SECTION E

LAND & NEIGHBORHOOD METHODOLOGY

Explanation and results of Base land Rate and Neighborhood Classification:

Neighborhood classification begins with an understanding that every municipality can be segregated into areas, and differentiated by varying characteristics, such as type and quality of roads, topographic and scenic features such as views, surrounding uses, and the quality and/or maintenance of such uses, etc. Typically, these distinguishing characteristics result in differing market responses, in terms of the underlying land value, that can be positive or negative. Neighborhood classification, therefore, depends upon establishing a "base", or "average" land curve or rate for a Community. Once the base land curve or rate is established, a "schedule" of positive or negative neighborhood adjustments are developed corresponding to the degree of difference from the base.

The first preliminary step is to identify the neighborhoods, and establish the corresponding boundaries associated with each. This determination is also influenced by interviews with knowledgeable local brokers and real estate agents. Local sale data is then collected, specific to each neighborhood, and examined. Sales of vacant land provide the most direct and reliable estimate of land value. However, when an insufficient number of vacant land sales are available, a land "extraction" technique is utilized. The Land Extraction technique deducts the depreciated improvement value from the total sales price, resulting in the contributory value of the underlying land.

The two primary methods of valuing land are associated with the sales comparison approach. The "comparative unit" method enables the assessor to determine a typical per unit value for each strata of land, by calculating the median or mean sale price for unit. The "base lot" method requires the appraiser to establish the value of the standard or "base" parcel in each stratum through a traditional sales comparison approach, with the base lot serving as the subject parcel. Once the base lot value is established, it is used as a benchmark to establish values for individual parcels, with adjustments made to each parcel as a result of their unique or varying characteristics.

Whether by the "comparative unit" method, or the "base lot" method, a generic "base" value for land was established for each strata, reflective of the underlying market conformity of land values within the strata. Typically, there is an inverse curvilinear relationship between tract size and per acre prices. Larger sites are considered to sell for lower per acre values (all else being equal) and inversely, smaller sites are considered to sell for larger per acre values. However, at some point these differences become too insignificant to be recognized in the market, and no adjustment is justified. The base curve is then adjusted for location and geographical areas by utilizing neighborhood factors derived from the market.

Base Land Rate/Neighborhood factors: Residential land values were developed through the analysis of vacant land sales and the use of a land extraction technique. Land sales and land residuals that were considered to be arms-length transactions were utilized in the analysis. Sales were broken down into:

1. Street address
2. Parcel identification number – Map – Block – Lot – Unit
3. Neighborhoods
4. Date of sale
5. Sale price
6. Size of parcel – Acres
7. Price per square foot
8. Proposed value
9. Appraised to sales ratio – ASR
10. Any adjustments that are specific to that parcel – topography, wetlands, ROW's

Lots are arranged by parcel size and equal desirability. A distinct correlation of lot size versus value per square foot becomes apparent. Most frequently occurring similarities in sale prices relating to parcel size are plotted on a land curve. When a desired curve is achieved, land values are set for specific land size parameters, and a land schedule is finalized. A breakout of each neighborhood code is identified later in this report.

