# Sales Ratio Study Criteria

## Minnesota Department of Revenue

### Study Year 2015

**Approved May 2015**

The Sales Ratio Study is required by Minnesota Statute 270.12 and is used primarily to equalize assessments of property and enhance valuation uniformity across property types. The Tax Court uses the Sales Ratio study to measure levels of unequal assessment. The Sales Ratio Study is also used for the calculation of various state aids. Finally, bonding companies use the adjusted estimated market values of cities and towns to measure fiscal capacities for bond rating calculations.

The Minnesota Sales Ratio Study adheres to the IAAO Standard on Ratio Studies whenever possible. Deviations from the IAAO Standard are outlined in this document.

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## I. Changes for the 2015 Study

- **CRV and eCRV:** The 2015 Sales Ratio Study will use sales that were submitted both on flat files and through eCRV. Data submitted through eCRV for sales that occur from October 1, 2014 through September 30, 2015 will be used for ratios and assessment statistics. These sales, as well as sales that were submitted on flat files that sold from January 1, 2014 through September 30, 2014 will be used for trend calculations and calculation of the ANTCs.
- **Appeals:** The appeals process is being modified to address timing issues and format requirements. More information will be provided in the fall. Go to Market Condition Trend Appeal Process for more information on the appeals process.
- **PRB:** The PRB will not be enforced in State Board Orders for this study year. Rather, the PRB will continue to be an informational statistic for counties to measure their vertical equity. The Data and Analysis Unit will be focusing on education of the PRB, including how to interpret the PRB and how to bring a PRB into compliance. The PRD and COD will continue to be enforceable by the State Board of Equalization. For more information on the PRB and other assessment statistics, go to Assessment Statistics.
- **Water types:** Water type codes have been updated for this study year. The new water types include lake, river, swamp/slough, pond/creek/stream, other, and none. For a detailed description of each of these types, go to Water Status.
- **Res/SRR Regions:** Counties should review their residential regions within their county and submit any requests for revised regions for the 2015 Study to their PTCO and the Data and Analysis Unit by August 31, 2015. Note that trends are calculated separately for on-water and off-water sales. Ratios are reported by water status and combined for residential and seasonal residential recreational property. On- and off-water regions do not need to make up the same geographical area. Go to Market Condition Regions for more information on regions.

## II. Items of Note

- **MCAST:** A new version of MCAST will be available for counties to estimate their trends, ratios, and assessment statistics. In this new version, ratios can be calculated by jurisdiction with a regional trend; statistics are calculated with and without extremes; and trends and extreme ratio bounds can be manually entered.
- **Neighborhood Code:** A neighborhood code is reported on the Market Value by Parcel File. This field is optional, but it may be a useful way for assessors to designate niche markets within a county for the Sales Ratio Study. If an assessor is aware of neighborhoods with an individual market, they should begin reporting neighborhood codes so the Data and Analysis Unit can identify those sales for further analysis.
- **Five-Year Study:** With the change to the forward-adjustment methodology, we have been rebuilding the database with year-to-year comparisons based on the new

methodology. With the 2015 Study, we will have five years of forward-adjusted data available to review for a small sample study.

- **Sales Lists and Edits:** The Data and Analysis Unit will continue to provide sales listings regularly starting in July 2015. It is important that counties work with their PTCOs to review and edit their sales lists in a timely manner. The sales ratio study process relies on edited sales data; delays in providing edited data can slow the entire process, including the timeline for issuing trends. Sales data is also used for a variety of other purposes beyond the sales ratio study, so it is important that each sale is correctly reported to the Department of Revenue.

## III. Overview of the Sales Ratio Study

In order to evaluate the accuracy and uniformity of assessments within the state and to ensure compliance with property tax laws, the Minnesota Department of Revenue conducts an annual Sales Ratio Study. This Study measure the relationship between appraised values and the actual sales price. As a mathematical expression, a sales ratio is the assessor's estimated market value of a property divided by its actual sales price, as seen here:

$$\text{Sales Ratio} = \frac{\text{Assessor's Estimated Market Value}}{\text{Net Sales Price}}$$

$$\text{Net Sales Price} = (\text{Gross sales price- personal property-seller paid points})$$

The Sales Ratio Study provides an indication of the level of assessment (how close appraisals are to market value on an overall basis), as well as the uniformity of assessment (how close individual appraisals are to the median ratio and each other).

Minnesota requires the reporting of sales information on an Electronic Certificate of Real Estate Value (eCRV). Assessors must verify and review sales information before it can be used by the assessor as part of the Sales Ratio Study. Certain sales are automatically removed from consideration, while others require more scrutiny and review by the assessor. When only verified sales remain, the assessor is able to analyze and study them to make some generalizations for the market and to make any changes in value to respond to the market.

The Sales Ratio Study is the culmination of the ongoing process of collecting information about the local real estate market. It provides important information in planning the upcoming assessment, evaluating the existing assessment, and identifying inequities in the assessment. There are other uses, as well. The state conducts the Sales Ratio Study to assist in assessment review and equalization and to aid the tax court. Many county and

local assessors also perform their own in-house sales ratio analyses. The Sales Ratio Study is used by assessors in refining their valuation levels, by the tax court in adjudicating assessments, by the State Board of Equalization in determining orders, and by various aid formulas that utilize measures of equalized values. By the time the Sales Ratio Study is finalized by the Department, there is an expectation that all the underlying sales data have been reviewed and are representative of the market.

There are five primary uses of the sales ratio study in Minnesota:

### State Board of Equalization Study

The Minnesota State Board of Equalization uses a 12-month study to judge overall levels of assessment. This study will use sales that occurred from October 1, 2014 to September 30, 2015. For this study, the median of all ratios within the reported jurisdiction and property type is used. The study looks forward to estimate what the ratio would be if the sales data were applied to the proposed assessor's values. The preliminary ratios for this study match the sales to the 2015 estimated market values, and the final ratios for this study match the sales to the 2016 estimated market values submitted on the Preliminary Market Value by Parcel file. The final ratios are used to equalize values and enhance uniformity across property types and between jurisdictions.

The Commissioner constitutes the State Board of Equalization and in that capacity is empowered to reduce wide disparities in assessment levels between counties and among the property types within counties. When the Commissioner of Revenue determines that there has been an unfair or inequitable assessment, the commissioner is authorized under Minnesota Statute 270C.94 to order a reassessment of any taxing district in order to make a correction.

This study may also help to guide assessors by providing information on which to base adjustments to the assessment with respect to neighboring counties.

### Tax Court Study

The Minnesota Tax Court uses a 9-month study and a 12-month study for property valuation cases. The 9-month study uses sales that occurred from January 1, 2015 through September 30, 2015. The 12-month study uses sales that occurred from October 1, 2014 to September 30, 2015. For both of these studies, the sales are matched to the 2015 estimated market values. The Tax Court prefers to use the 9-month "backward-adjusted" study because all sales used in the study occur after the assessment date. This Tax Court study is used to measure unequal levels of assessment (discrimination) within property types. A median ratio is used to measure the level of assessment equity.

