Introduction to Vermont's Equalization Study

**Division of Property Valuation and Review
Vermont Department of Taxes**

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VERMONT
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Contents

I. INTRODUCTION

Vermont raises education funds through several tax sources including a state property tax. The state property tax is based on the grand lists compiled by the listers in more than 250 municipalities in the state. Each municipality's grand list is based on the fair market values of the properties located in the municipality. The Division of Property Valuation and Review (PVR) of the Vermont Department of Taxes conducts an annual equalization study of all municipalities in Vermont to assess the correlation of the listed values to sales prices for properties located within the municipality.

Vermont listers are required to list all taxable property each year at its fair market value. Fair market value is the price a property is likely to bring if sold on the open market by a willing seller to a willing buyer, both equally well informed and not under any compulsion to sell or purchase. However, listed values often do not reflect fair market value. .This is because real estate markets are always changing and because reappraisals are not conducted annually. In order to treat all municipalities fairly throughout the state, grand lists are evaluated and adjusted annually to bring each municipality's grand list to fair market value. The adjustment is made through the equalization study described in this publication. In general, the equalization study is based on a review of sales of real estate in each municipality throughout the state and the computation of a ratio of listed-value-to-sale-price on those sales that meet the criteria for an arm's length sale. The criteria for an arm's length sale include: a willing seller and a willing buyer with no significant prior relationship; reasonably equal access to knowledge about the property; and, absence of compulsion to sell or buy The ratios computed from the sample are applied to all similar property types within that municipality to determine a reliable estimation of the total fair market value of all taxable properties in the municipality.

Equalization studies have been performed in Vermont since 1963. Similar studies are regularly conducted by state governments in most of the United States for much the same reasons that they are conducted in Vermont.

II. PURPOSE OF EQUALIZATION STUDIES

Equalization studies measure the total value of taxable property in each town and school district in the state. The results are used to do the following:

1. Determine education tax rates

2. Apportion county taxes

3. Determine whether a municipality must undergo a reappraisal

III.   STATUTORY REQUIREMENTS

The commissioner is required to determine the equalized education property tax grand list and coefficient of dispersion (COD) for each municipality in the State. 32 V.S.A. § 5405. The commissioner's determination must take into consideration those factors required by 32 V.S.A. § 3481. The commissioner's determination is based upon such methods that are in the commissioner's judgment and in view of the resources available for that purpose appropriate to support this determination. 32 V.S.A. § 5405.

By January 1 of each year, the director of PVR must notify the town clerk and the board of listers of each municipality of the equalized education property value and COD for the municipality. The Secretary of the Agency of Education is notified of these values annually by April 1. 32 V.S.A §5406.

The equalized education property tax grand list is one percent (1%) of the town's equalized education property value (EEPV).

Any municipality may petition the director of PVR for a redetermination of its EEPV and COD and may further appeal a redetermination to the Valuation Appeal Board, a five-member panel appointed by the Governor. 32 V.S.A. § 5407. An appeal of the VAB decision can be made to the superior court and from there to the Vermont Supreme Court. 32 V.S.A. §5408.

IV. DETERMINING EQUALIZED FAIR MARKET VALUES

A. General Procedures

The general procedures for completing the study may be generally described as follows:

1) Data for each sale occurring in each municipality is collected using information extracted from the Property Transfer Tax Returns filed with the Department. Information from sales from the prior three years is used in the study.

2) The records of the sales are sent to the municipality where the instruments affecting the sales are recorded, for verification and a review of the circumstances of each sale. In addition, verification letters are mailed to sellers and buyers with an emphasis on sales that would constitute outliers to determine the circumstances of the sale. The results of the verification process are used to eliminate sales that do not represent an arms-length sale.

3) When there are insufficient sales (less than 5) for a reliable sample at the town level, supplemental appraisals are obtained to ensure that a reliable sample is available for equalization.

4) All sales that are approved for inclusion in the study are classified into the 15 grand list categories

Grand List Category Code	Use Class
R1 - Residential 1	Residential
R2 - Residential 2	Residential
S1 - Seasonal	Residential
S2 - Seasonal 2	Residential
MH-U - Mobile Home-Unlanded	Residential
MH-L - Mobile Home-Landed	Residential
C - Commercial	Commercial/Industrial
CA - Commercial Apartments	Commercial/Industrial
I - Industrial - Manufacturing	Commercial/Industrial
UE - Industrial - Electric Utility	Utilities
UO - Industrial - Other Utility	Utilities
F - Farm	Farm/Vacant
W - Woodland	Farm/Vacant
M - Miscellaneous	Farm/Vacant
O - Other	Category used to isolate a unique type of property, such as condominiums or lakefront properties

5) The ratio of listed-value-to-sales-price is calculated for all included sales. Individual ratios are examined for unusual values and are flagged for investigation, and possible exclusion from the sample.

