

# Reappraisal Activity Evaluation for the Equalization Study

## PURPOSE

This document explains how reappraisals are evaluated for the purpose of determining whether the reappraisal results should be used in the Vermont Department of Taxes' annual equalization pursuant to 32 V.S.A. § 5405. The evaluation process measures the level and uniformity of appraisals resulting from the reappraisal. The idea is to test whether all properties were treated fairly. If inequitable appraisal results are identified, the equalization study will be adjusted to ensure that a reasonably accurate estimate of value is determined by the study. This is necessary in order to maintain an equitable distribution of school tax revenues across all municipalities in Vermont. (Refer to *Appendix 1 - Reappraisals and the Equalization Study* for standard procedures on how reappraisals are treated in conducting the equalization study.)

## CRITERIA FOR EVALUATING REAPPRAISALS

The evaluation of reappraisal activity involves the calculation of three statistical measures detailed below. This is done using the reappraised grand list values and, where appropriate, comparing these values to the prior year's grand list values.

### Statistical Measures

The following measures are used in the evaluation.

#### 1) Equal treatment of sold and unsold parcels.

Definition – mass appraisal models should use factors extracted from sales to apply to all parcels based on property characteristics. It is expected that, on average, the percentage changes in listed value will be approximately equal between sold and unsold properties.

Measure – a comparison of appraisal value change between the two groups using the three years of data in the study. This will be done at the town-wide level by comparing the median percentage change for sold properties to all other taxable properties on the town's grand list.

Applicability – all complete reappraisals, statistical updates and rolling reappraisal in the final year. Refer to *Appendix 2 - Definitions of Reappraisal Types* at the end of this document.

Criteria – Vermont law requires proportional treatment of all taxpayers. Therefore, the percentage change should be approximately equal between the sold and unsold properties. If there is more than a 10-percentage-point difference between the median values to the two groups, then this indicates that the reappraisal has potentially failed to achieve a reasonable level of equity.

Additional comments – sold parcels are valid sales selected for use in the equalization study. Appraisal level change will be the median percentage change from the previous to current (reappraised) grand list value.

## 2) Equal treatment of homestead and nonhomestead properties.

Definition – Given the tax classification system, it is essential that the level of appraisal of homestead and nonhomestead properties be reasonably the same.

Measure - The median level of appraisal as determined by the new listed values of properties sold within the prior three years should be generally comparable between the groups. Groups evaluated will be Homestead versus Nonhomestead properties.

Applicability – complete reappraisals, statistical updates, and rolling reappraisals in the final year. Refer to *Appendix 2 - Definitions of Reappraisal Types* on page 5 of this document.

Criteria – Vermont law requires proportional treatment of all taxpayers. Therefore, the resulting level of appraisal should be approximately equal between the homestead and nonhomestead properties. More than a 10-percentage point difference between the median values for the two groups, indicates that the reappraisal has potentially failed to achieve a reasonable level of equity.

Additional explanation – Homestead properties are those declared as homesteads for the current tax year. The declaration status of the property as of April 1 of the current year governs the calculation. Valid sales used in the equalization study are classified according to the homestead declaration based on SPAN matching.

## 3) Reappraisal coverage.

Definition – Do all properties subject to revaluation show changed listed values?

Measure – percentage of properties that appear on both grand lists (current and prior years) with a change in listed value when compared to the prior year’s grand list.

Applicability – complete reappraisals, statistical updates, rolling reappraisals in the final year and a partial reappraisal that includes a change in land valuation for the entire town. Refer to *Appendix 2 - Definitions of Reappraisal Types* on page 5 of this document.

Criteria – Ninety-five percent of parcels should show change in listed value. This addresses the equal treatment of taxpayers due to the reappraisal.

For further details on how the above analysis will be conducted, please see *Appendix 3 - Statistical Notes*, at the end of this document.

## WHAT HAPPENS IF THE CRITERIA ARE NOT MET?

Based on the evaluation process described above, failure to meet the criteria for **any of the three measures** will automatically require further review.