### Adjusted Net Tax Capacities

A 21-month study is used to produce Adjusted Net Tax Capacities (ANTCs) for school and local government aids, as well as a variety of apportionments. The ANTC study will use sales that occurred from January 1, 2014 through September 30, 2015. Sales that occur in calendar year 2014 are adjusted backward and compared to the 2014 assessment and sales that occur in calendar year 2015 are adjusted backward and compared to the 2015 assessment. A weighted median ratio is used for all aid calculations.

### Railroad and Utility Equalization

The Department of Revenue's State Assessed Property Unit uses a 12-month forward adjusted study to equalize railroad and utility values. A median ratio is used.

### Economic and Indicated Market Values

The Economic Market Value study is a sales ratio-adjusted measure of a community's property wealth, using estimated market values as a starting point. Bonding companies use the adjusted estimated market value of cities and towns to measure fiscal capacities for bond rating calculations. In previous years, the adjusted-ratio study was based on taxable values and was called the Indicated Market Value Study. In 2011, Minnesota created a new homestead market value exclusion, which excluded a share of homestead property from the net tax capacity calculation, leading to a reduction in taxable market value. As a result, the wealth of a community was better represented by the estimated market value, rather than the taxable market value that has been reduced by the homestead exclusion.

Additionally, these studies are useful to legislators in developing tax policy and determining tax rates. Property owners may also use the studies if they have concerns about unfair or inequitable treatment by assessors.

## IV. Sales Reporting

### A. CRV and eCRV Submissions

The 2015 Sales Ratio Study will use sales that were submitted both on flat files and through eCRV. Data submitted through eCRV for sales that occur from October 1, 2014 through September 30, 2015 will be used for ratios and assessment statistics. These sales, as well as sales that were submitted on flat files that sold from January 1, 2014 through September 30, 2014 will be used for trend calculations and calculation of the ANTCs.

### B. Sales Submission Dates

All sales that occur from October 1, 2014 through September 30, 2015 and have been received by the county auditor's office by October 31, 2015 will be considered for the 2015 Sales Ratio Study. **These sales must be submitted to the Department of Revenue no later than November 10, 2015.** This cutoff date is necessary to allow county assessors and PTCOs sufficient time to review the reports issued by the Department of Revenue, for counties to appeal trends, and for the Department's appeals panel to meet and review appeals.

### C. Sales Listings

Starting in July, the Department of Revenue will begin regularly sending out lists of sale. Before trends are finalized, sales from January 1, 2014 through the date of the listing will be on the list. After trends are finalized, only sales from the 12-month study will be on the lists (October 1, 2014 through September 30, 2015).. Counties should work with their PTCOs to review and edit these sales to ensure that they are being reported properly for the sales ratio study.

### D. Reporting Agricultural and Rural Vacant Land Sales

The Sales Ratio Study requires reporting the number of acres in 2a and 2b land identified as tilled, pasture, meadow, woods, waste, exempt wetland, exempt native prairie, first acre site value, additional site value, ditches and roads, and other. In many parts of the state, sales will include a mixture of 2a and 2b lands; the acreage detail will allow us to group the mixed sales for additional analysis. We recognize that the total acres reported may not sum to the total deeded acres because of easements and classifications of properties where we do not track acreages.

As we prepare for the implementation of PRISM, the Property Record Information System of Minnesota project, we continue to encourage improved data quality in reporting 2a and 2b acres. As part of that effort, we are making the definitions we use for the 2a/2b breakdown consistent across eCRV, abstracts, and PRISM.

A table with the new 2a/2b eCRV breakdown, as well as definitions for each sub-classification type, can be found below.

## 2a/2b Classification Breakdown

| Classification | 2a Acres | 2a EMV | 2b Acres | 2b EMV |
|---|---|---|---|---|
| Tilled | | | | |
| Pasture | | | | |
| Meadow | | | | |
| Woods | | | | |
| Waste | | | | |
| Exempt Wetland | | | | |
| Exempt Native Prairie | | | | |
| Building Site | | | | |
| Additional Site | | | | |
| Ditches and Roads | | | | |
| Other | | | | |

**Tilled:** Real estate devoted to, or cultivated productively for, the annual growing of agricultural products for sale, or that is tillable even if currently fallow.

**Pasture:** Non-tillable real estate on which grass or other vegetation eaten as food by grazing animals grows, which is set aside for use by domestic grazing animals as part of a farm or ranch. (This usually requires fencing to restrict animal movement. Pasture land may include stands of trees if used for grazing by domestic animals.)

**Meadow:** Non-tillable real estate serving as a habitat of rolling or flat terrain where grasses predominate, typically containing a significant variety of annual, biennial and perennial plants. (Meadow is grass land from which hay could be cut, distinguished from tilled land where alfalfa has been sown.)

**Woods:** Non-tillable real estate having stands of trees, including integral open space, and including felled areas that are awaiting restocking. Woodlands may support an understory of shrubs, herbs, or grasses. (Some stands of trees could be considered "pasture" if used for grazing by domestic animals.)

**Waste:** Non-tillable real estate that cannot be used economically for agricultural use or production. Such land types include blowouts, river wash, marshes, swamps, sloughs (including wetlands covered all or part of the year with water, but not so deeply or permanently as to be classified as water surface per se), badlands, steep hillside, large deep gullies (including streambeds and banks, bluffs, and rock land).

**Exempt Wetland:** As defined by M.S. 272.02 Sub 11, "wetlands" means:

(i) land described in section 103G.005, subdivision 15a (as public wetlands);

(ii) land which is mostly under water, produces little if any income, and has no use except for wildlife or water conservation purposes, provided it is preserved in its natural condition and drainage of it would be legal, feasible, and economically practical for the production of livestock, dairy animals, poultry, fruit, vegetables, forage and grains, except wild rice; or

(iii) land in a wetland preservation area under sections 103F.612 to 103F.616.

"Wetlands" under clauses (i) and (ii) include adjacent land which is not suitable for agricultural purposes due to the presence of the wetlands, but do not include woody swamps containing shrubs or trees, wet meadows, meandered water, streams, rivers, and floodplains or river bottoms. Exemption of wetlands from taxation pursuant to this section shall not grant the public any additional or greater right of access to the wetlands or diminish any right of ownership to the wetlands.

**Exempt Native Prairie:** As defined by M.S. 272.02 Sub 12, and determined by the commissioner of the Department of Natural Resources as native prairie.

Pasture land used for livestock grazing purposes is not considered native prairie.

**Building Site:** First acre of a building site (1st acre of HGA)

**Additional Site:** Building site acres in excess of "1st acre site".

**Ditches and Roads:** Road, road right-of-way and ditch acres that are included in deeded acres.

**Other:** Any 2a or 2b land not included in the following categories: Tilled, Pasture, Meadow, Woods, Waste, Exempt Wetland, Exempt Native Prairie, Building Site, Additional Site, or Ditches and Roads.

