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The Cardinal-Hickory Creek High Voltage Transmission Line and the Town of Vermont, Dane County, Wisconsin.

This report¹ outlines some of the history of a proposed Cardinal-Hickory Creek (CHC) high voltage transmission line which may cut across the Town of Vermont, located in Dane County, Wisconsin, and how the Town of Vermont has responded to that proposal. One concern of the Town is how the CHC may affect property values and the collection of property taxes for funding the budget of the Town. The paper outlines how the Town might assess the impacts of the CHC on property taxes.

1. Some History of ATC and Town of Vermont Interactions

American Transmission Company LLC, ITC Midwest LLC and Dairyland Power Cooperative, a cooperative organized under the laws of Wisconsin (referred to as “Utilities”), propose to construct and own a 345 kilovolt (“kV”) transmission line connecting northeast Iowa and south-central Wisconsin called the Cardinal – Hickory Creek Transmission Line Project². The line will be approximately 125 miles long. ITC Midwest owns the existing Hickory Creek Substation. ATC owns the Cardinal Substation and would also own a new intermediate substation³. Dairyland would own an undivided minority interest in all of the new 345 kV line. The majority interest in the new 345 kV line will be split by ITC Midwest and ATC. The typical right-of-way width for the Project “ would be 200 feet in Iowa and 150 feet in Wisconsin”⁴.

The Midcontinent Independent System Operator, Inc. (“MISO”), the regional transmission organization, has approved the CHC Project, together with a number of other projects (called Multi-Value Projects or MVPs) based on planning analysis allegedly showing these projects would provide multiple benefits⁵. This regional analysis has been quite useful in the past for coordinating investments in centralized large fossil fuel generation facilities connected to millions of users distant from the generating facilities. However, technological change making local renewable energy economical combine with threats of climate collapse to encourage consideration of more efficient energy use and grid management which in turn require new approaches for future investments in energy.

Based on the MISO plans, Figure 1 (prepared by ATC sometime in 2013 or early 2014) shows the preliminary options for corridors for the entire proposed CHC line from Iowa to Middleton, Wisconsin.

By 2014 ATC had decided on possible routes for the CHC project, avoiding Dubuque after the bombshell lobbed by the Dubuque City Council when it voted in early 2014 against one of the original routes through that city. So, by September 2014 ATC had woven enough of an image of the proposed transmission line to start informing the public along the CHC possible routes.

¹ Thanks to John Hess, Chair of the Town of Wyoming, Iowa County and David Perkins and David Wysocki from the Town of Vermont for helpful suggestions. All remaining errors and interpretations are solely those of the author

² Dairyland Power Cooperative, “Cardinal-Hickory Creek 345 kV Transmission Line Project Macro-Corridor Study”, September 28, 2016, from page 1-1.

³ Ibid p. 1-3

⁴ Ibid, p. 1-4

⁵ Ibid, p. 1-3

On September 17, 2014 the ATC Local Relations Consultant met with the Chair of the Town of Vermont and gave her a CHC fact sheet and an overview map showing the routing of the CHC from Hickory Creek, Iowa to Middleton, which might be built sometime in 2023. A vague idea was presented to the Town Chair, but in fact ATC was constructing a detailed plan. No landowner notices were sent out at that point, although ATC did publish notices in various newspapers about an upcoming open house to provide the public with more information. Two members of the Town of Vermont Board attended the open-house which ATC held in Middleton, October 9, 2014 .

