



VILLAGE OF SCARSDALE

PREFACE

2016 Tentative Equalization Rate – Major Property Type A Report
Mr. Laurence Farbstein of Industrial & Utility Valuation Consultants, Inc.

The Village of Scarsdale engaged Laurence Farbstein, Industrial & Utility Valuation Consultants, Inc., to assist with an informal challenge to the NYS Office of Real Property Tax Services (ORPTS) preliminary equalization rate (ER). Pursuant to that charge, Mr. Farbstein issued a report dated September 21, 2016 (attached), wherein he argued that the Scarsdale ER should exceed 90%. Upon ORPTS' review of Mr. Farbstein's analysis, it was determined that he failed to undertake necessary statistical procedures required by ORPTS to eliminate the effects of Sales-Price Dependent Assessed Values (SPDAV). As a consequence, ORPTS considered his work incomplete and did not accept Mr. Farbstein's equalization rate conclusions. Upon discussing ORPTS' findings with their representatives, Mr. Farbstein was in agreement with the ORPTS determination and, as a result of his oversight in preparing the attached *2016 Tentative Equalization Rate – Major Property Type A Report*, agreed to waive the fee otherwise due from the Village of Scarsdale.



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Memorandum

To: Stephen M. Pappalardo, Village Manager, Village of Scarsdale N.Y.
From: Laurence P. Farbstein, President, IUVC, Inc.
Date: September 21, 2016
Re: 2016 Tentative Equalization Rate – Major Property Type A Report

As per our contractual agreement, this firm was asked to provide the following services, to wit:

1. Review and Analyze the NYSORPTS documentation that provided the basis for their Major Property Type A (Residential) tentative equalization rate (RAR), and
2. Prepare an independent statistical analysis under a series of different time trend assumptions to generate stratified weighted mean ratios for such RAR.

The following represent our findings in this regard.

NYSORPTS Major Property Type A Data Analysis

NYSORPTS provided, in both IBM-SPSS and EXCEL formats, the data and output files that they used in the calculation of the tentative RAR. These included a delineation of the sales that were used, the syntax coding for analyzing such sales, and the output files that formed the basis of the concluded tentative RAR. In this regard, NYSORPTS produced Ratios based on a 2016 T.AV/Time Adjusted Sale Price (TASP) as well as a ratio produced by employing a Computer Assisted Mass Analysis (CAMA) model utilizing a backward stepwise regression analysis.

Based on such review, it was clear that NYSORPTS employed the same methodological analyses that are used for all the other assessment jurisdictions, and were consistent with their published rules and procedures. As such, based on the sales data that the Village provided to them, there was no variation with regard to the Scarsdale calculations.

In the course of discussions subsequent to the derivation of the tentative RAR, it became evident that some of the sales utilized by NYSORPTS in the above referenced calculations were not valid and should be removed from the database. In part, this was due to the fact that a considerable number of properties were purchased for the land (that is, subsequent to the purchase, the building was demolished and a new structure was erected), and/or there was a significant change in value due to extensive renovations, remodeling, etc., subsequent to the purchase.

As such, the Village reviewed the sales database that NYSORPTS used for the period July 1, 2014 through June 30, 2015 and, based on such review, determined which of the sales were not valid (based on the above criteria) and provided to both NYSORPTS and this firm the revised sales data base.

IUVC Statistical Analyses

Based on the above, this firm's analyses are predicated on the accuracy of this revised sales data base. The analyses (which essentially track the NYSORPTS rules and procedures) are as follows:

Stratification Analysis:

Given that the NYSORPTS rules and procedures require that the RAR be based on a time adjusted sale price that utilizes the weighted mean on a stratified basis, it was necessary in the first instance to calculate such stratifications. In this regard a review of such rules and procedures indicated that an assessing jurisdiction having some 5,300 properties such as Scarsdale such AV's should be divided into 5 (quintile) intervals. This is due to the fact that sales are not normally distributed and the use of such stratified intervals by assessed values means that all assessment levels will be proportionately included in such analysis. As such, the data base for the residential property class based on the 2016 Total AV column was sorted by such total Assessments and such quintiles were determined. Attached please refer to the following two IBM-SPSS files:

- a. Subject Quintiles Data File
- b. Subject Quintiles Output File

Based on the results of such calculations, an EXCEL file was generated that produced the percentages that each quintile represented to the total. Attached please refer to the following EXCEL file that sets forth such calculation:

- c. Stratification Calculation.