## E. Special Situations

### i. Special Assessments

In most cases, special assessments should be ignored. The inclusion of special assessments can complicate the determination of sale prices, without significantly improving the accuracy of the study. Special assessments should be included in the

sale price only if the dollar amount of the assessment is included in the consideration and the cost of the assessment has contributed value which is also included in the current year assessor's estimated market value.

ii. **Non-Agricultural Bare Land Sales**

Non-agricultural, non-rural vacant bare land sales may be included in the State Board of Equalization study, but are not included in any ratio studies for state aids. Special codes are assigned to land sales so they may be identified and studied.

iii. **Split Sales**

Split sales of 2a, 2b and 2c lands consisting of at least 34.5 acres will be considered for the study. For example, if a farmer sells 40 acres from a 160-acre farm, this would be considered a good split sale.

County assessors are asked to make sure that value is split promptly and assign a new Parcel ID Number after the certificate of real estate value is filed to assure uniform treatment of split sales throughout the state.

Non-agricultural split sales are not used in the Sales Ratio Study.

F. **Guidelines for Accepting or Rejecting Sales**

All open market, arms-length sales should be accepted for the study. An "open-market sale" is one in which the buyer and seller are acting prudently, and the price is not affected by undue stimulus. Neither the buyer nor the seller must be under great pressure to complete a transaction in a short time. An "arms-length sale" is between two parties, both of whom are seeking to maximize their gain from the transfer.

The terms of a sale must be verified at the county level. The Department relies on counties to verify all sales. The Department of Revenue does not verify sales.

The Department of Revenue screens and conducts computer edits on all sales to help identify and flag sales that require additional review. In addition, residential and seasonal residential sales recorded on probate deeds or quit claim deeds and sales involving estates are automatically rejected unless the county assessor has notified the PTCO that all such sales were verified. The PTCO must agree with the verification before these sales may be considered.

The following list spells out the general types of sales that do not meet the acceptance criteria and should be rejected for the study. See the Appendix A: Reject Code Definitions for a more detailed explanation of each of these rejections.

## Sale Rejection Reasons

| Code | Reject Reason |
|---|---|
| 01 | Old sale outside of the 21-month study period |
| 02 | Relative sale or related business |
| 03 | Government or exempt party sale |
| 04 | Partial interest sale |
| 05 | Use change |
| 06 | Unusual financing |
| 07 | Physical change[1] |
| 08 | Correction deed |
| 09 | Trade, gift, or estate sale |
| 10 | Prior interest sale |
| 11 | Skipped CRV number |
| 12 | Unique reject reason |
| 13 | Duplicate CRV or eCRV |
| 14 | Sale of interest in or payoff of a contract for deed or mortgage assumption |
| 15 | Distressed or forced sale |
| 16 | Assessor value for sale year not available or split property sales |
| 17 | Excessive non-real property |
| 18 | Rewrite of terms or default on contract for deed |
| 19 | Relocation/employee transfer |
| 20 | Leaseback |
| 21 | Bank sale |
| 22 | Contract for deed sale with less than minimum down payment |
| 23 | Sale for less than minimum price |
| 24 | Sale of property in more than one county |
| 25 | Agricultural Preserve or other sale subject to minimum assessment agreement |
| 26 | Not typical market or doubtful title |
| 27 | Court ordered value |
| 28 | Nursing home or mobile home park |
| 29 | Allocated sale price |
| 30 | Assessor's value restricted by plat law in first year |
| 31 | Assemblage |

[1] See Net Improvements for more information on when these sales should be rejected

i. **Net Improvements**

The purpose of this section is to clarify the impact new construction and other physical change has on the following:

- 12- and 9-month Tax Court studies
- 12-month State Board study
- 21-month study for trends and aid calculation

Values for net improvements reported on the Market Value by Parcel file should reflect net changes in value, not just gross value of new construction. For example, if a homeowner demolished a garage valued at $35,000 and built a new garage valued at $65,000, then the amount of new construction reported should be $30,000 ($65,000 of the new garage minus the $35,000 value of the old garage). If your county is reporting the gross value of new construction, you need to notify your PTCO so we can make the necessary corrections to those values for sold parcels.

The Department of Revenue may adjust the 2014 EMV of a property by the amount of net improvement when calculating market condition trends. Go to Net Improvement and Market Condition Trends for more information on adjusting EMV for net improvement.

Not all sales with net improvement will be rejected from the state study. The following table and examples illustrate when sales should be rejected from the state study.

**Rejection Criteria for Sales with Net Improvements**

| Sale Date | Net Improvements | Status |
|---|---|---|
| **Oct 2014 – Dec 2014** | Before sale date and after January 2014 Assessment Date | Reject for all 2015 studies |
| | After sale date but before January 2015 assessment date | Reject for all 2015 studies |
| | After sale date and after January 2015 assessment date. | Good for the Tax Court studies and the State Board of Equalization study when the net improvements are subtracted from the 2015 estimated market value |
| **Jan 2015-Sep 2015** | Before sale date and after January 2015 assessment date | Reject for all 2015 studies |
| | After sale date but before 2016 assessment date | Good for the Tax Court studies and the State Board of Equalization study when the net improvements are subtracted from the 2016 estimated market value |

**Example 1:**
Sale Date: November 2014
Sale Price: $100,000
New Construction: $70,000 structure added in May 2014
Status: Reject by PTCO
Explanation: This sale would be rejected because the new construction occurred between the January 2014 assessment date and the November 2014 sale date. This sale would be considered invalid for all 2015 studies.

**Example 2:**
Sale Date: Nov 2014
Sale Price: $100,000
New Construction: $70,000 structure added in December 2014
Status: Reject by Regional Rep
Explanation: This sale would be rejected because the new construction occurred between the November 2014 sale date and the January 2015 assessment date, making this sale invalid for all 2015 studies.

**Example 3:**
Sale Date: November 2014
Sale Price: $100,000
New Construction: $70,000 structure added in July 2015
Status: Good
Explanation: This sale is good in relation to the 2015 estimated market value for the 2015 Tax Court study. However, to use the sale relative to the 2016 estimated market value the 2015 State Board study, *the amount of new construction that occurred in 2015 must be subtracted from the 2016 estimated market value.*

**Example 4:**
Sale Date: April 2015
Sale Price: $100,000
New Construction: $70,000 structure added in February 2015
Status: Reject by Regional Rep
Explanation: This sale would be rejected because the new construction occurred between the January 2015 assessment date and the April 2015 sale date, making this sale invalid for all 2015 studies.

**Example 5:**
Sale Date: April 2015
Sale Price: $100,000
New Construction: $70,000 structure added in July 2015
Status: Good
Explanation: This sale is good in relation to the 2015 estimated market value for the 2015 Tax Court study. However, to use the sale relative to the 2016 estimated market value for the 2015 State Board study, *the amount of new construction that occurred in 2015 must be subtracted from the 2016 estimated market value.*

## V. Methodology

The 2015 Sales Ratio Study follows the guidelines described in the International Association of Assessing Officers' (IAAO) *Standard on Ratio Studies*, April 2013. The following section describes the methodology followed by the Data and Analysis Unit when performing the Sales Ratio Study.