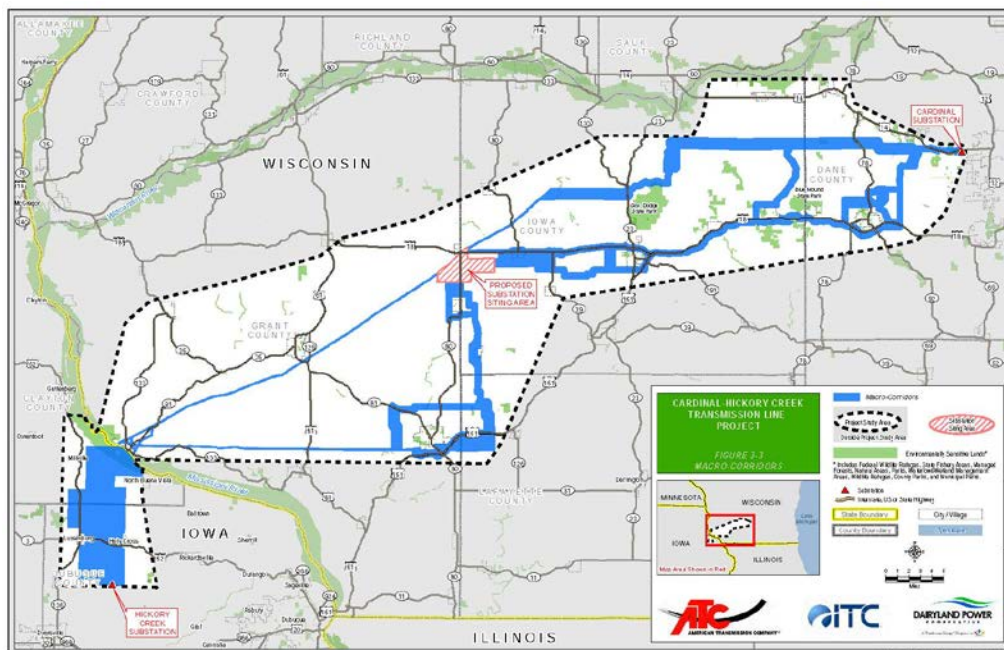


Figure 1: Preliminary Corridors for the CHC Line (Source: Macro-Corridor Study, Sept 2016, p. 3-10)

Concerning the Town of Vermont, there were several preliminary corridors identified at the second ATC organized open house in Barneveld on May 18-19, 2016. The main options for a corridor were across the northern third of the Town, and in the southeast corner of the Town bordering the Town of Blue Mounds and the village of Mt. Horeb before passing into the Towns of Springdale and Cross Plains.

Figure 2 shows more the preliminary corridors map for the CHC transmission line which was the basis of conversations that ATC had with the public at an open house on May 18-19, 2016 in the Deer Valley Lodge, Barneveld.

After this second open house, the cloud of a transmission line over the Town of Vermont had thickened. Following Wisconsin legal requirements, ATC had sent out notifications to landowners within 300 feet of the centerlines of the alternative corridors for the CHC that a transmission line might come through or near their properties. The ATC Local Relations Consultant again met with the Town of Vermont Chair on April 19, 2016, but was reluctant to give her a map of the proposed CHC corridors through the town. Not to be denied she whipped out her cell phone and took photos of the maps which she subsequently presented to the Town Board and citizens.

This map and the notifications which ATC sent to landowners and resulting conversations among Vermont resident after the Barneveld open house generated substantial citizen interest and discussions. On June 13, 2016 the Town of Vermont Board approved a Resolution requesting more information from the CHC utilities and the Wisconsin Public Service Commission. The Board in particular requested information about the costs and benefits of the CHC in comparison with costs and benefits of similar investments in improving electricity use efficiency, load management and the local generation and distribution of renewable energy.

On June 23, 2016 a citizens committee headed by Michael McDermott and independent of the Town Board was formed to explore alternatives to locating the CHC through the Town of Vermont as well as to assemble information about whether the CHC was actually needed at all. At the August 9, 2016 Primary Election at the Town Hall, members of this committee circulated a letter of support for the Board's June 13th Resolution, securing 270 signatures.

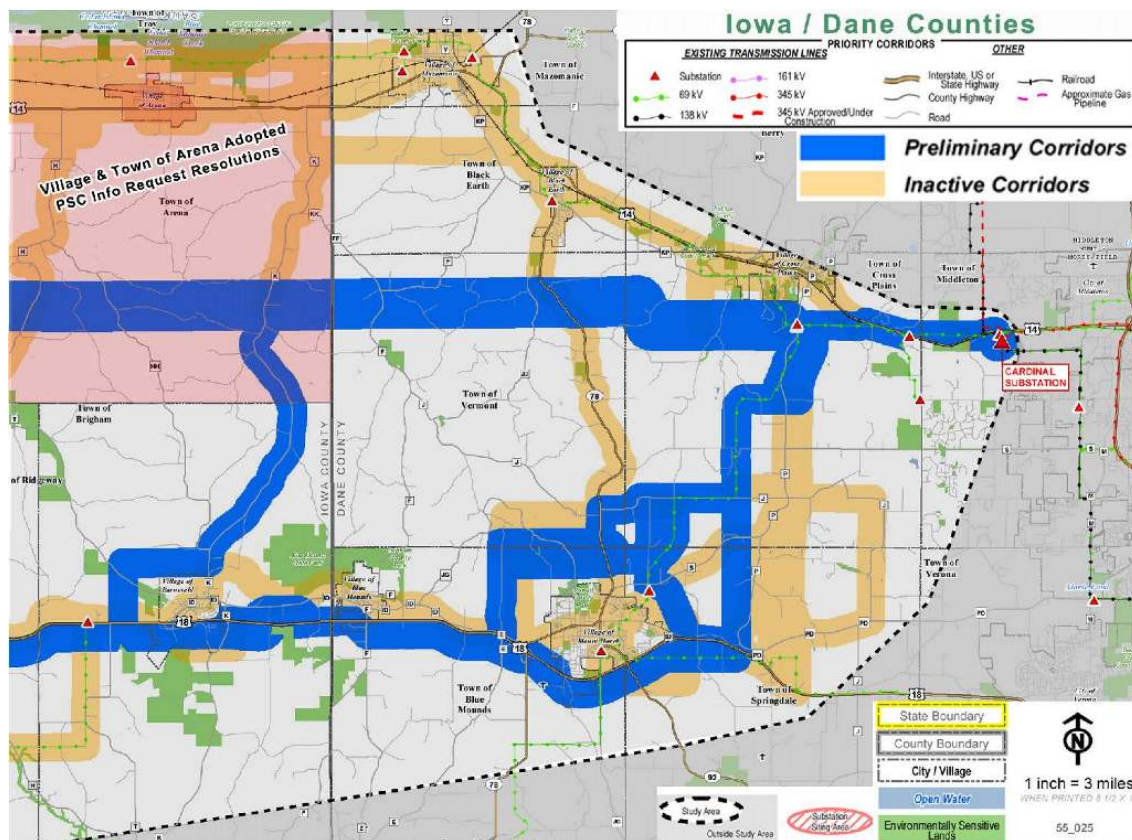


Figure 2: Detail of the CHC Preliminary Corridors Map as of May, 2016

The May, 19 2016 open house solidified the vague images in the minds of Town residents of a transmission line into potentially real corridors affecting real people. That was when people concerned about the land they enjoy as being threatened by huge towers, clearing of forests and humming high voltage transmission lines. Some realtors and property owners who had decided to put their properties on the market realized that the potentiality of the transmission line was affecting the values of their properties and their ability to sell them, since potential buyers simply looked elsewhere.

In September, 2016 an ATC person again called the Vermont Town Chair, wanting to meet her, perhaps to inform her of the new map of the CHC corridors which reflected comments ATC had received, showing a single corridor potentially going through the northern third of the Town as shown in Figure 3. The Chair indicated that she would be happy to meet with him, but with the other Board members present. ATC declined that idea, saying that staff did not have time to meet with Boards individually since there are so many Boards involved with the CHC.