Due to the limited amount of arms-length vacant land sales, a land extraction technique was used to assist in the development of the land schedule. In this procedure, the depreciated building value is calculated. These values are compared to a National cost manual to ensure comparability to the market. These depreciated building values were subtracted from the sales prices to determine a land residual. When arranged by size and adjusted for location (neighborhood) and condition a distinct correlation between lot size and price per square foot becomes apparent. (See Land Curve Chart) These indicated prices per square foot were plotted to develop the land curve parameters for Portsmouth NH. Below is that graph:
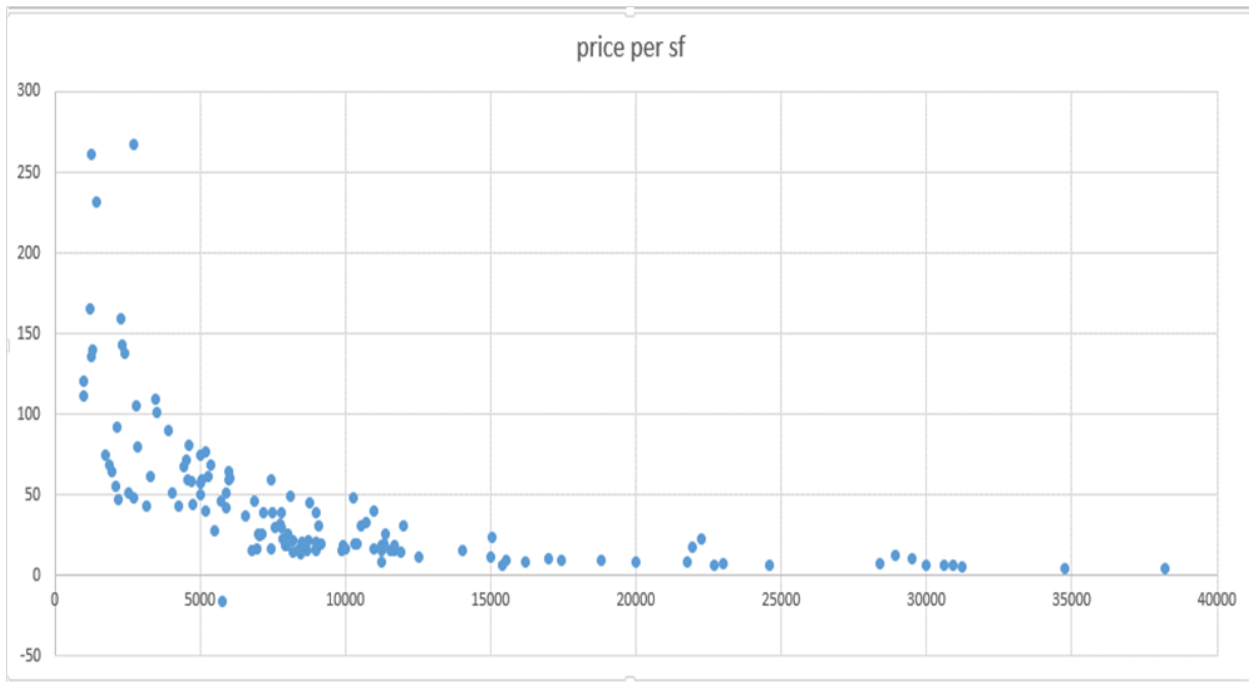
Taking into account all of the data regarding sales price comparative to lot size, the land curve for the municipality was set as follows:

Square Foot	Price/Square Foot	Base Value
500	$187.50	$93,800
1,000	$109.80	$109,800
5,000	$25.78	$128,900
7,500	$18.36	$137,700
10,000	$14.75	$147,500
20,000	$7.70	$154,000
30,000	$5.30	$159,000
43,560	$3.78	$164,700

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A detailed breakdown of this chart is in Appendix E: Land Tables

The proposed (schedules) values were then tested against the residuals. Multiplying the land size by the proposed price per square foot to yield a proposed land value tests the proposed land schedule. This proposed land value is then divided by the land residual to yield an assessment to sales ratio (ASR). Final determination of desired land values is completed by calculating the mean, median, and co-efficient of dispersion from the ASR.

The **MEAN** is the calculated average of all sales in a specific category. The sum of all assessment to sales ratios (ASR) is then divided by the number of sales to give a MEAN ASR.

The **MEDIAN** is the value of the middle sale in an uneven number of sales arranged according to size. Another way of describing it would be a positional average that is not affected by the size of extremes values.

The **CO-EFFICIENT OF DISPERSION** **(COD)** also known as the measure of central tendency, is the ratio of a measure of absolute dispersion to an average and expressed as a ratio of the standard deviation (amount of variability of scatter is a frequency distribution) to the median. In simpler terms, this is the tendency of sales or items being analyzed to cluster around a central point and/or specific value. The **COD** is calculated by subtracting the median from each sale ASR. Once this is complete, the sum total is divided by the number of sales and finally divided by the median itself. The resulting value is the co-efficient of dispersion. The International Association of Assessing Officers requirement is 20% or less for land ratios. When acceptable statistics are achieved, the final land schedules are implemented.

Market areas are delineated by the use of Street Indexes or Neighborhoods. The neighborhoods account for the varying desirability within the City of Portsmouth. The statistical requirements for land residuals are a median ratio between 90% and 110% and a COD under 20%. The neighborhood adjustments were developed through the land residual analysis. Below is the overall land residual analysis and neighborhood analysis. Neighborhoods with 5 or fewer sales have been given less weight and can be omitted as a land residual analysis with a small sample yields skewed results. All residential sales are included in the overall analysis.