The 2015 Sales Ratio study will utilize sales that occurred from January 1, 2014 through September 30, 2015. The Sales Ratio Study only uses sales that were not rejected. It is up to the counties and the PTCOs to ensure that the appropriate sales are used in the Study. For the purposes of the Study, the sale price of all sales in the Study are adjusted by any personal property, business rights, or seller paid points included in the gross sales price.

In the case of a resale of a property, only the most recent, non-rejected sale is used in the Study.

### A. Financing

All sales in the 2015 study will be reviewed to determine whether financing adjustments are needed. Sales recorded on contract for deed or sales recorded on warranty deeds that include an assumption of an existing mortgage or a seller-provided mortgage will be adjusted. IAAO guidelines indicate that adjustments should be made **whether the adjustment is positive or negative.** Financing adjustments will not be made to new mortgages from third parties.

### B. Stratification

Sales within the study period are stratified into representative groups for market condition trend calculations and ratio calculations. Stratification is based on property type, region, and water status.

#### i. Property Groupings

We aggregate various property type codes to calculate market condition trends and ratios. The table on the following page shows the property types and groupings used for the Study. This table can also be found in Appendix B: Property Groupings for the Sales Ratio Study.

## Property Groupings for the Sales Ratio Study

| | Property Grouping | Description | Property Type | Description |
|---|---|---|---|---|
| Ratio + Trend | 02 | Apartments | 02 | Apartments |
| Ratio + Trend | 06 | Commercial | 06 | Commercial |
| Ratio + Trend | 07 | Industrial | 07 | Industrial |
| Ratio (metro only) | 90 | Bare Land LESS than 34.5 acres 2a, 2b, 2c, or mixed 2a/2b | 37 | Agriculture 2a - bare land less than 34.5 acres |
| | | | 39 | Rural Vacant 2b - bare land less than 34.5 acres |
| | | | 40 | Managed Forest 2c - bare land less than 34.5 acres |
| | | | 50 | Mixed 2a, 2b - Bare land less than 34.5 acres |
| Ratio + Trend | 91* | Residential/Seasonal Recreational Residential | 01 | Residential (less than 4 units) |
| | | | 03 | Non-commercial seasonal residential recreational |
| Ratio | 92** | Bare land MORE than 34.5 acres 2b, 2c, or mixed 2a/2b | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 48 | Mixed 2a, 2b - Bare land more than 34.5 acres |
| Ratio + Trend | 93 | Bare land MORE than 34.5 acres 2a, 2b, 2c or mixed 2a/2b | 32 | Agriculture 2a - bare land more than 34.5 acres |
| | | | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 48 | Mixed 2a, Rural 2b - Bare land more than 34.5 acres |
| Ratio | 95** | Bare land + Land with buildings MORE than 34.5 acres 2a, 2b, 2c, or mixed 2a/2b | 31 | Agriculture 2a - land with buildings more than 34.5 acres |
| | | | 32 | Agriculture 2a - bare land more than 34.5 acres |
| | | | 33 | Rural Vacant 2b - land with buildings more than 34.5 acres |
| | | | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 47 | Mixed 2a, 2b - land with buildings more than 34.5 acres |
| | | | 48 | Mixed 2a, 2b - Bare land more than 34.5 acres |

* Trends are calculated by water status, ratios are calculated and reported by water status and combined.

**Sales used in this property grouping are adjusted by the property grouping 93 trend.

Note that some property types fall within more than one property grouping and some property types do not fall into a grouping at all. Property grouping 96 is used as a catch-all for property types which are not used to calculate trends or ratios:

**Property Grouping 96**

| Property Type | Description |
|---|---|
| 08 | Public Utility |
| 09 | Railroads |
| 10 | Mineral |
| 14 | Seasonal Recreational Commercial and Resorts |
| 20 | Personal property |
| 21 | Residential Bare Land |
| 22 | Apartment Bare Land |
| 23 | Seasonal Recreational Bare Land |
| 26 | Commercial Bare Land |
| 27 | Industrial Bare Land |
| 30 | Exempt |
| 36 | Agriculture 2a - Land with buildings less than 34.5 acres |
| 38 | Rural Vacant 2b - Land with buildings less than 34.5 acres |
| 49 | Mixed 2a, 2b - land with buildings less than 34.5 acres |

### ii. Market Condition Regions

For the purpose of the Sales Ratio Study, regions are geographic areas that group together counties or cities/townships with similar markets. Ratios are issued for regions with at least six sales. Market condition trends, or trends, are determined based on sales ratios in designated regions.

There are four variables to consider when determining regions: property type, city, county, and water status. Each property type has a "base region," the area for which a trend is initially calculated. However, if there are less than 30 sales or the trend is insignificant in the base region, each property type may revert to the trend of a larger "default region."

County assessors should review their regions and submit any requests for revised regions for the 2015 Study to their PTCO and the Data and Analysis Unit by August 31, 2015.

Below is a summary table of each property grouping's base and default regions. The rest of this section will describe the specifics of each region and their market condition trends.

**Base and Default Regions by Property Grouping**

| Property Grouping | Base Region | Default Region |
|---|---|---|
| Agricultural/Rural Vacant (93) | County | Agricultural/rural vacant region |
| Residential/Seasonal Residential Recreational (91) ON-WATER | Residential region, remainder of county, or balance of county | County |
| Residential/Seasonal Residential Recreational (91) OFF-WATER | Residential region, remainder of county, or balance of county | County |
| Apartment (02), Commercial (06), OR Industrial (07) | County or first class city | None |

**Agricultural/Rural Vacant Property (Property Grouping 93)**
Agricultural/rural vacant regions are made up of at least two counties, and Minnesota is divided into 23 agricultural/rural vacant regions. See Appendix C: Agricultural/Rural Vacant Region Map to see the regions.

Agricultural/rural vacant trends are first calculated at the county level. If the county has a significant trend and at least 30 sales, the county receives its individual county trend. Otherwise, the county is eligible for the regional trend if the region has a significant trend and at least 30 sales. Counties with individual trends are still included in calculating the regional trend.[2]

Agricultural/rural vacant regions are not separated by water status.

**Residential/Seasonal Residential Recreational Property (Property Grouping 91)**
Residential/seasonal residential recreational regions are geographic subsets of a county. They should be areas with similar markets. Res/SRR regions range in size from an individual city or township to groups of cities and townships up to the entire county.

[2] When calculating the regional trend, the ratios are normalized. All agricultural/rural vacant ratios within each county are divided by the county median ratio. This brings all median ratios equal to 1.0 and eliminates the impact of different targets for assessment. However, when we use the natural log of the inverted ratio, the procedure takes care of the normalization. In other words, when we use the natural log of the inverted ratio to calculate trends, different targets are accounted for by the natural log.