Time Trend Analysis:

As discussed above, the NYSORPTS rules and procedures require that the sale prices be trended to the applicable valuation date (in this instance, to July 1, 2015). NYSORPTS customarily follows the IAAO recommendations that call for an analysis of the change in the assessment /sale ratios over time (typically monthly). In this regard, NYSORPTS calculated that the time trend for this period was 5%, i.e., properties that sold in July, 2014 were trended upward by such 5% (reflecting the full 12 months), sales that sold in subsequent months were trended by such 5% as adjusted for fewer months with the June, 2015 sales receiving no time adjustments.

In addition to this procedure, IAAO also recognizes that a time trend can be calculated from an analysis in the change in sale properties' sale price per square foot over time. In fact, this firm has employed this methodology with NYSORPTS in reviewing time trends for other assessing jurisdictions. In this regard, this firm utilized two years of sales, that is, from July 1, 2013 through June 30, 2015 (with the sales data base of July 1, 2014 through June 30, 2015 reflecting the revised data base discussed above).

This data base was expanded to include variables for the sales by month (MthDOS) as well as by season (QtrDOS) with the season divided by Fall, Winter, Spring and Summer as there is an argument that seasonal data will provide better results. In addition, consistent with the NYSORPTS methodology the variable sales price per square foot was transformed to its natural log to achieve a better normal distribution profile. Attached please refer to the following two IBM-SPSS files:

1. Time Trend Data
2. Time Trend Output

The output file consists of a series of statistical calculations that generated a normal distribution curve and a boxplot that graphically depicted the Interquartile outliers that would be removed. Again, this is consistent with the NYSORPTS methodology. The resulting sales data was then graphically plotted (scatterplots) that indicated such sale price per square foot over time, both on a MthDOS and QtrDOS basis, and for each such category, for both 2 years and 1 year. The scatterplots were then superimposed with regression lines (both linear and loess at the 50% interval).

This produced a four cell matrix that for MthDOS and QtrDOS, respectively, depicted the sale price per square foot for July, 2014 and for June 2015. The differences in the sale prices per square foot for the different time intervals was due to the impact of the regression lines being based on 2 years data vs. 1 year's data, with the 2 years data indicating the smoothing impact of using additional data points. Moreover, it should be further noted that there was very little difference in the results between the monthly and seasonal data. Attached please refer to the following EXCEL spreadsheet with 2 workbooks:

1. Time Trend Calculation
 - a. Valid Sales July 13_June 15
 - b. Time Trend Derived %'s.

A review of the Time Trend Derived %'s workbook will indicate a series of calculations for both MthDOS and QtrDOS, based on both 2 years and 1 year data. The average for such calculations was generated and the results were as follows: For the 1 year data, a 3% time trend was indicated; for the 2 years data (as smoothed) a 4% time trend was indicated. They are both less than the 5% utilized by NYSORPTS. It may be that given the significant change in the sales data base for the July 2014 through June 2015 period, NYSORPTS may adjust their time trend. In any event, for the purposes of this project, the stratified weighted mean ratios will be iterated by developing TASPS based on time trends of 3%, 4% and 5%.

Stratified Weighted Mean Ratio Analysis

Consistent with all the above, the sales data base was then expanded to produce TASPS for the above referenced time trends. The Stratified Weighted Mean ratios were then calculated in IBM-SPSS. Attached please refer to the following IBM-SPSS files:

1. Weighted Mean Ratio Data
2. Weighted Mean Ratio Output

These calculations were then exported to EXCEL and their results were set forth in the following Spreadsheet:

1. Weighted Mean Ratio Calculations

A review of this spreadsheet indicates the following:

- Based on the 3% Time Trend Factor, the Stratified Weighted Mean calculates to 92.15%
- Based on the 4% Time Trend Factor, the Stratified Weighted Mean calculates to 91.64%
- Based on the 5% Time Trend Factor, the Stratified Weighted Mean calculates to 91.10%.

These series of percentage are all above the NYSORPTS 88.48% tentative RAR.

We trust that this will be sufficient for your needs. If you have any questions and/or require further clarification, please let us know.

INDUSTRIAL & UTILITY VALUATION CONSULTANTS, INC.

Laurence P. Farbstein, President
Attchs: