hans Karow

Re: Property devaluation associated with near by power lines #2

Source: [http://www.powerlinefacts.com/Power\\_Lines\\_and\\_Property\\_Values.htm](http://www.powerlinefacts.com/Power_Lines_and_Property_Values.htm)

The following article was published by The Southwestern Legal Foundation in the Proceedings of the INSTITUTE ON PLANNING, ZONING AND EMINENT DOMAIN, Municipal Legal Studies Center, Dallas, Texas, November 18-20, 1998; and The Urban Lawyer, The National Quarterly on State and Local Government Law, Spring 1999, Volume 31, Number 2.

## **Power Lines and Property Values: The Good, the Bad, and the Ugly**

David R. Bolton, MAI  
*David R. Bolton, Inc.*  
*Austin, Texas*

Kent A. Sick  
Womack, McClish, Wall & Sick, P.C.  
Austin, Texas

### **§ 1.01. Abstract.**

This paper begins with a general review of major scientific and appraisal writings since 1993 on the subject of EMFs and their effect on real property value. Further, there is a brief examination of current cases, statutes, and municipal regulations on the subject. Finally, the authors explore the pros and cons of corridor valuation for expansion of existing utility easements, with an emphasis on the right-of-way marketing efforts of several major utility companies and using corridor sales data as opposed to traditional "at the fence" methods.

### **§ 1.02. Review of Original Conclusions.**

In 1993, one of the authors took a long look at the then-current relationship between electric transmission lines and surrounding real estate values. In the article, "Properties

Near Power Lines and Valuation Issues: Condemnation or Inverse Condemnation?," this author presented a broad overview of the subject including the following:

- An examination of scientific inquiry of the day concerning the existence of actual adverse effects of electromagnetic field radiation (EMF) from major transmission lines on human health;
- Public perception of those effects;
- Straw polls of real estate professionals on their views of whether these lines impact values;
- A survey of 100 residential properties abutting a major power line corridor in Houston relative to their peer properties not next to the line;
- A brief review of four important condemnation cases dealing with the potential impact of EMFs on health and property values, as well as the admissibility of expert appraisal evidence; and
- A developing method for analyzing compensation to landowners for placement of a new power line which took into account an effective easement area, in addition to the actual easement required by the condemning entity.

At the time of the original article, scientific findings on the issue of negative health effects were inconclusive, sending mixed signals to the public. The author found, however, that general public perception that EMFs were harmful uniformly drove the values of adjacent property downwards, a finding supported both by his discussions with other real estate professionals and by his residential property study in Houston. Emerging case law at the time supported the admissibility of expert testimony based on "fear in the market place" diminishing the prices of affected properties. In addition, some municipalities had already enacted subdivision plat requirements and other regulations which seemed to support the author's effective easement theory.

Since 1993, there have been significant developments on all fronts. Scientifically, the debate has reached the lofty halls of the Council of the American Physical Society and the U.S. Academy of Sciences. Real estate professionals, however, even those performing studies on behalf of the power line companies themselves, are continuing to conclude that power lines are bad for property values. On the case law front, in general, there is in general continuing support for the admissibility of expert appraisal evidence based on "fear in the market place," but there is growing criticism of testimony deemed to be "junk science," fueled by the *Daubert* and *Robinson* opinions<sup>1</sup>.

### **§ 1.03. Scientific conclusions: still inconclusive.**

Scientific investigation of the potential adverse impacts of radiated fields has widened to include not only the low frequency emissions of transmission lines, the subject of this

paper, but also high frequency emanations from cellular phones and microwave towers. Though the data indicating that higher frequency emissions may be harmful seems much more settled in the literature than that concerning low frequency emissions, it is probable that public perception blends the two such that general fear of EMF exists in the public mind across the board.

### **[1] Good news.**

In an attempt to quell some concerns, the Council of the American Physical Society, a body of renowned American physicists, issued the following statement in 1995:

The scientific literature and the reports of reviews by other panels show no consistent, significant link between cancer and power line fields. . . . While it is impossible to prove that no deleterious health effects occur from exposure to any environmental factor, . . .the conjectures relating cancer to power line fields have not been scientifically substantiated<sup>2</sup>.

One year later, the U.S. Academy of Sciences joined the physicists in their conclusions:

...[T]he current body of evidence does not show that exposure to these EMFs presents a human health hazard. Specifically, no conclusive and consistent evidence shows that exposure to residential electric and magnetic fields produces cancer, adverse neurobehavioral effects or reproductive and developmental effects<sup>3</sup>.

These statements were foreshadowed by a British group of epidemiologists known as the Advisory Group on Non-ionizing Radiation ("AGNIR") in 1994. AGNIR, however, reserved judgment on the issue with regard to childhood leukemia: "...epidemiological studies [do] not establish that exposure to EMFs is a cause of cancer although taken together they suggest that the possibility exists is the case of childhood leukaemia."<sup>4</sup>

### **[2] Bad news.**

The most recent official pronouncement on the subject reopens the debate and muddies the waters more than ever. In June of 1998 an expert panel convened by the National Institute of Environmental Health Sciences ("NIEHS") at the behest of Congress issued an alarming press release. The panel concluded that low frequency EMFs, like those surrounding transmission lines, should be classified as a Group 2B human carcinogen under the International Agency for Research on Cancer classification scheme. A Group 2B classification means that "the agent (mixture) is possibly carcinogenic to humans. The exposure circumstances entail exposures that are possibly carcinogenic to humans."<sup>5</sup>

### **[3] Ugly news.**

As both the following look at subsequent appraisal literature and common sense make clear, the continuing scientific uncertainty over the adverse health consequences of EMFs only serves to perpetuate the debilitating effect of power lines on abutting property values.

## **§ 1.04. More Recent Literature and Surveys.**

### **[1] Hamilton/Schwann.**

In 1995, two academics named Stanley Hamilton and Gregory Schwann published a highly empirical study of residential home prices in Vancouver, British Columbia. The study contrasted sales in four separate Vancouver neighborhoods of residences adjacent to power lines of 60kV or greater from 1985 to 1991. The sample size was impressive, containing 12,907 transactions in the four study areas. The percentage decreases in property values were not as great as those originally measured in the Houston area in this author's 1993 study. Hamilton/Schwann nevertheless concluded to an undeniable drop in value: "We find that properties adjacent to a line lose 6.3 percent of their value due to proximity and the visual impact."<sup>6</sup> The well-supported findings presented in this article lead one to conclude that the depressing effect power lines have on property values is not merely an American phenomenon.

### **[2] Cowger/Bottemiller/Cahill.**

These three real estate professionals employed by the Bonneville Power Administration in Portland, Oregon, published another study in Right of Way magazine in 1996. This study again concluded that overhead transmission lines negatively influence value: "Overhead transmission lines can reduce the value of residential and agricultural property. The impact is usually small (0-10%) for single-family residential properties. The greatest impacts have been measured in intensively managed agricultural property (irrigators, etc., and in rural, second (vacation) home developments."<sup>7</sup>

### **[3] Development Strategies Survey.**

In 1995, a group of real estate consultants in Missouri conducted a survey of residential brokers and salespersons, some 167 professionals, all in the St. Louis area. The results were published in a study concluding that 54% of those surveyed believed high voltage overhead electric transmission lines ("HVOETLs") "very negatively affected" residential property values; another 23.8% considered HVOETLs to "somewhat negatively" affect property values.<sup>8</sup>

### **[4] Rikon article.**

In January of 1996, a New York attorney named Michael Rikon published an article in the *Appraisal Journal* following up on the landmark *Criscuola* decision, which had just been handed down at the time of this author's original paper.<sup>9</sup> *Criscuola* was the landmark New York Supreme Court decision allowing appraisal evidence in transmission line cases to be based upon fear in the market place rather than actual epidemiological evidence of adverse health effects from EMFs. Rikon noted that the *Criscuola* court's embrace of the "fear in the marketplace" theory of damages had spread beyond transmission line cases to include actions against a cell phone provider to stop construction of a tower, against Amtrak to oppose electrification of its tracks in New York, and in increasing numbers of inverse condemnation cases.<sup>10</sup> Clearly, the *Criscuola* buzz continues to grow.