Res/SRR regions are separated by water status. On-water and off-water regions do not need to make up the same geographical area. For example, Pine County could have four off-water res/SRR regions (North Pine, East Pine, South Pine, West Pine) but only two on-water res/SRR regions (Inner Pine, Outer Pine).

Res/SRR trends are first calculated at the residential region level. If the residential region has a significant trend and at least 30 sales, the residential region receives its own trend. Otherwise, the residential region is eligible for the countywide trend if the trend is significant and there are at least 30 sales in the county.

Only the part of a joint city in the county of location is used when calculating that county's countywide trend. If a joint city must default to a countywide trend, the whole city receives the home county countywide trend. See Appendix D: Joint Cities and Regions for the list of base and default regions of joint cities and the exceptions.

First class cities (Minneapolis, St. Paul, Duluth, Rochester, and St. Cloud) are never included when calculating a countywide trend, as their market might be significantly different than the rest of the county.

Counties should review their residential regions within their county and submit any requests for revised regions for the 2015 Study to their PTCO and the Data and Analysis Unit by August 31, 2015.

**Apartment, Commercial, or Industrial Property (Property Grouping 02, 06, or 07)**
Commercial, industrial, and apartment property share the same regions, but the trends for these different types of properties are calculated separately from each other.

Generally, regions for these property types are either first class cities or individual counties. Moorhead is treated as a first class city for this purpose, and Hermantown is included with Duluth. These first class cities are not included in the countywide trends.

These property types do not have a default region. If their base region does not have at least 30 sales and a significant trend, the region receives no trend.

Commercial and industrial property types are considered separately for the purpose of calculating trends when feasible. These two property types may only be combined to determine a regional trend when there is not an adequate sample of sales in each class.

Commercial, industrial, and apartment regions are not separated by water status.

### iii. Water Status

Water status is reported on the Market Value by Parcel file. There are currently six codes to indicate water status. Properties on lakes, rivers, ponds, creeks, and streams, and properties with other water influence, are considered on-water for the Sales Ratio Study. All other properties, including properties on swamps or sloughs, are considered off-water for the Sales Ratio Study. It is important for counties to accurately report a property's water status in order to perform the proper analysis.

The following codes should be used to indicate a property's water status:

**L:** The water code type "L" should be used for property physically located on, or having immediate access to, a lake with a valid DNR issued Lake ID. This includes properties with egress accessibility or located across the road with a dock. If a building has shared immediate access to this water, units with shared access *and* a view should be indicated with an "L." Property with an "L" water status will be considered on-water for the Sales Ratio Study.

**R:** The water type code "R" should be used for property physically located on, or having immediate access to, a river or stream with a valid DNR issued River ID. This includes properties with egress accessibility or located across the road with a dock. If a building has shared immediate access to this water, units with shared access *and* a view should be indicated with an "R." Property with an "R" water status will be considered on-water for the Sales Ratio Study.

**S:** The water type code "S" should be used for property physically located on a swamp or a slough. Property with an "S" water status will not be considered on-water for the Sales Ratio Study. In some instances, a swamp or slough may add value to a property. In those instances, the county should work with their PTCO to determine whether the property should be indicated with a "P".

**P:** The water type code "P" should be used for property physically located on a pond, creek, stream, or other small body of water. These bodies of water should not have DNR issued IDs. Anything with a valid DNR issued ID should be reported with an "L" or an "R." Property with a "P" water status will be considered on-water for the Sales Ratio Study. In some instances, these bodies of water have negative or no influence on the value of a property. In those instances, the county should work with the PTCO to determine whether the property should be indicated with an "S".

**O:** The water type code "O" should be used for property that does not qualify for the other indicator types but that does have some sort of water influence on value. These properties may include but are not limited to properties across the street from a body of water, with no egress accessibility or dock, or units within a building physically located on a body of water with shared access but no view. Properties with a water status "O" will be considered on-water for the Sales Ratio Study.

**N:** The water type code "N" should be used for properties that are not on any type of water and do not have any water influence on value. Properties with a water status "N" will be considered off-water for the Sales Ratio Study.

### C. Extreme Ratios

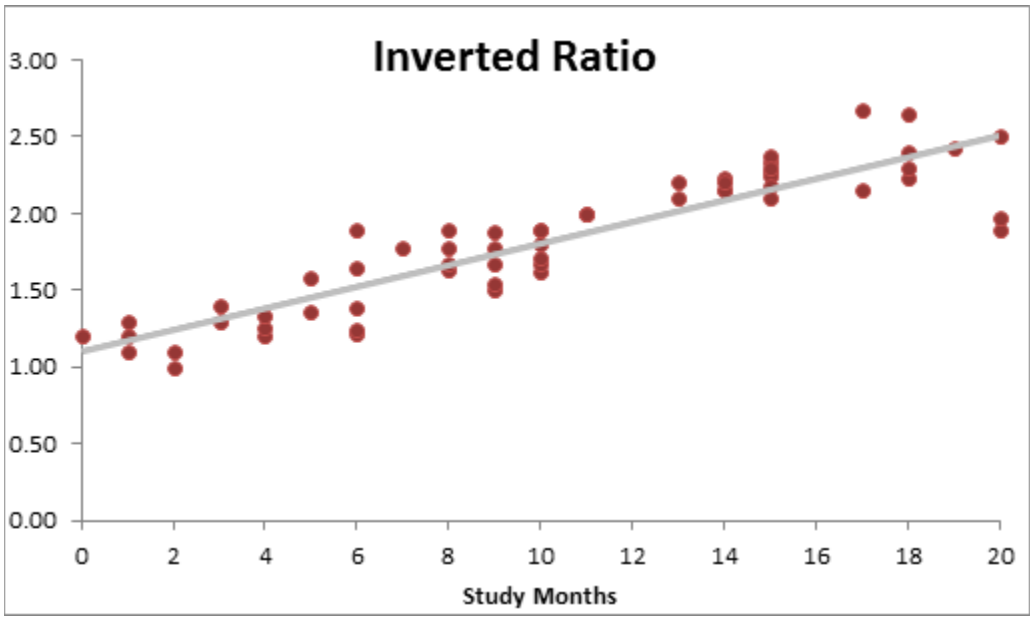
The IAAO *2013 Standard on Ratio Studies* addresses the issue of extreme ratios and acknowledges that outlier sales can cause distortion, especially when the sample is small. The Data and Analysis Unit will flag outlier sales but will not automatically remove these sales from the study. Outliers are included in sales listings and trend and ratio calculations but are excluded from the assessment statistic calculations.

Sales should not be automatically rejected solely because of extreme ratios. Extreme ratios, whether high or low, are not a valid reason for rejecting or accepting a sale. Extreme ratios usually indicate a sale where extra verification is required. Extreme ratios could be the result of an error on the certificate, physical change to the property, or a processing error. If the extreme ratio resulted from a data error, the sale could be used after the corrections were made; if the corrected sale still has an extreme ratio, additional verification should be attempted. Sales with the most extreme ratios will be flagged for further review by the PTCOs.