6) The ratios for the included sales are aggregated at the grand list category, use class, and for the municipality as a whole. In addition, a statistical analysis is applied to determine whether the aggregated ratios are within a 10% margin of error at a 90% confidence interval for each of the grand list category and use class. If the aggregate ratio of the sample is reliable at the category or class level, that ratio is applied to equalize the category or class. If the ratios are not reliable at the category level, the class level is used. If the aggregate ratio is not reliable at the class level the ratio is computed at the municipal level.

7) The resulting reliable ratios are applied to the aggregate grand list value for the appropriate category, class or the municipality as a whole to compute the equalized education property value for the municipality. The equalized education property tax grand list is one percent (1%) of the equalized education property value for the municipality.

8) The coefficient of dispersion required by statute is also calculated from the results of the ratio study to assess the internal fairness of each municipal grand list. A high coefficient of dispersion indicates a need for a reappraisal.

The listers annually provide an abstract of the grand list (Form 411) to the town/city clerk who then certifies that information to the Department. This abstract contains the total listed value in each of the 15 grand list categories above and gives detailed information on stabilized and exempt properties.

C. Collecting Data: The Sales Ratio Report

A Property Transfer Tax Return (PTTR) is filed with the Department for every real property conveyance. Data from the PTTRs are entered into a database. All PTTRs are evaluated to determine if there are special factors indicating the sale was not an arm's length or fair market sale, such as transfers between related parties, transfers of rights-of-way, and transfers for which there is no monetary consideration.

A report is then produced for each town and city showing all sales that took place in the year prior to the assessment date (April 1) of the study. This report is provided to the municipal assessing officials electronically. They are asked to assist their PVR district advisor to further screen the sales and to correct any errors in the listed values, category coding, grand list descriptions, etc. The information for each transaction may be subjected to a further validation process in which the parties to the transaction are contacted by mail and asked to verify key information about the transfer that may have influenced the sale. Once the new sales information is validated, it is combined with validated sales information from the prior two years of sales information[1] previously reviewed by the local assessing officials to create the database used to make the calculations of common level of appraisal and the coefficient of dispersion for each municipality.

D. Analysis of Sales Data and Certified Sale Report

The validated sales are analyzed to compute the ratios used to best estimate the fair market value of all the taxable land in the municipality. There are three columns at the far right of the sales listings. Any outlier extreme and influential ratios (see Glossary) identified in that analysis is noted there. Those transactions that have special circumstances are removed from the sale sample before the ratios are computed.

Immediately following the sales for each category (R1, R2, etc.) are three groupings of information as shown below:

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[1] All three years of sales are screened and the listed values revised in the year of a reappraisal.

Grouping 1: Category Statistics—contains an overview of a number of statistics that describe the characteristics of the sales data within that property category, e.g. the median ratio and the coefficient of dispersion.

Grouping 2: Limits Established by Original Sales Data—contains the analysis used to identify the outliers and/or extremes noted above.

Grouping 3: Ratios and Confidence Intervals—contain the analysis used to determine whether the aggregate ratio can be used to equalize the category. The aggregate ratio is used when it is 90% sure that the true aggregate will fall within the parameters given. If that confidence level has been achieved, the line will indicate "YES" beside the statement "Category Sample Valid: 90% confident that true aggregate ratio is within 10% of sample ratio." If that confidence level is not achieved at the category level, and you see "NO," then the property in that category will be equalized using the ratio determined at a higher level of aggregation (class or townwide). The analysis at these higher levels of aggregation appears at the end of the "Certified Sales Report."

Many of the terms used above are defined in the glossary at the end of this document. The listers may contact their PVR district advisor or call PVR at 802-828-5860 with any questions.

V. Understanding the Computation Sheet

The "Certified Final Computation Sheet" shows the final data used to determine the town's equalized education property value, common level of appraisal, and coefficient of dispersion.

The Category, Property Count, and the Ed Form 411 Listed Value columns come directly from the abstract of the grand list (Form 411) filed by the town or city clerk. The other columns across the page from left to right include the following:

CUSE Value - Current Use Value. These figures are from the 2013 current use data, and represent the use value of farm buildings (at 0% value) and acreage that are enrolled in the current use program (32 V.S.A. chapter 124).

