

# High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects

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**T**here will be a significant expansion of the 345-kV transmission grid in New England over the next decade; this has raised issues on the potential effects of transmission lines on the value of nearby properties.<sup>1</sup> As will be reviewed briefly, the professional literature on the impact of high-voltage transmission lines (HVTLs) on residential real estate values is extensive. While the literature creates a relevant foundation for addressing the potential effects of new 345-kV transmission lines on property values, the current research is designed to investigate three outstanding issues.

First, most of the literature is somewhat dated. Of the most important studies (those that examined large numbers of sales using statistical procedures), only one study analyzes data from a period subsequent to 2000.<sup>2</sup> Since attitudes, behaviors, and their reflection in the market can change over time, it is important to have contemporary evidence on the question of possible property value effects.

Second, the construction that motivates this study is specific to 345-kV lines (which are mostly on 130-foot steel poles), while the historical research has no such focus and only occasionally has dealt with this corridor configuration.

Third, a careful analysis has to look at the interaction of three interrelated variables—proximity, visibility, and the extent to which an adjoining property is actually encumbered by the transmission line right-of-way easement. Since proximity and encumbrance are highly correlated, the effects of one could be

## ABSTRACT

In this study, over 1,200 home sales in 1998–2007 are aggregated into four study areas with a 345-kV transmission line. Field data are collected on the sale properties relative to proximity to and visibility of transmission line towers, and the extent of encumbrance by a transmission line easement. A multiple regression model is used to test whether the sale prices are affected by line proximity, tower visibility, or property encumbrance. In both continuous distance and distance zone models, the proximity and visibility variables typically fail to be statistically significant. The only variable that appears to have any systematic effect is the encumbrance variable; however, its magnitude is generally small.

1. This research was carried out under contract to Northeast Utilities over the period April 2008–October 2008. High-voltage transmission lines carry currents of 138 kilovolts (kV) up to 765 kV; see Energy Information Administration, “The U.S. Electric Power Industry Infrastructure: Functions and Components,” in *The Changing Structure of the Electric Power Industry 2000: An Update* (Washington, DC: U.S. Department of Energy, 2000), available at [http://www.eia.doe.gov/cneaf/electricity/chg\\_stru\\_update/chapter3.html](http://www.eia.doe.gov/cneaf/electricity/chg_stru_update/chapter3.html).

2. These studies will be referenced and summarized in the next section.