Prior to the 2014 Sales Ratio Study, sales with ratios below 50% or above 200% were considered extreme ratios. These arbitrary limits were used in an effort to make our study replicable at the county level. Extreme ratios are now calculated using the interquartile range (IQR). The IQR methodology uses the distribution of the ratios to establish new boundaries for extremes.[3] With these new boundaries, ratios above 200% might be included, as long as the methodology suggests that it is part of the distribution of sales. For example, the graph below represents a region experiencing rapid increases in sales prices over the study period. In this scenario, trimming all sales greater than 2.0 would not be representative of the market.

[3] The formulas used to determine outliers are provided in Appendix B of the IAAO 2013 *Standard on Ratio Studies*.

Rapidly Increasing Market Example




Sales with ratios outside of the lower and upper boundaries determined by the interquartile range methodology are considered outliers and will be considered extreme ratios. These limits fall approximately 2 to 3 standard deviations from the mean ratio.

The steps needed to calculate the interquartile range are as follows:

1. The point for the first quartile (the point where 25% of all ratios fall below) is calculated.
2. The point for the third quartile (the point where 75% of all ratios fall below) is calculated.
3. The **difference** between the first and third quartile is calculated.
4. Lower and upper boundaries are calculated in order to identify outliers. An outlier is defined as either a ratio that is 1.5 times the **difference** below the first quartile or a ratio that is 1.5 times the **difference** above the third quartile.
   Lower boundary=First quartile-1.5(**difference**)
   Upper boundary=Third quartile+1.5(**difference**)

For consistency purposes, extreme ratios are calculated at the base region level. For example, for agricultural/rural vacant properties, extremes will be calculated at the county level, and for residential properties at the residential regional level. These extreme ratios continue to be considered extreme throughout the rest of the process.

Mean, median, and aggregate ratios are calculated with extremes. Assessment statistics and trends are calculated without extremes.

### D. Market Condition Adjustments

The IAAO identifies market condition adjustments as a necessary component of any sales ratio study. Market condition adjustments are necessary due to the impact market conditions may have on ratios. The purpose of the adjustments is to adjust ratios so that sales prices are valued as if they had occurred at the same point in time as the assessment. For example, if values have been rising in a market and no adjustment is made for market conditions, sales that took place early in the year will have higher ratios than sales occurring around the assessment date, overstating the level of appraisal.

By adjusting the sale price, market condition adjustments ensure that the ratio for each sale better represents the assessment of that property because the two values used to calculate the ratio are at the same particular point in time. If all sales are adjusted to the same point in time, the median ratio better reflects the overall assessment level of that jurisdiction. Note that preliminary ratio reports and final ratio reports provide slightly different information. All sales will be forward adjusted to reflect the projected market price on January 2, 2016, but the preliminary ratios compare this sales price to the 2015 EMV and the final ratios compare this sales price to the 2016 EMV.

All sales in the 2015 study will be forward adjusted to January 2, 2016 based on the trend calculated by the Data and Analysis Unit in order to reflect any changes in market conditions that occurred between the sale date and the 2016 assessment date.

Market condition adjustments are made based on a calculated market condition trend. Market condition trends are determined from sales of the various property types in their regions over a 21-month period (January 2014-September 2015). Only sales identified as good, open-market, arms-length transactions are used in the calculation of these trends. Inverted ratios (sale price/assessed value) are used in the calculation of trends in order to control for the individual characteristics of different properties, making them comparable. The use of inverted ratios in determining trends also lends to itself to ease of interpretation. [4]

[4] For example, if the market is decreasing, the standard ratio (EMV/sales price) will be increasing because the EMV remains the same and the sale value decreases over time. When we use the inverted ratio, the ratio moves in the same direction as the market.

Once calculated, these trends are tested to ensure statistical significance. If no statistically significant trend is found, the sales prices will not be adjusted for market conditions. Market condition adjustments are only made in regions where the number of sales meets or exceeds the minimum requirement of 30 sales.

See Appendix E: Calculation of Market Condition Trends and Adjustments for more information on the calculation of market condition trends and adjustments.

i. **Net Improvement and Market Condition Trends**

It is possible that sales from January 2015 through September 2015 had net improvements reported in calendar year 2014. These sales would not be rejected from the sales ratio study. However, because the 2014 EMV is used in the ratio for trend calculations, these sales will have their 2014 EMV adjusted for net improvements reported on the 2015 assessment. This adjustment is only used to calculate market condition trends.

**Example:**
Sale Date: June 2015
Sale Price: $200,000
Net Improvement Date: June 2014
Net Improvement as reported on 2015 MVP: $50,000
2014 EMV: $125,000
2015 EMV: $180,000

In this example, if we do not adjust the 2014 EMV, the ratio used for market condition trends would be 160% ($200,000/$125,000), because the 2014 EMV does not reflect the net improvements. This would overstate how fast the market is growing. Therefore, these sales have their 2014 EMV adjusted by the net improvement amount reported on the 2015 Market Value by Parcel file:

$$Adjusted\ 2014\ EMV = 2014\ EMV + Net\ Improvements\ reported\ on\ 2015\ MVP$$

Therefore, the adjusted ratio for trend calculation would be $200,000/($125,000 + $50,000), or 114%.

## E. Assessment Statistics

Assessment statistics are calculated by the Data and Analysis Unit as measures of equity of assessment. These statistics are calculated only for property groupings within a region that have 30 or more sales. They do not include sales with extreme ratios. These statistics are reported on the ratio print that the Data and Analysis Unit sends to the

county assessor. Counties can also use the MCAST to determine these statistics. The State Board of Equalization will consider these assessment statistics, among other things, when reviewing ratios and issuing orders.

#### i. Price Related Differential

The price related differential (PRD) is an indicator of vertical equity.

#### ii. Price Related Bias

The price related bias (PRB) is a statistical measure of vertical equity in assessment. The PRB helps ensure that properties are assessed uniformly regardless of the value of the property. The PRB provides an indication of vertical equity and quantifies the extent of any potential inequity. The PRB is less susceptible to outliers than the PRD. We started reporting the PRB in the 2014 Study to provide additional information to assessors and PTCOs. The Data and Analysis Unit will continue to calculate and report both the PRD and the PRB in the 2015 Sales Ratio Study.

#### iii. Coefficient of Dispersion

The coefficient of dispersion (COD) is a measure of variability and uniformity of assessment. The COD is the average percentage deviation of ratios from the median ratio.

## VI. Reports

Various reports are created and sent to counties throughout the sales ratio study process. These reports include sales lists, trend reports, and ratio prints. Sales lists will be sent at every stage in the process until ratios are finalized to ensure that the most up to date sales information is always being used.

### A. Initial Reports

Starting in July, the Department of Revenue will begin regularly sending out lists of sales from January 1, 2014 through the date of the listing. Counties should work with their PTCOs to review and edit their sales.