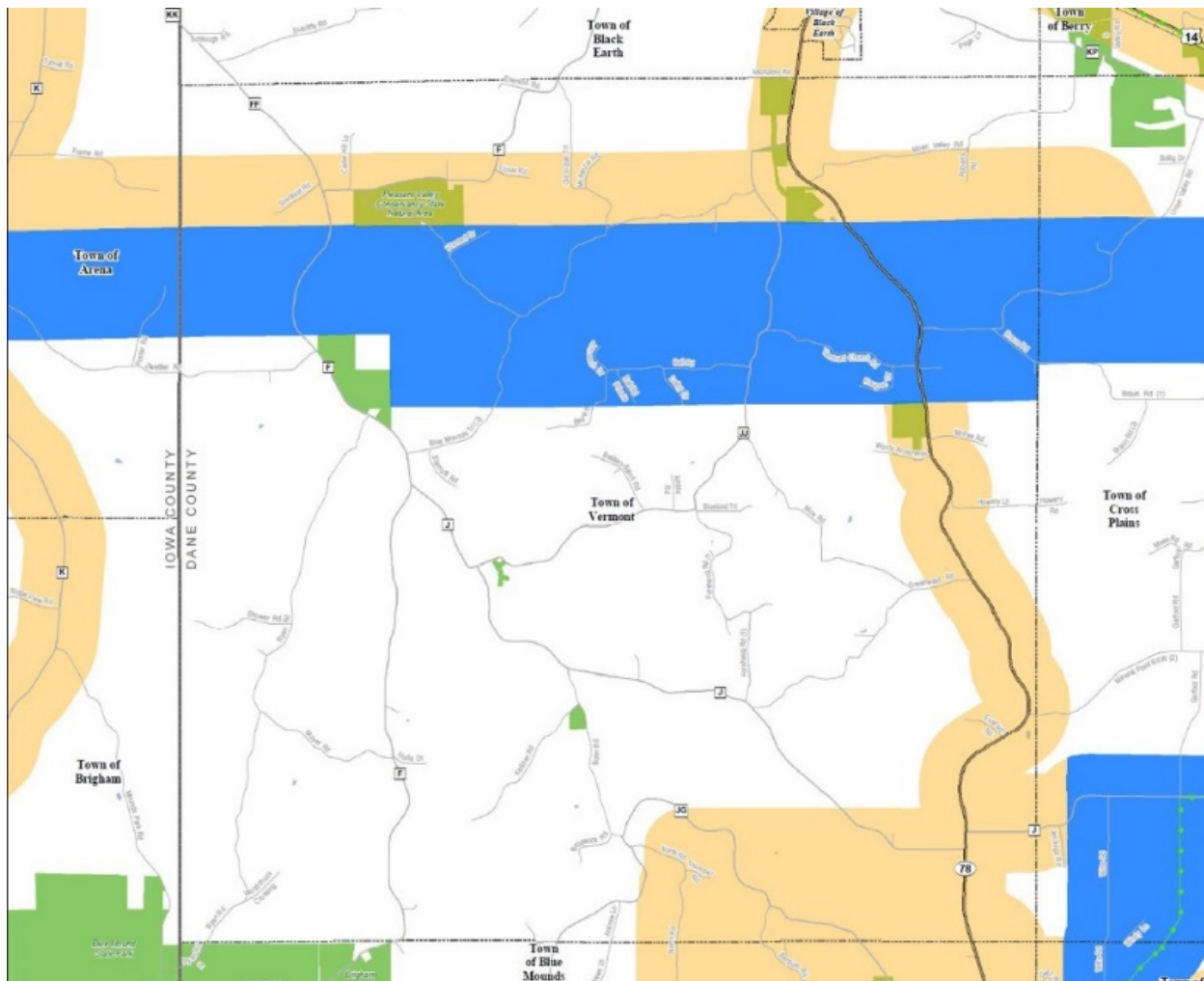


Figure 3: Preliminary Corridors for the CHC through the Town of Vermont as of Sept 2016 (Source: CHC corridor map on ATC web site accessed in November, 2016)

In mid October, 2016 the ATC Local Relations Consultant sent the Vermont Chair an extensive memo answering questions which he had identified about transmission lines and the CHC in particular.

That memo and ATC's reluctance to meet with the Town Boards individually, led to the decision of three Town Boards--Wyoming and Arena in Iowa County and Vermont in Dane County—to hold a joint meeting to inform residents about the CHC and options. If the ATC did not have the resources to meet with Towns individually, perhaps a joint, three Town meeting would be acceptable to ATC. So, a preliminary information meeting of the three communities was held on December 7, 2016 in the Arena school auditorium. Out of that meeting attended by over a hundred residents of the three Towns, the

Towns approved holding a Joint Town meeting with ATC. Representatives of the three Towns also formulated questions which would be asked of ATC, with a final date dependent on ATC/ITC/DPC preferences.

On January 30, 2017, the three Town Chairs sent a letter of invitation to ATC/ITC/DPC with copies to relevant legislators to meet either on March 9 or March 16, 2017 and discuss the Town formulated questions attached to the letter of invitation.

On February 8, 2017 ATC responded that the three builders were not able to attend any meeting with the three Towns.

2. The Towns' Need for Information from ATC/ITC/DPC

Each of the three Towns have sent Town Board approved resolutions to the PSC and the potential CHC builders asking for more information to justify the need for the CHC. No information has been forthcoming.

The three Towns together have invited the builders to a dialogue for the Towns to better understand the reasons which the builders have advanced about the need for the CHC. As of February 8, 2017 the three builders have refused to meet for such a dialogue at a meeting with the three Towns.

Why are the Town Boards so insistent about information from the builders of the CHC? The Town Boards have clear governance responsibilities which require information for good decision making:

- 1) Major construction projects like the CHC project which use land in the Towns should be in accordance with the Towns' Comprehensive Plans. The Town should know well in advance about plans for such projects, in order to negotiate with the builders so that the constructions are within the guidelines established in the Comprehensive Plans.
- 2) High Voltage Transmission lines affect the marketability and market values of properties in the Town which are close by the lines. When property values decline, property tax revenues also decline. That loss of revenue affects Town budgets, whose deficits have to be covered by raising taxes for all property owners in the Town. The Town has to be sure that such tax increases are clearly justified.

How might the Town of Vermont assess the potential impacts of the CHC on the finances of the Town?

With the help of a GIS expert, we extended the area of "CHC affected properties" from the ATC corridor map of September, 2016 to include properties 500 feet to the north of the northern corridors' boundary and 500 feet to the south of the southern corridors' boundary. While this extension of area is somewhat arbitrary, it does bring into our analysis those properties which are within the viewshed of the potential CHC line. Using Dane County's tax parcel data for 2014 overlaid with the map of CHC Affected Properties, we produced a list of properties within the area potentially affected by the CHC.

Table 1: Area of Town of Vermont Potentially Impacted by CHC

	# of Parcels ⁶ in Area Impacted by CHC	Assessed value of Parcels in Area Impacted by CHC	Estimated % decline of assessed value ⁷	Amount of decline in assessed value
Parcels w improvements=land+improvements	84	\$27,321,600	-20%	\$5,464,320
Parcels w. land only	189	\$7,495,200	-15%	\$1,124,280
All parcels in area impacted	273	\$34,816,800		\$6,588,600

Source: ATC CHC Provisional Corridor Map as of Sept 2016 and Dane County 2014 Tax Parcel Data. Note: there were 189 tax parcels without improvements, but also 13 parcels without data on value of land or value of improvement.

In the CHC line's potentially affected area, consistent with the Town of Vermont's rural character and low density of housing, in 2014 there were 84 tax parcels with improvements, presumably most with homes (some with outbuildings) and 189 tax parcels with no buildings at all (69%). The value of improvements on the 84 tax parcels (presumably including some farm outbuildings plus homes) plus the value of the land in the 84 tax parcels with improvements averaged a total assessed value a bit over \$325,000 per parcel.

How might the CHC affect the Town of Vermont financially? At least two owners of homes within the affected area of the CHC have not been able to sell their homes since they decided to sell early in 2016. Potential buyers contracted through realtors become aware of the possibility of the CHC, and prefer to buy properties which would not be affected by the CHCs. It seems likely that if these property owners are forced to sell, the prices they receive will be less than what the assessed value had been prior to the CHC provisional corridors had been defined.

If this possible decline in property values within the impacted area of the CHC actually occurs, the Town's generation of revenues from the property tax for its financial obligations may be threatened. For illustrative purposes, if we use an estimate of 20% decline in property values for the 84 parcels with improvements⁹ and 15% decline in values for the 189 parcels without improvements, we estimate a total decline in assessed property values to be \$5,464,300 for parcels with improvements and a decline of

⁶ The term "parcel" refers to tax parcels, not properties which may be composed of more than one tax parcel.

⁷ Personal communication from Karl Kaelisch, December, 2016

⁸ A prominent realtor who has arranged 9 property sales in 2016 has advised clients to consult with him about the implications of the CHC project on property values and marketability. See circular from Donald Sands.

⁹ Taken from Kielisch, Kurt (2011?). "Valuation Guidelines for Properties with Electric Transmission Lines", Appraisal Group One, Oshkosh, Wisconsin.

\$1,124,280 in value of parcels without improvements, or a total assessed value decline of \$6,588,600 for all the 273 parcels in the area potentially impacted by the CHC.

It should be noted that some studies such as the literature review by Jackson and Pitts¹⁰ have not found significant and consistent declines in the values of properties near transmission lines. However, the Kielisch review of studies of high voltage transmission lines and their impacts on residential and agricultural land shows consistent declines in property values although there are different effects in each case—that is, variability among cases can be significant. For our study of the potential impacts of the CHC high voltage transmission line, where we do not know the final routing of the line, we use conservative estimates for declines in value of residential land and non-residential land which are at the lower end of the Kielisch estimates.

So, what would be an estimate of how the CHC might affect the budgeting of the Town of Vermont? If we assume an immediate effect on property values after the decision is made to construct the line through the Vermont corridor, and if we use the Kielisch study's estimates of declines in property values in CHC impacted areas, the Town of Vermont Board should expect a decline in assessed values of properties which will be impacted by the CHC to be \$6,588,600. This decline of the CHC affected area would lead to a decline in the total assessed value of parcels in the Town from \$131.5 million in our base year (2014) as shown in Table 1. This decline would be 5.01% of total assessed value.

How might such a decline affect the Town's budget¹¹?

Using 2014 data:

- Amount required for Town expenses (the "Levy") = 424,069¹²

Total Assessed Value = \$131,526,300 (See: Page 113 of Statement of Assessment

<https://www.revenue.wi.gov/Pages/EQU/2014-soa.aspx>)

- Tax Rate = $\$424,069 / \$131,526,300 = .003224$, or \$3.224 per \$1,000 of assessed value

If the Town's budget requirements (levy) remained the same after the construction of the CHC, and if the assessed value decreased to 124,924,700 ($131,526,300 - 6,588,600$), the tax rate would increase to .003395, or 3.395 per thousand of assessed value ($424,069 / 124,924,700$).

This increase would be a perpetual increase in property taxes owed for each property owner every year, which will likely be accompanied by an increase in property owner electricity rates to pay for the construction and maintenance costs of the transmission line and the utilities' 10.2% return on investment, also for all practical purposes well into the foreseeable future.

Of course these estimates depend on what percentage decline in property values we use in the analysis. But even if one uses lower estimates for different types of properties in the Town of Vermont, an increase in property tax rate for all properties is likely.