## **[5] Gimmy seminar.**

In late 1994, Arthur Gimmy, MAI, presented a seminar before the EMF Regulation and Litigation Institute<sup>11</sup>. In part, the seminar presented a matched-sales analysis of California residential property that indicated diminutions in lot values from properties abutting power line easements of 18% to a whopping 53.8%<sup>12</sup>. While the methodology employed in this study does not seem as rigorously empirical as that used by Hamilton/Schwann, it may demonstrate that California landowners are more sensitive to the EMF property devaluation issue than those in British Columbia.

## **[6] LCRA Commissioned Study.**

More recently, in late 1997 the Lower Colorado River Authority commissioned a study to quantify the property value impact of electric transmission lines in and around Georgetown, Texas<sup>13</sup>. The study was performed by a local MAI who the LCRA had also hired to do all of the appraisal work for the concurrent acquisition of numerous easement parcels for a new 138kV line. Well over 100 real estate transactions were analyzed, including both sales from eight different residential subdivisions and vacant land sales. Even in a study prepared for a condemning entity in connection with a number of pending acquisitions, undeniable value damage was found:

From the data analyzed, it is concluded that from an overall value perspective, an electric transmission line easement has less than a 10% impact on price, and in most instances, less than a 5% impact on price.<sup>14</sup>

It is important to note that the appraiser in this study was referring to a 10% *overall* impact on price, not just on the value of the land immediately affected by or adjacent to the easement. For those areas, he reached a specific conclusion:

...[I]t is concluded that the area located within an electric transmission line easement has a 90% diminution in value due to the presence of the easement. ... [and] [i]t is concluded that an area 200 feet wide adjoining the proposed easement has some diminished value. The extent of the diminished value can be dependent on various factors which would include the location of the easement relative to the whole tract, and the physical characteristics of the remainder.<sup>15</sup>

This author's original 1993 estimate as to the probable width of an effective easement was 150' on either side of the actual easement<sup>16</sup>. The fact that a study prepared on behalf of a major Texas condemnor reached a similar conclusion demonstrates the validity of the effective easement theory.

## **§ 1.05. Municipal Regulations and Statutes: More Bad News.**

### **[1] Set-back requirements.**

Since the original article, this author has become aware of building set-back requirements from HVOETLs imposed by a few Texas municipalities that convert effective easements from theory to undeniable reality in some jurisdictions. For instance, the Town of Flower Mound, Texas (just north of Fort Worth) mandates that no building be constructed within

100' of the *edge* of the right-of-way or easement of any high voltage (60kV or higher) electrical transmission line.<sup>17</sup>

Although its requirements are not as concrete as those of Flower Mound, the City of Red Oak, Texas (south of Dallas) has enacted similar restrictions tied to height. In Red Oak, buildings in residentially zoned areas adjacent to elevated power lines or towers must be set back an additional one foot for every foot by which the neighboring transmission line or tower exceeds 15'.<sup>18</sup> For instance, if a residential property abuts a 90' high transmission line or tower, an additional 75' building setback would be imposed. The City of Plano has related provisions tied to tower or line height<sup>19</sup>. Obviously, all other things being equal, a purchaser comparing properties affected by these regulation-imposed effective easements would pay something less for them than for other competing properties unaffected by such setbacks.

## **[2] Potential Legal Liability.**

In addition, the Texas Health and Safety Code contains at least one provision related to high voltage power lines (anything over 600 volts) that the authors suspect could have a chilling effect on the values of the underlying servient estate beneath an electric line easement. Chapter 752 of the Code sets out a host of prohibited activities in and around power lines, such as restrictions on operation of certain types of machinery or structures near the line without posting a statutorily-required warning<sup>20</sup>. Curiously, the Texas Legislature even saw fit to declare violation of this chapter a criminal offense punishable by jail time, fines, or both.<sup>21</sup> Perhaps the most damaging provision, however, is the one that establishes civil liability *to the power line company* for any contacts with the line caused by violations of the statute:

If a violation of this chapter results in physical or electrical contact with a high voltage overhead line, the person, firm, corporation, or association that committed the violation is liable to the owner or operator of the line for all damages to the facilities *and for all liability that the owner or operator incurs as a result of the contact.*<sup>22</sup> [Emphasis added.]

While at first blush an underlying landowner's liability to a power line company for a downed transmission line or tower seems obvious, the effective global indemnity of the line operator contained in the last clause could definitely negatively impact underlying property values.

Consider this hypothetical example. Developer John, whose 300 acre tract is bisected by a 138kV power line easement, is preparing the surface of his newly subdivided tract for roadways with a bulldozer. Inadvertently, the operator of the bulldozer bumps one of the towers supporting the line. The tower, having been incorrectly engineered and installed by the power company, immediately falls over on the operator, instantly killing him and knocking out power to all users serviced by the line. One of the users, a major semiconductor manufacturer, sues the power line company for consequential damages flowing from the manufacturer's closure of two full shifts while the line was being repaired and re-energized. Can Developer John possibly be held liable?

In 1984, a Federal Court sitting in Texas concluded that the "all liability incurred" language of the statute provided full indemnity to an electric utility for any claims arising out of any violation, *including liability for the electric utility's own negligence*.<sup>23</sup> Subsequently, in 1991 a Texas appeals court held the language extended even to the "violation" being responsible for the power line operator's attorney's fees, costs, and interest.<sup>24</sup> There are few – if any – other types of "improvements" to real estate that require an underlying landowner to be responsible for someone else's negligence.

## **§1.06. A Quick Case Review.**

### **[1] Old cases.**

The author's first look at power lines and diminished property values in 1993 contained synopses of three cases from literally across the country standing for the proposition that fear in the minds of potential purchasers of real estate was an admissible element of damages in a statutory condemnation proceeding.<sup>25</sup> These cases – *Criscuola*<sup>26</sup> from New York, *Ryan*<sup>27</sup> from Kansas, and *Daley*<sup>28</sup> from California – have all survived the appellate process and continue to be controlling law in their respective jurisdictions.