### B. Preliminary Reports

All sales in the study period must be submitted to the Department of Revenue by November 10, 2015. Once all sales go through PTCO review, the Department issues trends and preliminary ratios. Preliminary ratios are calculated using the 2015 EMV and the sales price adjusted to January 2, 2016:

$$\frac{2015\ EMV}{Net\ sales\ price\ adjusted\ to\ Jan\ 2, 2016}$$

If the county assessor feels that a trend provided by the Department is not appropriate for that region or a subset of that region, within their county, they have the right to appeal. Go to Market Condition Trend Appeal Process below for more information on the appeal process.

### C. Final Preliminary Reports

After appeals are processed, the Department issues a final set of trends, incorporating the results of the appeals. At this point, trends are frozen and the Data and Analysis Unit will send final preliminary ratios, which take the final trends into account. These preliminary ratios are calculated using the 2015 EMV and the sales price adjusted to January 2, 2016:

$$\frac{2015\ EMV}{Net\ sales\ price\ adjusted\ to\ Jan\ 2, 2016}$$

### D. Pre-Board of Equalization Final Reports

Once a county has submitted their Market Value by Parcel File, the Department issues their pre-Board final ratios. Final ratios are calculated using the 2016 EMV adjusted for net improvements and the sales price adjusted to January 2, 2016:

$$\frac{2016\ EMV - net\ improvements}{Net\ sales\ price\ adjusted\ to\ Jan\ 2, 2016}$$

These are the ratios that the State Board of Equalization will review.

### E. Final Reports

The State Board of Equalization will convene in June 2016 to review the findings of the 2015 Sales Ratio Study, which includes ratios and assessment statistics. After the Board issues orders, the Department issues final ratios. Final ratios are calculated using the 2016 EMV adjusted for net improvements and the sales price adjusted to January 2, 2016:

$$\frac{2016\ EMV - 2015\ net\ improvements}{Net\ sales\ price\ adjusted\ to\ Jan\ 2, 2016}$$

At this point, Tax Court ratios are calculated using the 2015 EMV and the sales price adjusted backwards to January 2, 2015:

## VII. Market Condition Trend Appeal Process

If the county assessor feels that a market condition adjustment provided by the Department is not appropriate for a region within their county, they have the right to appeal.

To appeal a market condition trend, the county assessor must notify their PTCO and the Data and Analysis Unit of their disagreement via email. Please contact the Data Analysis Unit at DataAnalysis.MDOR@state.mn.us and copy the PTCO on all correspondence.

The county assessor must list the specific area to be covered by the appeal and provide a brief summary explaining their reasons for believing an appeal is necessary. The county assessor must also submit an MCAST spreadsheet for each of the specific regions and property groupings covered by the appeal, including all sales before trimming for extremes.

The county assessor may wish to include sales that occurred in October to December of 2015 in their appeal. They must submit those sales via eCRV and send notification to the Department of Revenue that there are additional sales to consider. The PTCO must ensure that all sales in the region and of the property type under appeal have been submitted and that no sales have been withheld.

The Data & Analysis Unit will conduct an internal analysis to provide to the trend appeals panel for review. As part of the internal analysis, the Data and Analysis Unit will complete a detailed summary of the regional trend and will analyze various things that may impact the trend including but not limited to:

- Extreme ratios within the data set
- The trend when the sales are truncated to a 12-month study period
- The trend from the previous year's 21-month data set
- Any non-linear trends within the region
- Seasonal impacts on sales in the region
- Graphical analysis
- The trend after considering sales that occurred in October, November and December of the study year

The Department's trend appeals panel will review all available information and determine whether or not to make or modify a time adjustment. Market condition trends will be finalized and issued to the counties when the panel has made its determination by January

15, 2016. If the appeal results in a change to the region's market condition trend, the change will be applied to the appropriate Sales Ratio Study uses.

It is important to keep in mind throughout the appeals process that ratios produced in the sales ratio study are used in other calculations such as Adjusted Net Tax Capacities, Indicated Market Values, and Economic Market Values. When final ratios don't reflect what is actually happening in the market, measures of wealth or aid payments could be adversely affected. For example, if a jurisdiction experiences an increasing real-estate market but the positive trend is not applied, the median ratio will be lower than it should be and the measure of wealth will be artificially inflated, affecting the county's ability to obtain and repay debt. Additionally, the lower artificial ratio would increase Adjusted Net Tax Capacities, which could translate into lower state aid.

## VIII. Appendix A: Reject Code Definitions

1. **Old sales**
   Sales that do not fall within the 21-month study period.

2. **Relative sales**
   Sales between close relatives or corporate affiliates are usually non-open market transactions. The IAAO guidelines for close relatives include marital relationships, parents, children, aunts, uncles, nephews, nieces, and grandparents; guidelines for corporate affiliates include corporate relationships between businesses.

3. **Government or exempt party sales, or sales involving charitable, religious or educational institutions**
   Sales involving governmental agencies as buyers or sellers of property or all sales involving public utilities (including railroad and pipeline companies). This also includes sales involving charitable, religious or educational institutions.

4. **Partial-interest sales**
   Sales of less than the total interest of the property. If more than one sale occurs and the combined sales equal the total interest, the sale could be used.

5. **Use change**
   Sales involving change of use from one legal property class to another will be reviewed. Changing from residential to commercial use is an example of use change. Use change would not be involved if a restaurant were converted to an office building, since both uses would be classified as commercial property. One exception to use change would be a change of class from seasonal-recreation residential to residential or vice versa; these sales will be used. Sales of 34.5 acres or more will not be automatically excluded, if the class changes are among the agricultural, residential, seasonal recreational or managed forest classes; the property will remain in the class it was in before the sale. Use change requires that most of the value will be moved to a different property classification.

6. **Unusual financing**
   This includes sales that have non-monetary consideration and sales that have terms that result in extremely large financing adjustments. These would include:
   - Zero interest payments for a long period
   - Non-cash financing
   - Extreme interest rates that would make the finance adjustment a large part of the sale price and move the sale into the extreme ratio range
   - Income guarantees that require the seller to pay the buyer money if a specified income is not realized from the property

7. **Physical change**
   Sales of incomplete structures or structures that were assessed prior to completion. Sales should be rejected if the property was substantially improved between assessment date and sale. Property damaged between the assessment date and sale should be rejected due to physical change. Sales in which the physical change is merely cosmetic or would not have caused the assessor to change the market value of the property should be included. Sales involving structures that are more than 5% incomplete *may* be excluded. Go to Net Improvements for more information on when new construction should be accepted or rejected.

8. **Correction deed**
   Sales of convenience simply to correct a defect of title or to change the character of the title, including quit claim deeds.