CUSE values are deducted from the Education and Municipal Listed Values prior to the application of the equalization ratios (the ratios are applied only to that portion of the grand list that was established by the local assessing officials, not to that portion required to be appraised at use value). The CUSE values (the per acre values for enrolled agricultural and forest land as set by Current Use Advisory Board (CUAB)) are added to the equalized (fair market) value to compute the equalized education and municipal values.

Education Listed Value Excl. CUSE - This is the education listed value as reported on the 411 form minus the CUSE values.

Municipal Listed Value Excl. CUSE - This is the municipal listed value as reported on the 411 form minus the CUSE values.

Applied Ratio - This is the equalization ratio that is used to adjust the listed value by category. For most categories, the Form 411 Listed Value divided by this ratio equals the Equalized Education Value of that category:

Form 411 Listed Value of Category / Applied Ratio = Equalized Education Value for category

However, for categories that include current use properties, there is another step. In order to calculate the Equalized Use Value of the category, reference the Current Use information on the back of the computation sheet (CUSE Value Used in Computations). The use value of enrolled land has been adjusted to reflect the use values as set by the CUAB. Here is the math for computing the property value using the Applied Ratio:

Education Listed Value Excl. CUSE / Applied Ratio (+ Use Value divided by CLA (from back side)) = Equalized Education Value of category

The bottom figure in the Applied Ratio column and the Grand Totals row, is the "Common Level of Appraisal" (CLA), which is defined in 32 V.S.A. § 5401(3). It is the sum of the Form 411 Ed Listed Values (including any cable TV listed as personal property) plus the foregone listed value of any local agreements divided by the Education Property Value:

(Education Grand List + Cable TV Personal Property + Local Agreement Values) / Equalized Education Property Value = CLA

Education Equalized Value - This column shows equalized values on a category basis. It does not include any value for Personal Property-Inventory, or Personal Property-Machinery and Equipment, which is still part of many municipal grand lists (and is the reason PVR distinguishes between an "education grand list" and a "municipal grand list"). The sum of this column, plus the value for cable TV personal property and local agreements, is the Equalized Education Property Value that is used in Vermont's education finance system (not listed as part of the certified final):

Ed Form 411 listed value + Cable + Personal Property + Local Agreements = Equalized Education Property Value

Municipal Equalized Value - This column also includes the fair market value of all nonresidential and homestead property required to be listed at fair market value, plus the aggregate use value of property enrolled in the Current Use Program, plus the value of personal property if the town or city taxes such property, plus the value of any local voted agreements.

Municipal Listed Values Excl CUSE + CUSE Value + Personal Property + Local Agreements = Municipal Equalized Value

COD – The Coefficient of Dispersion for the category as indicated by any sales. A zero means no sales were available to determine a COD. The certified COD, determined using all sales, appears to the right of the total equalized values, (see Townwide COD).

Average LV Incl. St. Exemption - This is the average listed value for the category.
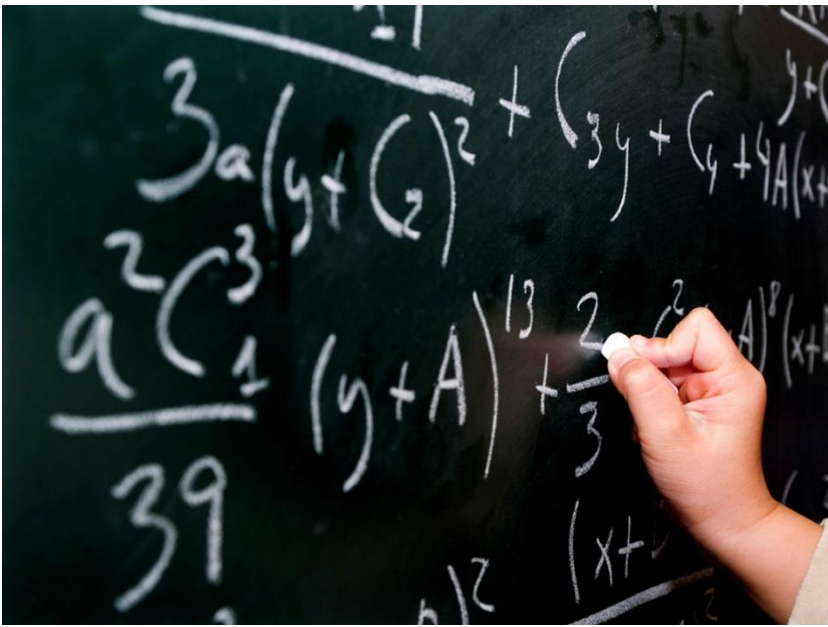
VI. Appeals

Petition for Redetermination - A municipality may petition the Director for redetermination of the Equalized Education Property Value and COD. The petition must be received within 30 days of the date the town clerk receives the study and must be signed by the chair of the legislative body (which is usually the selectboard or city council) or its designee. 32 V.S.A. § 5408.