All reappraisal towns are notified of the results of this evaluation process. If a town fails to meet the criteria on any of the measures, the Division of Property Valuation and Review (PVR) of the Vermont Department of Taxes requests a detailed written explanation with supporting sales and grand list data from that town. The explanation should be provided to PVR within two weeks of the time PVR provides notice of the results of the evaluation.

The report should provide a reasoned and empirically supported basis for why the observed inequity is not a valid indication of the appraisal practices employed in the reappraisal. Possible reasons could include:

- An error by PVR in its evaluation (e.g. inappropriate SPAN matches)
- Inappropriate identification of appraisal activity (e.g. the town reported a complete reappraisal but actually conducted some type of partial reappraisal)
- Limitations of the sales sample used in the evaluation (e.g. the sample is not reasonably representative of the grand list)

It is important to emphasize that a persuasive report should include actual sales and/or grand list information that supports explanation.

During this time the town is encouraged to talk with Department staff if they have questions about the evaluation results. Based on the evaluation of the report, a field review by PVR staff may be necessary. PVR may also request additional information including:

- Neighborhood delineation and land valuation schedule(s) used in the reappraisal
- Depreciation schedule(s) for improvements
- Sales book with SPANs for each parcel
- Statistics on the completed reappraisal, including 1) coefficient of dispersion (COD), 2) common level of appraisal (CLA) and 3) price-related differential (PRD). These could be town-wide, or by property type, or neighborhood depending on the issue.

PVR will make a determination as to how the reappraisal will be handled within the context of the equalization study. This determination is subject to appeal as part of the general appeals process for the equalization study under 32 V.S.A. § 5408.

#### **THE EQUALIZATION STUDY: IF A REAPPRAISAL IS NOT ACCEPTED**

PVR generally uses the following approach in its equalization study in the case that a reappraisal is not accepted. This does not preclude PVR from using a different approach if it's clear an alternative approach will result in a more accurate and reliable estimate of a municipality's equalized value and COD.

In the event that a reappraisal is not accepted, PVR will depart from its standard practice of using the town's new reappraisal values and current year grand list in conducting the study. Instead, the study will use the grand list values at the time of sale for all three years of valid sales data. These data will be used to compute the equalization ratios. All other standard practices will be followed including trimming of extreme ratios and selection of reliable equalization ratios. Instead of applying the resulting ratios to the current year Form 411 values, the prior year Form 411 values will be used. The values from the prior year will be adjusted by a factor to account for new construction and other forms of material change to the grand list. Where possible the "new construction" factor will be derived from town-specific data on grand list change from prior years. All the standard statistics associated with the study will be calculated, including the equalized education property value, common level of appraisal and coefficient of dispersion.

The results of the study will be made available to towns on or before January 1 each year, as required under 32 V.S.A. § 5406. The results will be subject to appeal as part of the general appeals process for the equalization study under 32 V.S.A. § 5408.

## APPENDIX 1

### REAPPRAISALS AND THE EQUALIZATION STUDY

The equalization study is a ratio study that makes adjustments to a town's grand list based on the comparison of listed values to sales prices. As a rule, the listed value at the time of a sale is compared to the sale price. This procedure does not work for reappraisal towns where the grand list has been updated to reflect more appropriate values. To evaluate a reappraised grand list it is necessary to use the new grand list values to calculate ratios that reflect the reappraisal activity in order to measure the status of the level of appraisal and uniformity of assessments resulting from the reappraisal. If improper reappraisal practices occur, the results of the equalization study will be distorted.

To avoid this it is imperative that only bona-fide reappraisal activity reasonably consistent with mass appraisal standards is recognized for the purpose of substituting new listed values for the equalization study.

Most towns reappraising in a given year will have already provided notice to PVR when they applied for reappraisal certification for the purpose of having their common level of appraisal (CLA) recalculated for setting their education tax rates. See 32 V.S.A. § 5406(c). For these municipalities, the information supplied to PVR as part of the certification process is sufficient for establishing reappraisal status for the equalization study. Sales information for all three years of the study will be made available so, where appropriate, listed values of properties subject to the reappraisal can be changed to reflect the new values. If there are other municipalities that have conducted reappraisal activity that should be recognized for the purpose of the equalization study, towns should notify PVR through their PVR District Adviser, of the reappraisal activity.

For reappraisal towns that did not participate in the reappraisal certification process, the following supporting information should be supplied to PVR:

1. An explanation of the need for reappraisal (e.g. reappraisal order and/or documentation detailing grand list inequities)
2. Personnel involved: names and qualifications of all people involved in the project; copies of any contracts if outside vendors were employed
3. Properties affected: Total number of properties in town; number of changed listed values; list of change of appraisal notices mailed, or reappraisal booklet

After receipt of this information, PVR will make a determination as to whether the municipality will be allowed to change the listed values of the reappraised properties for the purpose of the equalization study. In the event that PVR denies the request, the municipality may choose to appeal the results of the study using that denial as a basis for the appeal.

**Please be aware that general or routine grand list maintenance does not constitute a reappraisal.** Such maintenance generally involves a relatively small number of value changes limited to properties with physical changes, revaluation of sub-division (and combination) of land and name and address changes due to transfers. If revaluation activity is not substantial (e.g. does not qualify as a partial reappraisal pursuant to published guidelines), then our practice will be either to drop the sales that were subject to grand list change from the study or to include the sales in the study using the assessments in place at the date of sale. The assumption will be that properties subject to revaluation were equalized at the level of appraisal of the remaining town. In this case, there will be no substitution of new listed values.

## APPENDIX 2

### DEFINITIONS OF REAPPRAISAL TYPES

**Complete reappraisal** – the revaluation of all town properties including interior property inspections, development of new land and building pricing schedules, adjustments and factors. The goal must be to implement new values for all properties that reflect 100% of fair market value.

- 1) Tax maps are desirable to assure a complete parcel inventory with detailed land area information for each parcel.
- 2) To the greatest degree feasible, all parcels and buildings (95% is desirable) should be fully inspected and measured with documentation on property record cards. The documentation should show date of inspection, person performing the inspection, and all factors and criteria employed to generate the new listed value.
- 3) A sales analysis should be performed to establish land and building mass appraisal factors for property attributes (e.g. land schedule(s), building and land grading factors, depreciation schedule(s), building value base rates, outbuilding values, utility contributory values, etc.). The systematic estimation of value for every property should be performed based upon its attributes relative to these factors. Only through the uniform application of a systematic estimation process is it possible to properly calibrate a mass appraisal valuation model and then derive uniform and defensible grand list values. The non-systematic manipulation of the valuation model to reach the sales price of a recently-sold property is a form of sales chasing and is not an acceptable appraisal practice within this definition. An example is arbitrarily adjusting depreciation and/or quality grades to make a value that conforms to a sale price.
- 4) There should be sufficient sales to support reliable estimation parameters for land schedules, depreciation, etc. If sufficient sales are not available within the municipality, sales from other municipalities with comparable real estate markets, appraisals, or an expanded time period should be used to supplement the database. Documentation to support each of these actions should be maintained and be available.

**Statistical update** - Revaluation of all town properties, unlike a complete reappraisal, does not require onsite property inspections except to confirm validity of data for a sample of properties. The goal must be to implement new values for all properties to reflect 100% of fair market value. Note: If building permits are not required in your municipality and there is no program of systematic re-inspection of all property, this is not an acceptable method of establishing equitable values, because any inequities that currently exist within the grand list may be magnified when using a statistical update.

- 1) Tax maps are desirable with complete reappraisals.
- 2) Completion and documentation of an initial data quality study should be done to establish that the quality of the existing physical data currently on file is acceptable:
  - a) Select a random, representative sample of two percent to five percent of all properties. The size of the sample is dependent on size of the community, location mix (e.g. number of neighborhoods) in the community, age and style of the properties, number of years since the last date when all properties within the municipality were inspected and the nature of data maintenance programs used. The sampling process should be sufficient to ensure that existing property data is accurate concerning each significant type of property and neighborhood within the municipality. In other

words, in cases where there has not been a systematic inspection of all properties for several years, where you have a heterogeneous mix of properties or a large number of defined neighborhoods, you need to review a greater number of properties in order to determine the degree of accuracy of your existing data.

- b) For each sample parcel subject to review and after it has been inspected (including an interior inspection), you should correct any errors in the data and rerun the value for that property using your unmodified mass appraisal model from the last reappraisal. The original value is compared with the value that would have been in effect had more accurate data been available. You should then look at the level of discrepancy in values (old versus new). If the average level of discrepancy for any significant property type is large (say, in excess of 10%), then you need to evaluate whether there is sufficient integrity in the existing data to support a reappraisal based on a statistical update. In other words, if after correcting for data errors, the new values are on average significantly different from existing grand list values, then it is time to consider doing a complete reappraisal including inspections of all properties.
- 3) Sales analysis and mass appraisal guidelines are the same as for a complete reappraisal (see nos. 3 and 4 above under “**Complete Reappraisal**”).
- 4) Under most circumstances, a statistical update should only be done once. This is due to the likelihood of significant property changes that are inevitable over time. An exception to this would be if your municipality has instituted an ongoing system of periodic re-inspections covering all properties.

**Partial reappraisal** – a reappraisal activity that by design is targeted to either less than all properties in a town or adjustments to a limited number of factors that will result in a change of value but will generally not result in bringing the entire municipality to 100% market value. The goal of a partial reappraisal is to improve the appraisal equity among categories/types/neighborhoods of property within a town by bringing them to approximately the same level of appraisal as the rest of properties in that town.

- 1) Common types of partial reappraisals include land revaluation (which generally should only be done within five years of the last complete reappraisal), time and location adjustments to improvements or selective revaluation of identified categories of properties based on types and/or geographic areas (i.e., neighborhoods).
- 2) The extent of the revaluation activity is a characteristic that differentiates a partial reappraisal from routine grand list maintenance. Generally, to be considered a partial reappraisal the revaluation activity should impact on a significant percentage of grand list properties, such as 20 or more, or all parcels in a property category (e.g. R1, MHU, Other, etc.), geographic area, or property type.
- 3) The following guidelines should be considered when doing a partial reappraisal.
  - a) The grand list should undergo a sales analysis. The analysis should show that the level of appraisal of a portion of the grand list varies from other properties in the municipality in such a manner that adjustment is necessary to ensure that all properties are appraised at approximately the same level of appraisal. In making a determination that there is sufficient disparity in appraisal level to warrant reappraising a segment of the grand list, there should be sufficient sales to reliably identify the extent of disparity in level of appraisal. In the absence of statistical measurement, evidence from large samples—say, 20 or more sales—may be adequate to justify a partial reappraisal. The actual number of sales necessary is relative to the number of properties being evaluated and the variability in listed value to sale price ratios for the identified property type. For example, if you have 20 unlanded mobile home (MHU) properties, a small number of sales

may be sufficient assuming the sales analysis demonstrates a reasonably consistent level of appraisal.

- b) Guidelines for a complete reappraisal relating to inspection and measurement, sales analysis and parameter estimation also apply to the property subset being adjusted through a partial reappraisal. At a minimum, all sale properties to be used in the sales analysis should be inspected and measured.
- c) Properties in the subset should be valued at fair market value, **and then adjusted to the level of appraisal of the portion of the jurisdiction that has not been reappraised**. The level of appraisal for the non-reappraised portion of the grand list should be independently determined from a sufficiently large sales sample. Generally, the use of the town-wide CLA from PVR's equalization study is incorrect, as it would reflect all sales including those in the subset of property subject to reappraisal.
- d) The practice of annually adjusting some or all listed values of sale properties and only sale properties to a value at or near the sale prices is known as "**sales chasing**" and does not constitute a partial reappraisal. Further, it is not an acceptable appraisal practice.

**"Rolling" Reappraisal** – a type of complete reappraisal. What differentiates a rolling reappraisal from a complete reappraisal is that the rolling reappraisal is conducted and implemented over a period of years.

- 1) All of the elements of a complete reappraisal should be adhered to in conducting a rolling reappraisal including sales analysis and mass appraisal guidelines (see nos. 3 and 4 above under "**Complete Reappraisal**".) The mass appraisal factors established for the first year of the reappraisal should be used consistently for each intermediate year of the reappraisal. As part of the preparation for conducting a rolling reappraisal, there should be a **pre-established** plan laying out the time period of the overall reappraisal and the properties subject to revaluation in each of the years.
- 2) The time period for conducting a rolling reappraisal generally should not exceed three years. Depending on market conditions, a rolling reappraisal can be conducted over a longer timeframe but it is preferable to complete the cycle in as few years as possible as it becomes more difficult to maintain equity across appraisal values as the number of years in the cycle increases. This is particularly the case if market conditions at the time of the rolling reappraisal display significant appreciation or depreciation in values. This is due to the staggered schedule for inspections and a changing town-wide CLA over the period of reappraisal.
- 3) In any year of the reappraisal, the revalued properties should be valued at fair market value, **and then adjusted to the level of appraisal of the portion of the jurisdiction that was not subject to the revaluation (see also under Partial Reappraisal no. 3 (c)).**
- 4) Under most circumstances, it is likely that a new sales analysis will be necessary in the last year of the rolling reappraisal. The analysis will indicate the need for adjustments to the mass appraisal factors used throughout the reappraisal in order to achieve a 100% market value standard. In the last year of the cycle and after the necessary adjustments to mass appraisal factors, all properties should be brought to full market value.

**Grand list general maintenance** – revaluation activity on individual parcels intended to reflect changes not covered by the above definitions. Generally this involves a relatively small number of value changes limited to properties with physical changes, revaluation of sub-division (and combination) of land and name and address changes due to transfers. General maintenance does not constitute a revaluation activity subject to 32 V.S.A. § 5406 (c) certification.

### APPENDIX 3

#### STATISTICAL NOTES

- 1) When matching properties by SPAN from one year to another, care must be taken that the property definition is the same in both years. For instance it would be inappropriate to compare a building lot value one year with the value of a home on that lot the following year, even though the SPAN would not change.
- 2) Valid sales are those selected for use in the equalization study. They have been verified as arms-length transactions.
- 3) Trimming of extreme ratios within each group uses the International Association of Assessing Officers (IAAO) procedure from the 2007 Standard on Ratio Studies. An extreme observation is one that lies outside three inter-quartile ranges from the 25<sup>th</sup> or 75<sup>th</sup> percentile.
- 4) Statistical tests comparing groups will use non-parametric statistics. For tests of two categories (Sold versus Unsold properties or Homestead versus Nonhomestead properties) the Mann-Whitney test will be used. A significance level of 0.05 or higher at a 95% confidence level will be considered sufficient evidence of statistical equality. A significance level below 0.05 means there is sufficient statistical evidence to conclude that any difference in average appraisal level did not occur due to sampling error. Thus there appears to be a systematic bias in grand list appraisal levels.
- 5) No minimum sample sizes or sample reliability measures are required. Since the task is to use the available data to test the quality of a reappraisal the status of the data will drive the ability to detect differences. Therefore, available data will either be sufficient to detect significant differences or not. Small sample size and/or high variability in the data may lead to an inconclusive test result. Inconclusive statistical results mean the statistics are not reliable enough to confirm bias and the assumption will be that there is none.