¹⁰ Thomas Jackson and Jennifer Pitts, 2010, "The Effects of Electric Transmission Lines on Property Values: A Literature Review", *Journal of Real Estate Literature*, Vol 18, No. 2, pp 239-259

¹¹ This discussion derives from comments on an earlier draft of this paper by Mary Gawryleski, Director, Equalization Bureau, Wisconsin Department of Revenue. The author is responsible for any errors, however.

¹² Page 169 of 2014 Dane County Statement of Taxes

However, since the CHC will likely lead to decline of property values within the area of impact, property taxes actually paid, even with a higher tax (mil) rate, will likely decrease for these owners. The property owners whose assessments remain constant, or increase, outside of the area affected by the CHC, will be paying more property taxes. In other words, the tax burden will shift from those owners whose property values are declining in the CHC impacted area, to those whose property values are not declining—that is, everyone outside of the CHC impacted area in the Town¹³.

We have constructed two examples of what might happen to property taxes, one example of a house parcel near the CHC line with an average value of 325,000 before the construction of the line and a second being a house parcel distant from the CHC line, outside of the CHC affected area, with the same average value. See Table 2.

Table 2: Two Example Properties

	Outside the CHC Affected Area	Inside the CHC Affected Area	% Difference between two properties
BEFORE CHC:			
Value before CHC	\$325,000	325,000	0
Mill rate before CHC	0.003224	0.003224	0
Tax before CHC	\$1,048	\$1,048	0
AFTER CHC:			
Value after CHC	\$325,000	\$260,000	-20%
Mill rate after CHC	0.00395	0.00395	0
Tax after CHC	1283.75	1027	-20%
% change in Tax after CHC	22.52%	-1.99%	

These examples show that the tax burden shifts significantly in the Town of Vermont to the owners of property outside the area affected by the CHC. The taxes for an owner of a “house parcel” outside the CHC affected area would increase almost 23%¹⁴.

¹³ Observation of Mary Gawryleski, 2017, op cit.

¹⁴ Concerning the tax rates for purposes other than the Town budget, there may not be a change in obligations of the Town due to declining property assessed value in the CHC impacted area. As Gawryleski in observed in a personal email to the author: “The impact on the tax rates for the other taxing jurisdictions (school district, county, and tech college) is not as easy to measure. Using the county levy as an example, the apportionment of the County levy is based on each municipality's [Equalized Value](#), which changes each year. If property sales show that the market values of the properties affected by the power lines are decreasing, the Equalized Value will also decrease, which means the Town of Vermont's portion of the County's levy should also decrease. Theoretically, there should be very little, if any, change in taxes owed to the County, because the Town of Vermont will pay a smaller share of the County's levy. But it's important to note, that since every municipality's Equalized Value changes each year, the change in their portion of the County levy will not be equal to the decrease in their Equalized Value.”

It should be noted that the Town of Vermont assessor's impression¹⁵ from his work in the area is that transmission lines have not been affecting property values, although he does not present data. We have some specific cases in the Town of Vermont where property markets have been distorted by the potential CHC, meaning that the owners affected have seen declines in property values as what they expect to receive in sales from what the present owners had expected. Most reasonable observers would conclude that a high voltage transmission line crossing over or near their houses would obviously affect resale values; how could it not?

In summary, the shadow of the CHC even before it has been built has caused distress for some Vermont property owners who find themselves unable to sell at pre-CHC prices within the CHC impacted area.

It seems likely that if the CHC is built, it will lead to declines in property values within the areas affected by the CHC. The result would be increases in property taxes paid by landowners outside of the CHC affected area within the Town of Vermont, which for owners of house parcels may amount to a 23% increase in taxes paid. These issues deserves further attention as the story of the CHC project unfolds in the Town of Vermont.

¹⁵ Phone call on Jan 12, 2016 by Town Clerk with Steve Mahlik, Equity Appraisal, Vermont's assessor