The petition and hearing process is designed to be informal so municipalities will be encouraged to appeal if they feel aggrieved. Provided a municipality meets the statutory requirements mentioned above, the hearing is the municipality's opportunity to raise whatever arguments it chooses and to support these arguments with whatever evidence it feels is relevant.

A municipality has the burden of making its case and cannot rely exclusively on PVR to substantiate claims. A municipality is required to provide a short, plain statement of the matters being appealed and a statement of the remedy the municipality seeks. Redeterminations will be based exclusively on the evidence presented and its relative weight and on matters officially noticed by the Director or his designated hearing officer.[2]

For example, a petitioning municipality may decide to appeal the exclusion of certain sales and the inclusion of others. The municipality's short, plain statement should identify these sales and state that the municipality seeks to have the first group included and the second group excluded from the study.

During the hearing, the municipality should be prepared to support its petition with evidence. It should be prepared to rebut the exclusion or inclusion of specific sales referenced in its notice. If the municipality does not know the reasons for the exclusions, contact the district advisor and get an explanation. If the issue is whether the sale price in a specific sale represents fair market value, the hearing will typically focus on whether the specific sales were arm's length transactions between willing buyers and willing sellers and therefore good indicators of the fair market values of the properties. Copies of the related property transfer tax returns may help the municipality present its case.

For the sales that the municipality seeks to exclude, a statement from a lister or selectperson that "property X sold above its market value" is considered to be evidence. However, its weight may be inconsequential in the face of the presumption that a bona fide sales price reflects fair market value. A more persuasive argument for the elimination of a sale may be evidence (e.g. a sales verification form signed by the seller and/or buyer) tending to show that the transaction was not arm's length.

Notice of Tentative Redetermination - To help speed the petition process, PVR's district advisors will offer to meet with petitioning municipalities. PVR will consider the issues raised at the meeting. If appropriate, PVR will recalculate the municipality's equalized value and COD and issue a notice of tentative redetermination. To accept, the municipality must sign and return the stipulation enclosed in the notice within 10 days of receipt of the notice. If the municipality decides not to accept the tentative redetermination within 10 days, the municipality's hearing will proceed in accordance with its original petition for redetermination.

Appeals Beyond the Director's Redetermination - The Director's final redetermination may be appealed to the Valuation Appeal Board. Valuation Appeal Board decisions can be appealed to the superior court of the district in which the town is located and from there to the Vermont Supreme Court.

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[2] These requirements are consistent with the notice obligations contained in the Administrative Procedure Act. 3 V.S.A. §801 et. seq.

GLOSSARY

Aggregate ratio (weighted mean) - The sum of the listed values divided by the sum of the fair market values (sale prices and/or appraised values).

Arm's length transaction A transaction where the seller and buyer act freely, independently, and have no relationship with each other, such as relatives or business associates. This also includes transfers transfers of rights-of-way and transfers for which there is no monetary consideration.

Average ratio Sum of the ratios divided by the number of transactions.

Category (see also Use Class) – All real properties are classified into 15 categories based on highest and best use. For example, R1 refers to small acreage residential and UE to utility electric. The goal is to group properties with similar market influences together.

Class (see Use Class)

Coefficient of Dispersion (COD) - The coefficient of dispersion is a measure of equity. It shows how fairly distributed the property tax is within a town. A high COD (above 20%) means that many taxpayers are paying more than their fair share and many are paying less than their fair share. If a town's COD is higher than 20%, a town is required to reappraise. The COD is the average of the absolute deviations of each sales ratio from the median ratio, divided by the median ratio.

Common Level of Appraisal (CLA) - The common level of appraisal is the education property value (listed value) divided by the equalized education property value. Vermont law requires property to be assessed at 100% of its fair market value. If the CLA falls below 80%, a town is required to reappraise.

Confidence Interval (see also Confidence Level) – An interval calculated around the aggregate ratio. The high and low values in the interval form a range within which one can predict (within the limits of the confidence level) that the true ratio for the grand list exists. Vermont's study required that the interval not exceed a range of plus and minus 10% around the aggregate ratio. This is the maximum range of the interval. The actual range is generally considerably less but will depend on the size of the sales sample and its variability.

Confidence Level (see also Confidence Interval) – The required level of confidence to achieve a pre-established level of statistical reliability. Vermont's study is based on a 90% confidence level. This means that if we were to repeatedly select sales samples from a grand list, the resulting equalization ratios would be within the calculated confidence interval 9 out of 10 times. Ratios used for equalization are calculated at the lowest level of sales aggregation (see also Category, Class, Townwide and Use Class) that achieves the 90% level.

Equalized Education Grand List (EEGL) - One percent of the equalized education property value.

Equalized Education Property Value (EEPV) The equalized education property value, one percent of which is the equalized education grand list (EEGL), is an estimate of the taxable appraisal value.

Extreme Ratios (see also Outlier Ratios and Interquartile Range) **–** Extreme ratios are those identified as being markedly higher or lower than the aggregate ratio. If a ratio were identified as being extreme, its inclusion in the study would distort the results. Extreme ratios are therefore not used to calculate study results at any level of aggregation where they are identified.

Grand List - 1% of the listed value established by the local assessing officials. The *municipal grand list* is the value used to raise municipal taxes. It includes any personal property taxable at the local

level, and excludes locally voted exemptions. Properties subject to local stabilization agreements are included at their stabilized values.

The "education property tax grand list" (education grand list) is 1% of the education property value. 32 V.S.A. §5404. This is a value established by the listers. It does not include business inventory and generally does not include business machinery and equipment. It does include the value of properties exempted by local vote (if not "grandfathered"), and it includes the full value of properties subject to local stabilization agreements.

Influential Sales – Sales that exert an undue influence on the overall study results. A sale is influential if the town aggregate ratio with the sale <u>included</u> is outside the 90% confidence interval of the town aggregate ratio with the sale <u>excluded</u>. In other words, inclusion of the sale would affect the estimate of percent of fair market value more than could be expected given statistical sample uncertainty or margin of error.

Interquartile values / range (see also Outlier and Extreme Ratios) - The values that divide a set of ratios into 4 equal parts with the lowest observation equal to 0% and the highest equal to 100%. The interquartile range is the distance from the 25th percentile to the 75th percentile. These statistics are used to identify outlier and extreme observations. An outlier is defined as a ratio that is beyond 1.5 times the interquartile range from either the 25th or the 75th percentiles. An extreme is defined as a ratio that is beyond 3 times the interquartile range from the same percentiles.

Median ratio - The midpoint or middle value when the ratios are ranked in order of magnitude. If there is an even number of sales, the average of the two middle ratios is used.

Outlier Ratio (see also Extreme Ratio and Interquartile Range) – Ratios that are found to be statistically different from other sales ratios in a given sample. Outliers may deserve special attention to ensure they represent fair market sales.

Price-Related Differential (**PRD**) - The mean ratio divided by the aggregate ratio. The PRD is used to determine whether assessment practices are progressive or regressive. A PRD above 1.03 tends to indicate assessment regressivity (lower-valued properties assessed at higher ratios). A PRD below .98 tends to indicate assessment progressivity (higher-value properties assessed at higher ratios).

Reliable ratio (see also Confidence Level and Confidence Interval) – For this study, a ratio which is statistically accurate within a margin of error of plus or minus 10% at a 90% confidence level. The sale report indicates if this guideline was met at each level of sales aggregation.

Townwide (see also Use Class) - The highest level of sales sample aggregation in which all sales across all categories are included for a city or town.

Trimmed data (see also Extreme Ratios) – This refers to the data used to calculate the equalization ratio (i.e., the aggregate or weighted mean) and its confidence interval after any extreme ratios have been eliminated.

Use Class (a.k.a. Property Class Code) – The classification of properties into groups based on their use—for example, residential, commercial, utility, etc. All properties in Vermont are grouped into 15 categories. In conducting the equalization study, listed value to sale price ratios are calculated at the lowest level of aggregation that achieves a reliable ratio. If a reliable ratio can not be achieved at the category level, then the next higher level of aggregation (class) is used. If a reliable ratio is not achieved at this level, then the townwide ratio is used for equalization.