One important distinction has been drawn from this principle of law, however, at least in California. In *San Diego Gas & Electric Co. v. Covalt*<sup>29</sup>, a landowner tried to make out a claim for inverse condemnation caused by a pre-existing power line based in part on a diminution in value of his property due to fear in the marketplace of EMFs. The court declined to accept that *Daley* controlled. The court held rather that while fear in the marketplace was an acceptable element of damages in a conventional condemnation, such fear could not *create* a new cause of action for inverse condemnation when the power line in question already exists.<sup>30</sup>

### **[2] Coker.**

One relatively recent Federal case merits discussion, though it does not directly involve power lines. In *U.S. v. 14.38 acres of Land (Coker)*<sup>31</sup>, the Fifth Circuit Court of Appeals embraced the fear in the marketplace theory of damages. *Coker* involved a condemnation for a new levee which the landowner's appraiser testified would create "fear" that land on the river side of the levee would be significantly more likely to flood, thus decreasing its market value. The court upheld the admissibility of this testimony in this context, relying on a prior power line case:

Causes of diminution of market value, [such as] the construction of a powerline carrying high voltage electricity across a tract of land which create in the general public fears which make the property less desirable and thus diminish the market value of the property are proper to be considered, though as a separate item of damage might be too speculative and conjectural to be submitted to the Court.<sup>32</sup>

Interestingly, the lower court in *Coker* had excluded entirely the testimony of Coker's appraisal expert, finding essentially that his opinions were "junk science" under the Supreme Court's now famous 1993 opinion in *Daubert v. Merrel Dow Pharmaceuticals*,



*Inc.*<sup>33</sup> In holding that Coker's expert should have been allowed to testify, the court observed:

The value of property taken by the Government...is largely a matter of opinion. Since there are no infallible means of determining with absolute conviction what a willing buyer would have paid a willing seller for the condemnee's property at the time of taking, eminent domain proceedings commonly pit the Government's valuation experts against those of the landowner...Recognizing the critical role of expert witnesses in these cases and the strong interest on both sides that compensation be just, trial courts should proceed cautiously before removing from the jury's consideration expert assessments of value which may prove helpful.<sup>34</sup>

The *Coker* court thus acknowledged the obvious: "how much" in any given condemnation case, particularly ones involving the establishment or expansion of high voltage power lines, will always be a matter of opinion for competing appraisal experts to set forth and for a fact finder to ultimately decide.

### **§ 1.07. Newer Issues: Utility Corridors Can Be Extremely Valuable.**

Within the past few years a new industry has emerged requiring the use of right-of-way corridors for communication lines and fiber optic cables. These communication lines are responsible for transmitting data involving national security, banking, world wide web, tele-conferencing, and most types of data transmission. What better avenues to install the hardware necessary for this product than existing utility corridors, which already offer the physical, economic, and legal attributes for this kind of use.

#### **[1] ATF or True Market Value? A Question of Highest and Best Use.**

Acquiring rights for Communication lines by condemning entities has been fairly rare until recently, primarily because there was no need. As the need for communication lines increased, the utility companies have begun to acquire these property rights. Naturally, the valuation issue is now becoming a factor. The position taken by most companies with the power of eminent domain is to value the property rights as simply the pro rata share of the easement value as determined by the "at the fence" (ATF) prices.

From a pure appraisal perspective, this method is inappropriate and does not conform with generally accepted appraisal practices set forth in the Uniform Standards of Professional Appraisal Practices (USPAP). "In developing a real property appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible appraisal."<sup>35</sup> The foundation of proper appraisal methodology is an analysis of a property's value based on its highest and best use, defined as "[t]he reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value."<sup>36</sup> The basis for appraising property rights of this type is plainly set out in the Appraisal Institute's text book, which is universally accepted as the best authority: "Analysis of the highest and best use of the property as though vacant and of the property as improved is essential in the valuation process."<sup>37</sup>

In the evaluation of a taking of additional property rights within an existing right of way corridor, very rarely can the highest and best use be anything other than for those kind of uses that are already found within the corridor. That being the case, those property rights being acquired must be appraised based on that highest and best use. ATF prices rarely have anything to do with the market value of property rights within the established corridor.

## **[2] Corridor Property Availability.**

The proper method for appraising properties within a corridor is to use market data occurring within a corridor. There is a vast amount of existing corridor space currently available, literally hundreds of thousands of miles. If buyers and sellers for a particular type of property exist in the market place, then market data will be available to the appraiser. Consider the following examples of corridor property availability.

- Union Pacific advertised on the rear cover of Right of Way from at least 1993 through 1996.<sup>38</sup> With a map showing the approximate locations of their corridors, the ad states:

"20,000 Mile Right of Way Corridor and Sites

Available Throughout the West

Transmission Lines	Signboard Sites
Electrical	Industrial Sites
Pipelines	Water Rights

- One major Texas power line company advertises the sale or lease of rights of way corridor properties located throughout southeast Texas for various uses, including mineral leasing, commercial leasing, drainage easements, roadways, pipeline easements (private), commercial large-demand pipelines, and for communication uses.
- Another national pipeline company advertises their right of way corridors for lease only, with lease rates being based on an annual amount per mile.
- The Lower Colorado River Authority has made leases for communication lines based on a rate for each fiber, per mile, per month. Indeed, the LCRA openly solicits fiber optic easement customers over the Internet:

LCRA has 18 dark strands from Austin to Lake Buchanan, 30 dark fiber strands from Austin to LaGrange and 24 dark fiber from Austin to San Antonio available for license. The terms of the license, price, and fiber count are negotiable. Typically, the primary term of the license will be 15 years with an option to renew for 10 years...

In order to expand the fiber routes beyond the core river system, the LCRA seeks proposals from Carriers. Depending upon the amount of fiber requested in a proposal, LCRA will install the fiber cable and license

dark fiber reserve capacity to a third party. The LCRA is positioned to leverage its transmission ROW and towers, which includes approximately 2300 miles of transmission lines and over 200 electric substations.<sup>39</sup>

These advertisements have all the earmarks of typical market forces at work. Without doubt, these examples are indicative of market data for rights of way throughout Texas and the United States for established easement corridors.

### **[3] What Happened to The Landowner's Rights?**

Usually forgotten are the underlying rights of ownership of the landowner. When a utility company has obtained the right of way and created a corridor, but has not obtained a specific property right (i.e. a fiber optic cable), then the value to the property owner should be assessed or appraised based on its highest and best use. This conclusion necessitates that market data (sale and lease) within utility corridors be used for comparison purposes. It is inappropriate to use ATF prices when evaluating the rights of ownership within the corridor for a condemning authority and ignore the data and evaluation methods used when the same rights are sold or leased to users of corridor properties.

#### **[a] Expanding an Existing Easement: The Condemnor's Valuation.**

Consider this scenario. A major utility company owns a prior easement which grants the rights for three electric transmission lines across an approximate 110 acre tract of land in central Texas. A petition is filed to obtain additional property rights within the easement for the "right to construct, place, operate, maintain, reconstruct, replace, rebuild, upgrade, remove, inspect, patrol and repair communication lines and facilities and all necessary and desirable appurtenances on, across, and within the property..." The proposed easement is within the existing 75-foot easement and the length is approximately 1849 lineal feet or about 113 rods.

Citing sales data averaging about 150 acres in size and prices averaging about \$1000.00 per acre, the utility company's appraiser concludes to a market value for the communication easement with the following:

3.24 acres (area of the existing easement) x \$ 1000.00 per acre

= \$3,224

Value of the property rights within the existing easement

95% or \$3,078

Value of the Communication Easement

5% or \$162

#### **[b] The Landowner's Valuation.**

Assume for purposes of this hypothetical that the condemnor utility company had recently leased a fiber optic line to a communication company on the basis of \$21,312/year, equating to a value of \$266,400 (based on a capitalization rate of .08) or \$832 per rod. Utilizing this and other actual market data of sales and lease information from comparable corridor uses averaging between \$300/rod and \$880/rod, the landowner's appraiser, considering the property's true highest and best use, could conclude to a significantly higher value:

113 Rods x \$500 per rod = \$56,000

Given the foregoing example, it seems manifestly unreasonable for a utility company to consider only the ATF value when it is purchasing an easement and then turn around and sell or lease the same easement, based on its true highest and best use, for an exponential profit.

## **§ 1.08. Arguments Against Corridor Valuation Theory.**

### **[1] Corridor Transactions Are Inadmissible Data.**

The traditional rule in Texas has long been that market data involving entities with the power of eminent domain are legally inadmissible to determine just compensation, because such transactions are not arms-length as a matter of law.<sup>40</sup> There are obvious inequities raised when a utility company is allowed to take using one valuation method and sell based on another. This fact, considered along with the rationale behind the prohibition against sales involving condemnors, leads the authors to believe that a good faith argument exists for the extension of the existing law.

#### **[a] Does The Existing Rule Make Sense Here?**

The Texas prohibition against using transactions involving condemning entities really arose in the context of appraisers using sales *to* condemning entities as opposed to *from* them. As one court stated:

The reason for excluding proof of such sales is that they do not meet the willing seller-willing buyer concept; they are made under a direct or an implied threat of condemnation and, theoretically at least, are not free and voluntary.<sup>41</sup>

Applied in that context, the rule makes perfect sense. But what about when a condemnor is advertising to sell right-of-way, or the right to use right-of-way? Potential purchasers are not compelled to buy at that condemnor's price; they can condemn their own right-of-way elsewhere or purchase from some other supplier. It seems logical that a meeting of the minds has occurred when a purchaser acquires rights for an advertised price, and that such sales (or leases) constitute competent market evidence, regardless of whether one or both parties to the transaction possess the power of eminent domain.

#### **[b] *Bauer v. Lavaca-Navidad River Authority***

At least one Texas case indicates that if a landowner demonstrates that the highest and best use of desired property is for an easement corridor, then corridor sales are appropriate data to consider in the appraisal problem.<sup>42</sup> In *Bauer*, the River Authority sought to condemn a 50' wide water line easement across Bauer's property. The location of the desired easement was in the midst of an established, 432' wide "easement corridor" containing eight other easements previously granted to various oil companies and electric utilities. The court held that Bauer should have been permitted at trial to prove that the highest and best use of his property was for an easement corridor. Further, the court found that sales of easement rights-of-way within such corridors were relevant and admissible, provided the sales did not involve entities with the power of eminent domain. In the opinion, the court set out a guideline to determine when such evidence was proper:

...[A]ppellant Bauer offered testimony that the highest and best use of the land in question was the sale of pipeline easements in his "pipeline corridor." He showed that the corridor was well-defined, and he offered testimony regarding the value of the condemned land by showing what he and his neighbor received for the sale of other pipeline easements to prior companies. ... Bauer's right to have the fact finder consider the land's highest and best use in determining its market value was thus denied.<sup>43</sup>

The undisturbed holding of *Bauer* leaves open the right of Texas landowners to claim an easement corridor as highest and best use, and hints that sales *from* condemning entities of corridor rights-of-way may become fair game for an appraiser to consider when determining value for this property.

### **[c] Other Support for Using Sales From Condemnors**

Other support, although limited, for the valid use of comparable market data involving public or quasi-public entities include various environmental groups and some right of way professionals. Their position calls "for the inclusion of a highest and best use for environmental preservation in a real estate appraisal based on comparable market data evidence. Some of the environmental value proponents argue for use of public agency comparable sales data, some for private sales data and some for both."<sup>44</sup>

In the state of California, where most of the debate over this issue originates, there is, in addition to prevailing case law, a provision in their evidence code which: (i) allows for a merger of the appraisal highest and best use of a property and the use for which a public entity is acquiring it; and (ii) allows use of prices paid by public agencies for open space as comparables for valuation purposes where such purchases were voluntary and not under the threat of condemnation.<sup>45</sup>

Certainly, the current argument against using market data involving a party having the power of eminent domain currently predominates. The inherent inequity of this rule in the context of corridor valuation, however, calls for modification of existing Texas law. Regardless, appraisers ought to acknowledge market reality.

### **[2] The Condemnor Created the Value.**

Another argument commonly urged by condemnor utility companies is that they created the corridors through the original acquisition such that any future benefit would accrue to their rights of ownership.

Consider the following example, though, that exposes the flaw in this logic. The State Highway Department builds a new freeway along the property line of Mr. Jones' farm near the edge of town, creating valuable commercial frontage. A couple of years after completion, Wal-Mart comes along and wants to purchase Jones' farm which now has frontage along a new freeway. Mr. Jones contributed no land nor any monies for the construction of the roadway. Should the value of his property be based on who assembled the right of way or who built the roadway? Obviously, once the road is built, future appraisals of Jones' property would be based on its new highest and best use, without regard to who built the road. Likewise, when appraising property rights within a corridor, no consideration should be given to the creator of the corridor.

### **[3] It's Not a Corridor, It's a Closet.**

The third emerging argument against corridor valuation is that usually the underlying property owner possesses only a small portion of the corridor and that value is only created when the whole corridor is assembled. Again, the value should be determined by analyzing market data such as the following (actual) transactions by a southeast Texas utility company:

- June 1993 to June 1998, 2-5 year options; **7.87 rods** leased to a restaurant.
- May 18, 1996 to May 19, 1998 (one day); **167 rods** leased for parking.
- September 1, 1990 to August 31, 1990, lease extended; **29 rods** leased to a public University on the basis of \$1,476.00 per rod.
- January 1, 1996 to December 31, 2001, 2-5 year options; **9 rods** leased for parking.
- Easement granted for **113 rods** for a telecommunication cable to another utility company.

Given these actual transactions, it is plain that any one segment of the corridor, regardless of length, is much more valuable than traditional ATF valuations.

For now, it is true that current law (in Texas anyway) discourages using sales between condemning entities as market data. The extremely active marketing efforts of power line and pipeline companies, however, coupled with increasing amounts of actual sales data point to corridor valuation for expansion of existing easements as the only logical way of conforming with the Uniform Standards of Appraisal Practice. Perhaps our Native American forebears had it right all along:

Back in the days when agents representing a newly formed railroad were buying land for right of way they encountered some shrewd bargainers among the Indians. One Chief was asked whether he would sell a small eroded piece of land.

"Sure, me sell for \$50,000," said the Chief.

"\$50,000! Why that land is no good for planting or pasture. It is just no good for anything!" the agent exclaimed.

The Chief grunted, "*It heep good for railroad.*"<sup>46</sup>

[Back to Home Page](#)

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<sup>1</sup> Goldsteen and High, "Residential Exposure to High-Voltage Transmission Lines," *Journal of Planning and Education Research*, 177-181, Vol. 9, No. 3 (Summer 1990).

<sup>2</sup> Council of The American Physical Society, *Power Line Fields and Public Health*, Public Statement issued April 22, 1995.

<sup>3</sup> NRC. *Possible Health Effects of Exposure to Residential Electric and Magnetic Fields*. National Academy Press, Washington DC (1997) (originally issued in 1996).

<sup>4</sup> NRPB, *Electromagnetic Fields and the Risk of Cancer: Supplementary Report by the Advisory Group on Non-Ionizing Radiation of 12 April 1994*, Doc. NRPB, 5, No. 2, 77-81 (1994).

<sup>5</sup> NIEHS, *Panel Evaluates Electric and Magnetic Fields for Health Effects*, Press Release PR #11-98, June 24, 1998.

<sup>6</sup> Stanley Hamilton and Gregory Schwann. "Electric Transmission Lines and Property Value," *Land Economics*, Vol. 71, No. 4, p. 436 (1995).

<sup>7</sup> J.R. Cowger, Steven C. Bottemiller, MAI, and James M. Cahill. "Transmission Line Impact on Residential Property," *Right of Way*, September/October 1996.

<sup>8</sup> Value of Residential Property Proximate to High Voltage Overhead Electric Transmission Lines. Development Strategies, Inc. (1995).

<sup>9</sup> Michael Rikon. "Electromagnetic Radiation Field Property Devaluation," *The Appraisal Journal*, January 1996, p. 87.

<sup>10</sup> *Id.* at p. 89.

<sup>11</sup> Arthur Gimmy, MAI. *The Potential Impact of EMF On Property Values*. EMF Regulation and Litigation Institute, New Orleans. (1994).

<sup>12</sup> *Id.*

<sup>13</sup> Larry Kokel, MAI. Impact of Electric Transmission Lines on Value. (Study prepared for LCRA). 1997.

<sup>14</sup> *Id.* at p. 94.

<sup>15</sup> *Id.*

<sup>16</sup> David R. Bolton, MAI. "Properties Near Power Lines and Valuation Issues: Condemnation or Inverse Condemnation?" Institute on Planning, Zoning, and Eminent Domain. Southwestern Legal Foundation. (1994).

<sup>17</sup> § 3.05(d)(8), Land Development Code, City of Flower Mound, Texas.

<sup>18</sup> 1989 Unified Development Code, City of Red Oak, Texas.

<sup>19</sup> § 3.801, Zoning Ordinance, City of Plano, Texas.

<sup>20</sup> Tex. Health & Safety Code Ann. § 752.004 (Vernon 1992).

<sup>21</sup> Tex. Health & Safety Code Ann. § 752.007 (Vernon 1992).

<sup>22</sup> Tex. Health & Safety Code Ann. § 752.008 (Vernon 1992).

<sup>23</sup> Moore v. Southwestern Elec. Power Co., 737 F.2d 496 (5<sup>th</sup> Cir. 1984), *cert. denied* 105 S.Ct. 1181.

<sup>24</sup> Olson v. Central Power and Light Co., 803 S.W.2d 808 (Tex. App.—Corpus Christi 1991, writ denied).

<sup>25</sup> See fn. 16.

<sup>26</sup> Criscuola v. Power Authority of New York State, 621 N.E.2d 1195, 81 N.Y.2d 649 (1993).

<sup>27</sup> Ryan v. Kansas Power & Light Co., 815 P.2d 528 (Kan. 1991).

<sup>28</sup> San Diego Gas & Electric Co. v. Daley, (1988) 205 Cal. App.3d 1334, 253 Cal. Rptr. 144.

<sup>29</sup> 55 Cal. Rptr.2d 724 (Cal. 1996).

<sup>30</sup> *Id.* at 754.

<sup>31</sup> 80 F.3d 1074 (5<sup>th</sup> Cir. 1996).

<sup>32</sup> *Id.* at 1079.

<sup>33</sup> 113 S.Ct 2786 (1993).

<sup>34</sup> Coker, 80 F.3d at 1077.

<sup>35</sup> Standard 1, Uniform Standards of Professional Appraisal Practice. Appraisal Standards Board of the Appraisal Foundation (1998).

<sup>36</sup> Appraisal Institute, *The Dictionary of Real Estate Appraisal, Third Edition*. (1993).



<sup>37</sup> Appraisal Institute, "The Valuation Process," p. 87. *The Appraisal of Real Estate, Eleventh Edition*. (1996).

<sup>38</sup> Right of Way, various issues, 1993 through 1996.

<sup>39</sup> <http://www.lcra.org/telecom/fiber.html>

<sup>40</sup> Gomez Leon v. State, 426 S.W.2d 562 (Tex. 1968).

<sup>41</sup> *Id.* at 565.

<sup>42</sup> Bauer v. Lavaca-Navidad River Authority, 704 S.W.2d 107 (Tex. App.—Corpus Christi 1985, writ ref'd. n.r.e.)

<sup>43</sup> Bauer, 704 S.W.2d at 113.

<sup>44</sup> Wayne C. Lusvardi, "The Flawed Logic of Sales Substitution in the Appraisal of Land Suitable for Habitat Preservation or Mitigation," *Right of Way*, May/June, 1997.

<sup>45</sup> Wayne C. Lusvardi, "A Critique of the Position Papers on the Valuation of Land Suitable for Habitat Preservation or Mitigation," *Right of Way*, November/December, 1996.

<sup>46</sup> The Appraisal Journal, October, 1978, pp. 514-515 (Quoted from the April 1963 Newsletter of the American Right of Way Association)

Property devaluation near power lines # 3

Source:

<http://www.powerlinefacts.com/Property%20values%20discussion%20from%20Wisconsin%20EIS.htm>

**The following selection from a Wisconsin EIS summarizes the research on the impact of power lines on property values. It concludes that power lines can reduce home values by up to 14%. (See also [the article](#) in the Journal, *Urban Lawyer*, which reaches a similar conclusion)**

**Property Values** ([Pages 212-215](#) from *Final Environmental Impact Statement, Arrowhead—Weston Electric Transmission Line Project, Volume 1, Public Service Commission of Wisconsin Docket 05-CE-113, Date Issued October 2000*)

The potential for changes in property values due to the proximity to a new power line has been well documented.<sup>i[i]</sup> Real estate appraisers, utility consultants, and academic researchers have studied the issue of how to assess the impacts of power lines on property values since the 1950s. In general, there are two types of property value impacts that can be experienced by property owners affected by a new transmission line. The first is a potential economic impact associated with the amount paid by a utility for a ROW easement. The second is the potential economic impact involving the future marketability of the property. Although somewhat interrelated, these two effects are discussed separately below.

Just compensation for a transmission line easement has been typically interpreted as the difference between the fair market price of the land with and without the encumbrance of the line. Economic impacts to landowners could occur if they are not compensated for the “highest and best use” of the affected parcel or if the effective “taking” is larger than the actual easement. In addition, adjacent property owners are generally not compensated at all, even if certain uses of their land are adversely affected.<sup>ii[ii]</sup> A number of court cases involving these issues have resulted in differing opinions and decisions about what constitutes just compensation.

Potential impacts related to the marketability of a property include factors such as sale price, the amount of time required to sell, and the debt carried over this time. The types of studies done to assess changes in sale price of property containing a transmission line have evolved over time. Initial studies were primarily surveys or attitudinal studies of small numbers of homeowners. However, substantial differences may exist between people’s perceptions about how they would behave and their actual behavior when confronted with the purchase of property supporting a power line.

Because of this uncertainty, attitudinal studies were replaced by “valuation” studies involving the comparison of sales prices for properties similar in most respects, except for proximity to a power line. The potential shortcomings in conducting these types of studies are: (1)

identifying what constitutes a pair of virtually identical properties is often a matter of subjective judgment and (2) a limited number of suitable pairs is often used to represent the “market.”<sup>iii[iii]</sup> A study conducted in west central Wisconsin in the mid-1980s, used the comparable pair sales evaluation of residential properties.<sup>iv[iv]</sup>

A third type of research study to assess property value effects involves large sample sizes, a high number of variables and multiple regression analysis. These studies, which can better account for numerous variables that affect sales, provide the best information to date on the effects of power lines on property values.

When buying property, people are likely to consider many factors, such as schools, community services, scenic beauty, recreational opportunities, or distance to work. The relative importance of each of these factors varies among individuals. Likewise, the importance of a nearby power line varies among people.

A power line may either increase or decrease an individual’s perception of a property’s worth. This perception is indicative of how much one is willing to pay for the property (the fair market value).

The perceived value of a piece of property could increase if:

- A cleared ROW provides better access to interior lands or water.
- A cleared ROW creates an opening that enhances the area for certain wildlife.
- A cleared ROW provides open space that is used for gardening or recreation.
- Increased local electrical reliability enhances opportunities for development of commercial or industrial interests.
- In rural areas, especially in the vicinity of large wooded parcels, utility ROW may provide improved access for hunting, snowmobiling, or other recreational activities.
- White-tailed deer and some other animals use forest openings for foraging and travel. In urban or suburban residential areas, lots on or adjacent to power line corridors are often sized larger than neighboring lots but similarly priced, allowing residents to benefit from the added buffer and space the ROW provides. Integrating the open space of the utility corridor into a neighborhood and developing it as usable space can also diminish or avoid adverse effects on property values.<sup>v[v]</sup>

Conversely, the perceived value of property may decrease in value because of:

- Concern or fear of possible health effects from electric or magnetic fields.
- The potential noise and visual unattractiveness of the transmission line.
- Potential interference with farming operations or foreclosure of present or future land uses.

While no conclusive evidence of the effects of EMF on health exists, it is recognized that people’s concerns about this issue can influence their decisions related to purchase of property. In *Criscuola v. Power Authority of the State of New York*,<sup>vi[vi]</sup> the New York State Court of Appeals ruled that whether the danger of EMF is a scientifically genuine or verifiable fact should be irrelevant to the central issue of its market value impact. The visual profile of

transmission lines structures and wires can also decrease the perceived aesthetic quality of property. These conclusions have been cited in several court cases and legal opinions.

On properties that are farmed, installation of a power line can remove land from production, interfere with operation of equipment, create safety hazards, and foreclose the opportunity to consolidate farmlands or develop the land for another use. The greatest impact on farm property values is likely to occur on intensively managed agricultural lands.

Lastly, the presence of a power line may not affect some individuals' perceptions of a property's value at all. These people tend to view power lines as necessary infrastructure on the landscape, similar to roads, water towers, or antennae. They generally do not notice the lines nor do they have strong feelings about them.

While the data from many of the studies reviewed are often inconclusive, some general observations among the studies are:

- The potential reduction in sale price for single-family homes may range from 0 to 14 percent.<sup>vii[vii]</sup>
- Adverse effects on the sale price of smaller properties could be greater than effects on the sale price of larger properties.
- Other amenities, such as proximity to schools or jobs, lot size, square footage of a house, and neighborhood characteristics, tend to have a much greater effect on sale price than the presence of a power line.
- The adverse effects appear to diminish over time.
- Effects on sale price are most often observed for property crossed by or immediately adjacent to a power line, but effects have also been observed for properties farther away from a line.
- The value of agricultural property is likely to decrease if the power line poles are placed in an area that inhibits farm operations.

With respect to the second to last point, homes not directly adjacent to the ROW or beyond 200 feet from the ROW were affected to a much lesser degree than those abutting the line or ROW.<sup>viii[viii] ix[ix]</sup> It is very difficult to make predictions about how a specific transmission line will affect the value of specific properties. The property values effects discussed in this section are on "fair market" value. No studies have indicated that there may be an effect on the "assessed" value of property.

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<sup>i[i]</sup> Approximately 30 papers, articles, and court cases covering the period 1987 through 1999 were reviewed by Commission staff in its analysis of this subject.

<sup>ii[iii]</sup> Furby, L., Robin, G., Slovic, P., and Fischhoff, B. 1988. Electric Power Transmission Lines, Property Values, and Compensation. *J. Env. Mngmt.* 27:69-83.

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- iii[iii] Kinnard, W. Jr. and S. A. Dickey. 1995. A Primer on Proximity Impact Research: Residential Property Values Near High-Voltage Transmission Lines. *Real Estate Issues* 20(1):23-29.
- iv[iv] Solum, C.L. 1985. Transmission line impact study based on paired sale comparisons of residential properties located within Northwest and West Central Wisconsin. Craig L. Solum & Assoc.
- v[v] Ignelzi, Patrice and Thomas Priestley. A Statistical Analysis of Transmission Line Impacts on Residential Property Values in Six Neighborhoods. Southern California Edison, 1991.
- vi[vi] *Criscuola v. Power Authority of the State of New York*, 81 NY2d 649, 602 NYS2d 588, 621 NE2d 1199 (1993).
- vii[vii] The values can vary widely depending on the area of the United States. In coastal states, such as California and Florida, the decrease in property values can be quite dramatic; in states within the Midwest (Minnesota, Wisconsin and the Upper Peninsula of Michigan), the average decrease appears to be between 4 percent and 7 percent.
- viii[viii] Kung, H. and C. Seagle, "Impact of Power Transmission Lines on Property Values: A Case Study," *Appraisal Journal*, July 1992.
- ix[ix] Hamilton, S. and G. Schwann. 1995. Electric Transmission Lines and Property Value. *Land Economics* 71(4):436-444.



An offiliols of Edino Reolfy Home Scrricer, o complsle real esto/a services compony

Mr. & Mrs. Roger Conant  
2 Sunfish Lane  
Sunfish Lake, MN 55118

January 28, 2002

Dear Roger and Ingrid,

With regard to transmission lines in your area and the possibility of Xcel Energy installing taller poles with more wires; is truly frightening to me.

Being in the real estate business for the last 19 years and specializing in upper bracket homes, I have had some very negative exposure dealing with transmission lines.

Within the last couple of years I listed a beautiful half million-dollar home in the metro area. The only problem with the property was that there were huge electrical transmission lines close to the home. After considerable months on the market the seller received a contingent purchase agreement. Contingent upon looking into health concerns regarding the transmission lines, The buyer contacted the EPA and received pamphlets with information supporting that there is in fact evidence linking the wires to health problems. The buyer immediately cancelled the purchase agreement. The house remains on the market today with very little chance of selling. The home has been earmarked "unsellable" by the wires.

Roger and Ingrid, this is just one example of how transmission lines impact property values.

As a top realtor in the metro area, I like you, am very concerned with the installation of taller poles and additional wires in your neighborhood. I would venture to say that in time, and with people becoming more knowledgeable about EMF, these poles and wires will definitely affect your property value.

Sincerely,

A handwritten signature in cursive script that reads "Mary Gallivan".

Mary Gallivan, CRS



**White Bear Lake Office**

4525 White Bear Parkway  
White Bear Lake, MN 55110-7614  
651-426-1671  
Fax 651-416-1191

January 24, 2002

Dear Ingrid and Roger Conant.

At your request, I am giving you my opinion on power lines and property value.

High power lines have a very strong negative effect on value. In twenty-five years of selling upper bracket real estate, I have found buyers to turn down an otherwise perfect property for them because of power lines. They say: "Those power lines represent a risk I am not willing to take with my family." Whether there is a proven risk or not the buyer perception of high power lines being negative and dangerous prevents the sale

If you have any questions feel free to contact me.

**Best Regards**

A handwritten signature in cursive script that reads "Sally Bradford".

Sally Bradford  
Coldwell Banker Burnet  
651-653-2442



January 23, 2002

To Whom It May Concern:

In my opinion, high wires going over and near residential property do reduce the value of the home and property.

I have been realtor for 24 years and I rank in the upper 1% of all realtors in the nation.

Sincerely,

A handwritten signature in cursive script that reads "Ginger Overbye".

**Ginger Overbye**  
**Edina Realty**





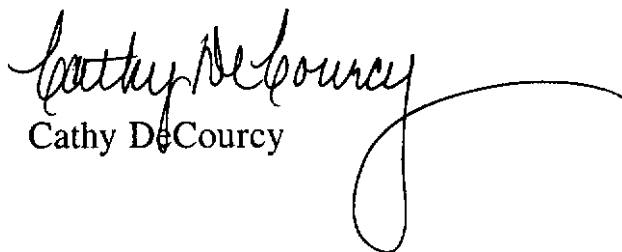
www.edinarealty.com

AFIIIIATE OF EDINA REALTY HOME SERVICES, A COMPLETE REAL ESTATE SERVICES COMPANY

To: Roger Conant  
Power line Task Force

As a realtor at the W. St. Paul office of Edina Realty, I would like to offer the cities of Mendota Heights and Sunfish Lake my opinion of the proposed Xcel Energy lines.

Because the current lines at 80 feet aren't a visual eyesore and do blend into the tree line, they have not depreciated property values. The new proposed line is, however, at least 25 feet higher and far above the tree line in communities with a dramatic range in topography. It will have a significant visual impact and will most certainly have a negative effect on real estate values.

A handwritten signature in cursive script that reads "Cathy DeCourcy". The signature is fluid and includes a long, sweeping underline that extends to the right.  
Cathy DeCourcy

WEST ST. PAUL OFFICE

1414 Mendoto Rood Eort Invei Grove Heights, MN

PHONE 651 450 4525 FAX 651 450 4528

## Property Devaluation associated with nearby power lines # 5

Source: <http://publicservice.vermont.gov/Lamoille/fspropertyvalues.htm>

### FACT SHEET

## Property Values

Studies have been conducted since the 1950s on the effects of power lines on property values. Until recently most studies have focused on visual effects and associated affect on value. More recent research has included Electric and Magnetic Fields (EMFs) and their role in property values.

Research on effects of overhead transmission lines on property values has expanded over the past 20 years to include appraisal studies, attitudinal studies, and statistical analysis. The conclusions of these studies have varied widely, with some reporting no effects, others finding small effects, and still others reporting substantial effects.

The available literature summarizes two types of potential adverse economic effects on property values when loss actually occurs: (1) a possible decrease in value of the property; and (2) an increase in the time required to sell property thus causing an economic loss associated with increased marketing time.

In general, the following findings emerge from literature:

- Transmission lines have a greater potential to reduce the value of urban or residential properties over other types of properties. Many open space properties are not affected at all.
- The overall property value impact for single-family residential properties is generally cited as less than 10 percent, but in some cases has been 15 percent or more.
- Other factors (e.g., neighborhood, square footage, size, view, and shape of lot) are much more likely to be major determinants of the sales price of the property.
- Effects are most likely to occur for properties crossed by or immediately adjacent to the line.
- Effects are generally greater for smaller parcels than for larger parcels.
- Effects are greatest immediately after construction but decrease over time.
- Although there is no clear consensus about impacts of EMF on humans, there is enough concern over the issue that attitudes toward this effect may impact property values.

The majority of studies on property values and transmission lines have been in urban or suburban areas. It is anticipated that the construction of a 115 kV transmission line near or crossing private property would result in a small decrease in single-family residential property values. The more important factors are the location and shape of the property and the neighborhood. The largest impact is during and after construction, but this effect is mitigated by time.

### **Source**

Draft Environmental Impact for the Ojo Caliente Proposed Transmission Line

### **Other Sources**

Hamilton, S. and Schwann, G. (1995) Do High Voltage Electric Transmission Lines Affect Property Values? Land Economics, 71(4)

Charles J. Delaney and Douglas Timmons, High Voltage Power Lines: Do They Affect Residential Property Value? Journal of Real Estate Research. Volume: 7 Issue Number: 3 Year: 1992

### **Suggested Links**

Power Lines and Property Values: The Good, the Bad, and the Ugly, David R. Bolton, MAI, David R. Bolton, Inc. Austin, Texas, Kent A. Sick Womack, McClish, Wall & Sick, P.C. Austin, Texas published by The Southwestern Legal Foundation in the Proceedings of the INSTITUTE ON PLANNING, ZONING AND EMINENT DOMAIN, Municipal Legal Studies Center, Dallas, Texas, November 18-20, 1998; and The Urban Lawyer, The National Quarterly on State and Local Government Law, Spring 1999, Volume 31, Number 2.

The Effects of Overhead Transmission Lines on Property Values: A Review and Analysis of the Literature, Dr. Cynthia A. Kroll, Thomas Priestley, Ph.d., Aicp.

Power Lines, Visual Encumbrance and House Values: A Micro-spatial Approach to Impact Measurement, Francois DesRosiers, JRER Vol. 23 No.3-2002.

Property devaluation associated with nearby power lines # 6

And admission of EMFs' adverse health effects

Source:

[http://www.powerlinefacts.com/Resolution%20Denying%20the%20Applications%20of%20Xcel%20Energy%20\(Execution%20Copy\).htm#Property\\_Values](http://www.powerlinefacts.com/Resolution%20Denying%20the%20Applications%20of%20Xcel%20Energy%20(Execution%20Copy).htm#Property_Values)

### **EFFECT ON MARKET VALUES**

19.) The impact of transmission lines on the value of single family homes was a topic addressed in the Final Environmental Impact Statement for the Arrowhead-Weston Electric Transmission Line Project, filed in October 2000. This report is part of the record before the Council.

The report indicates:

- Concern or fear of possible health effects from electric or magnetic fields may decrease the market value (what a buyer will pay) of residential properties.
- A court has ruled that whether the danger of EMF is a scientifically genuine or verifiable fact should be irrelevant to the central issue of its market value impact.
- The potential reduction in sale price for a single family home caused by proximity to a transmission line ranges from 4% to 7% in the Midwest Area, including Minnesota.
- Effects on sale price are most often observed for property crossed by or immediately adjacent to a power line, but effects have also been observed for properties farther away from a line.
- Buyers' concerns about EMF can influence their decisions related to the purchase of property.

20.) As more buyers become more concerned about EMF, there will be a greater decrease in the market value of homes near the transmission line. Greater knowledge and concern about EMF will occur because almost all government agencies that have studied EMF have concluded that the public needs more information and education about EMF.

21.) Edina Realty and Coldwell Banker-Burnet are two leading real estate agencies in the Twin City area. Realtors from these agencies indicate that as buyers become more knowledgeable about EMF, there will be a negative impact on the values of

homes adjoining a transmission line. That negative impact will be more pronounced when the poles are larger and there are more circuits.

22.) Xcel's project will cause a reduction in the market value of the residential homes adjoining the line due to the fact that the prominent nature of the monopoles and circuits will acutely bring to the buying public's attention the facts of how close the line is to the homes and what the field strength is of the magnetic field at the right-of-way edge.

//snip//

#### **HEALTH RISKS – EMF**

23.) Electric fields are expressed in units of kilovolts per meter (kV/m) and magnetic fields are expressed in milliGauss (mG). The various inputs for calculations include voltage, load (amps), as well as conductor types and spacing and other specifics. Magnetic fields arise from the motion of electric charges, i.e. a current. The magnetic field emitted by a transmission line is a function of the amperage going through the line. In general, a magnetic field declines at the square of the distance from the source. Both vertical and horizontal distances from the line affect the mG value; the further one goes from the line, the less the mG value will be. Magnetic fields are not shielded by most common materials and pass easily through them.

//snip//

55.) High electric fields and high magnetic fields have adverse health effects based on studies of residential exposure and childhood leukemia as well as studies relating to miscarriages.

56.) Magnetic fields above 2.5mG are critical for children under the age of 14. Magnetic fields at 12mG are critical for adults with estrogen-sensitive breast cancer.

57.) The scientific evidence indicates that electromagnetic fields do seem to promote cancer in those already susceptible.

58.) The recent medical history of persons living near the existing line reveals adverse health problems similar to what the scientific literature identifies as being associated with EMF. Persons at the following addresses have had the following health problems:

<b><u>Address</u></b>	<b><u>Health Problem</u></b>
50 Sunnyside Lane	Several miscarriages
27 Sunnyside Lane	Parkinson disease
3 Sunfish Lane	Lou Gehrig Disease
2 Sunfish Lane	Breast Cancer

2 Sunfish Lane  
1 Sunfish Lane  
2144 Charlton Road  
2154 Charlton Road  
2158 Charlton Road  
2184 Charlton Road

Parkinson Disease  
Breast Cancer  
Colon Cancer and Prostate Cancer  
Bladder Cancer  
Pan Vasculitis  
Breast Cancer

59.) Constant and cumulative exposure of residents to EMF above 4mG poses an unjustified health risk. Such a health risk may even exist at 2mG.

60.) Electromagnetic fields are linked with leukemia, lymphomas, nervous system tumors and breast cancer as well as with various reproductive abnormalities. Although the scientific community has not yet demonstrated a casual relationship, the linkage and association are significant enough to require avoidance of EMF at levels above 4mG.

61.) The 50 foot wide right-of-way (25 feet from the towers) is too short a distance to adequately protect adjoining residences in light of the permanent nature of the project. Only at 75 to 100 feet from the centerline of the double circuit line does the mG factor drop to a level below 4mG. Levels of EMF that pose unjustifiable risks must not exceed the right-of-way boundaries of the utility's easement; the utility does not have property rights outside of its easement.

62.) The only way of limiting the unjustified health risk is to assure the setback from the centerline of the proposed project's transmission line is at least 75 to 100 feet so that the mG factor at edge of the right-of-way is at about 4mG at the predicted peak operating point of the transmission line. Xcel, on the other hand, proposes to install the replacement line in a 50 foot wide easement acquired in the 1920s. At that time, there was little knowledge about EMF. Now, in the year 2002 when Xcel does not have a pre-existing easement available, Xcel places 115kV lines in wider rights-of-way than 50 feet.

63.) Thus far, the State of Minnesota has not chosen to establish a uniform state-wide requirement for setbacks or for the mG factor. This is understandable in light of the wide range of land uses throughout the state that may adjoin a transmission line route. However, in Sunfish Lake, where the adjoining land uses are only residential and where the applications seek to expand a non-conforming use more than 75 years old, it is appropriate that the local government address the protection of the residents by examining what future mG factor will reduce the unjustified risks of constant and cumulative exposure to EMF.

64.) The authority of the City to make such an examination for this transmission line rests in the police powers and zoning powers of the City and in its authority under Minnesota Statute § 216B.36. The City has the authority to evaluate the health and safety risks of Xcel's project. No state agency has precluded the City from making a determination as to what mG level may be appropriate to eliminate unjustified risks of EMF.

65.) Communications from the Minnesota Department of Health (dated March 27, 2001; July 27, 2001; and December 20, 2001) have repeatedly stressed that local units of government (i.e. cities) must themselves examine the health risks of EMF in the particularized land use settings of each city so as to determine what might be an appropriate regulatory response in a given geographic area taking into account the surrounding land uses.

66.) Jan Malcom, the Commissioner of the Minnesota Department of Health (MDH), has stated:

From a public health standpoint, I am concerned about the level of magnetic field exposure to which certain residents are now and will continue to be subject.

\*\*\*

The SE Metro Line Project is projected to generate exposure levels 4-24 times as high as those in the studies on which the EQB staff is basing its recommendation.

\*\*\*

However, the evidence suggests to me that regulatory bodies should examine precautionary measures that will minimize exposure to EMF, especially in those situations where exposure would otherwise be particularly high.

67.) The Minnesota Environmental Quality Board (MEQB) acknowledged that cities will have the primary role of examining the health and safety issues relating to Xcel's project. In the MEQB's Findings of Fact, Conclusions and Order dated November 18, 1999, relating to the project, the MEQB in Finding of Fact No. 34 and in Conclusion No. 6 noted:

MEQB Finding 34:

34. The project is subject to local control, including conditional use permits. In addition, the project is subject to federal, state, or local permits, as described in the EAW. These permits will also help make certain that the project is constructed and operated in accordance with the project description provided to the MEQB for the EAW.

MEQB Conclusion 6:

6. ... Five of the six municipalities crossed have authority to approve the project with a Conditional Use Permit, and can include mitigation provisions in permits if they approve the project.

68.) The Minnesota Court of Appeals in the two year old decision of Power Line Task Force, Inc. vs. Public Utilities Commission indicated that the then current state of scientific knowledge and the record before the Public Utilities Commission did not justify that the existing transmission line be shut down. This is understandable in light of

the competing property rights of Xcel with respect to the existing line's protected non-conforming use status.

69.) The City is not examining whether to shut the line down. The City is examining whether it is reasonable to perpetuate forever the unjustifiable risks associated with EMF in the setting of a 50 foot wide right-of-way in a residential area.

70.) The Minnesota Environmental Quality Commission (MEQB) declined to order an environmental impact statement (EIS) for Xcel's project. The MEQB recognized that each city along the line would have to independently evaluate the health and safety risks of the project in order to protect its residents. Further, since the MEQB's refusal to order an EIS, the following studies have been added to the scientific literature indicating the adverse health effects of EMF:

- a.) September 2000 British Journal of Cancer
- b.) California EMF Project on Childhood Leukemia
- c.) UK Government Study on Childhood Leukemia
- d.) California EMF Project on Effect of Bias
- e.) Washington State Health on Childhood Leukemia Peak
- f.) German Environmental Ministry on Childhood Leukemia
- g.) California EMF Project on Miscarriages (2 Studies)
- h.) California EMF on Breast Cancer
- i.) Canada's National Research Council on EMF
- j.) Document titled "An Evaluation of the Possible Risks from Electric and Magnetic Fields (EMFs) from Power Lines, Internal Wiring, Electrical Occupation and Appliances" produced by the California EMF Program.

71.) It is the written policy of the City to examine all land-use proposals within the context of the City's Comprehensive Plan. The intrusion of a double circuit line with 80 to 110 foot high towers within a narrow easement that does not limit the EMF to the right-of-way is contrary to the following goals and policies of the City's Comprehensive Plan:

- a.) To protect and maintain the natural environmental resources throughout the community.
- b.) To protect residential development from adverse environmental impacts.
- c.) To insure that new development adheres to the highest possible standards for planning, design and construction.
- d.) To insure that land uses do not impair the quality of the air.
- e.) All new utility services shall be placed underground and when economically feasible, the conversion of existing overhead systems to underground locations is encouraged.



- f.) To insure coordination among all utility programs to constantly monitor and maintain all utility systems at a safe and high quality standard of service.

///snip///

**DECISION**

Based on the Findings of Fact and Conclusions made above, the City Council makes the following Decision:

The applications of Xcel Energy for a conditional use permit and for site plan approval and for a variance relating to its proposed project to replace the single circuit transmission line with a double circuit transmission line under City Code Sections 1201.06 and 1224.05 are hereby denied.

Passed this 5<sup>th</sup> day of February, 2002, by the Sunfish Lake City Council.

  4   Ayes

  1   Nays

  0   Abstain

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Frank Tiffany, Mayor