9. **Trade, gift or estate sales**
   - Trades of properties or transfers in which nonmonetary items, such as stocks, bonds, or personal property are used as the medium of exchange.
   - Sales by representatives of estates to members of the immediate family.
   - Sales to a trustee for the benefit of some beneficiary.
   - Estate sales not exposed to the open market.
     - Transactions of residential or seasonal-recreational residential properties using a personal representative or conservator's deed are automatically rejected.
     - Sales of other property types are subject to verification and may be included.
     - Property sold by the heirs after probate must be verified and may be rejected under other criteria.

10. **Prior interest**
    Sale where the buyer exercised an option to purchase.

**11. Skipped CRV number**

Indicates that an auditor's number was not used. Starting with the 2015 study, all sales are submitted through eCRV. This code will no longer be used.

**12. Unique reject reason**

Sales with unique reasons for rejection authorized by Department of Revenue Property Tax Compliance Officers. Additional explanation should accompany every use of Reject Code 12.

**13. Duplicate CRV or eCRV**

Sales where the buyer and seller each file a certificate for the same parcel. This code is also used in the Department of Revenue duplicate edit check.

**14. Sale of an interest in or a payoff of a contract for deed or mortgage assumption**

**15. Distressed sales**

- Sales to avoid foreclosure, such as short sales or sales back to the bank.
- Sales involving legal actions such as foreclosures, divorces, bankruptcies or sheriffs' sales. To be automatically rejected, a sale must be ordered by a court. All other sales must be verified and may qualify for rejection under other criteria.

**16. Assessor value for sale year not available or split property sales**

Sales that are:

- Classified as something other than agricultural, rural vacant land, or forest management.
- Less than 34.5 acres of agricultural, rural vacant land or forest management.
- Greater than 34.5 acres, of agricultural, rural vacant land or forest management and when the assessor's value is not available for the needed study years.

**17. Excessive non-real property**

Non-assessed and significant or unknown non-realty sales including:

- Sales in which a significant, but unknown portion of the total price is non-realty, such as personal property, business value, franchise fees, etc.
- Sales in which there is a significant, known amount (50% or more) of non-realty included in the sale price, such as personal property, franchise fees, etc. If the sale includes a large but well-documented non-realty portion, it may be used in the sales ratio study.
- Sales of non-assessed property such as cemetery lots.

**18. Rewrite of terms or default on CD**

"Sales" which are rewrites of the terms of a contract for deed. If a rewrite occurs within a year of the original contract, both will be deleted. If it is more than a year, the original sale will be used.

**19. Relocation/employee transfer**

Sales involving an employee transfer or relocation using a relocation company.

**20. Sale – leasebacks**

Sales where the property is leased back to seller for more than six months; this does not include short-term leases, such as to get crops harvested.

**21. Bank sales**

Any sale from a bank, HUD, FMHA, or any governmental lending institution, to a private party. These sales will be considered for use in the study only in regions where they are so prevalent that they mirror the actions of buyers and sellers of non-foreclosed property. Thorough verification is mandatory before the Regional Representatives will consider including these sales.

- Resales of repossessed property may be considered for use in the study. Thorough verification is required before these sales can be used; they should only be used if the sale meets the "open market arms-length" test. Resales of repossessed property by lending institutions will not be adjusted for financing terms. Only the most recent non-rejected resale will be considered.

**22. Contract for deed sales with less than minimum down payment**

The minimum down payment for the sales ratio study is five percent, unless the verification proves that the chance of default was extremely low, or that the term is one year or less. Many warranty deed sales, especially residential sales with nominal down payments, are insured loan sales and the buyer is considered a good risk; no down payment can be an acceptable form of financing on a warranty deed sale.

**23. Sales of real estate for less than a minimum price**

**Minimum Price Rejection Criteria**

| Property Type | Minimum Price |
|---|---|
| All bare land sales | $3,000 |
| All other property | $10,000 |

**24. Sales in which the property is located in more than one county**

Sales of property located in more than one taxing jurisdiction, which do not have separate appraisals for the components of the sale, may be excluded.

**25. Ag Preserve and sales subject to a minimum assessment agreement**

All sales enrolled in Agricultural Preserve and sales subject to minimum assessment agreements in which the sales price is less than the minimum assessment agreement.

**26. Sales of doubtful title or other non-arms-length or non-typical market transactions**

Sales, for example, that are not advertised, listed or promoted to potential buyers. A sale with Reject Code 26 with no explanation attached will **not** be rejected automatically; **additional documentation is required.**

While Reject Code 26 is a valid code, a blanket rejection of all sales that are "not advertised, listed or promoted" would reject many sales that still meet the Department of Revenue guidelines for sales that are open market and arms-length.

Three tests have been developed in an effort to: 1) maximize the number of sales in the ratio study sample, 2) provide appraisers with all possible sales that reflect market value, market trends, and 3) help to establish benchmarks for current and future assessments. The following three tests will help determine if the sale should be rejected or accepted on its merits and included in the ratio study. Transfers with doubtful title should be rejected with Reject Code 26.

<u>Test 1</u>

Was the sale exposed to the market, or announced, and/or promoted through Realtor listings, newspapers or other publications, advertisements, brochures or other promotional or informational mailings, including if the property was For Sale by Owner (FSBO)?

If **YES,** the sale **SHOULD NOT** be rejected as a Reject Code 26.

If **NO,** go to Test 2.

<u>Test 2</u>

Was an appraisal done prior to the sale to establish the sale price or to be used as a starting point for negotiations?

If **YES,** the sale **SHOULD NOT** be rejected as a Reject Code 26.If **NO,** go to Test 3.

Test 3

Did the sale involve a willing and informed buyer and a willing and informed seller, neither of whom were under duress to buy or sell, and is the sale price typical of the market for this type of property in your assessment district?
If **YES,** the sale **SHOULD NOT** be rejected as a Reject Code 26.
If **NO,** the sale **SHOULD** be rejected as a 26.

**Note**: If it is determined through the verification process that the sale should be considered as a market comparable and meets all other acceptance criteria, then the sale should be included in the Study.

Reject Code 26 is not an allowable reject code for agricultural sales, apartment sales, and C/I sales simply because the property was not advertised. However, individual situations may warrant the use of the Reject Code 26 on these property types.

It may be very difficult to determine if the sale should be a Reject 26 or not. Highly unusual or questionable sales may be encountered. Questions concerning whether a sale should be rejected as a Reject Code 26 or included in the study as a good sale should be reviewed with the county assessor and the PTCO.

**A sale with a Reject Code 26 with no explanation will not be automatically rejected. Additional documentation is required.**

27. **Court ordered value (sales with court ordered values that do not involve post sale stipulations or abatements)**
    The estimated market value to be used in calculating sales ratios shall be the value established by the assessor before any stipulations or abatements resulting from appeals by property owners. Sales with court established values that were not the result of pretrial stipulations or abatements are not used in the sales ratio study.

28. **Sales of nursing homes or sales of mobile home parks**

29. **Sales with allocated sale prices**

30. **Assessor's value limited by Plat Law in the first year**

31. **Assemblage**
    Properties bought by one buyer to put together a package for later development or change.

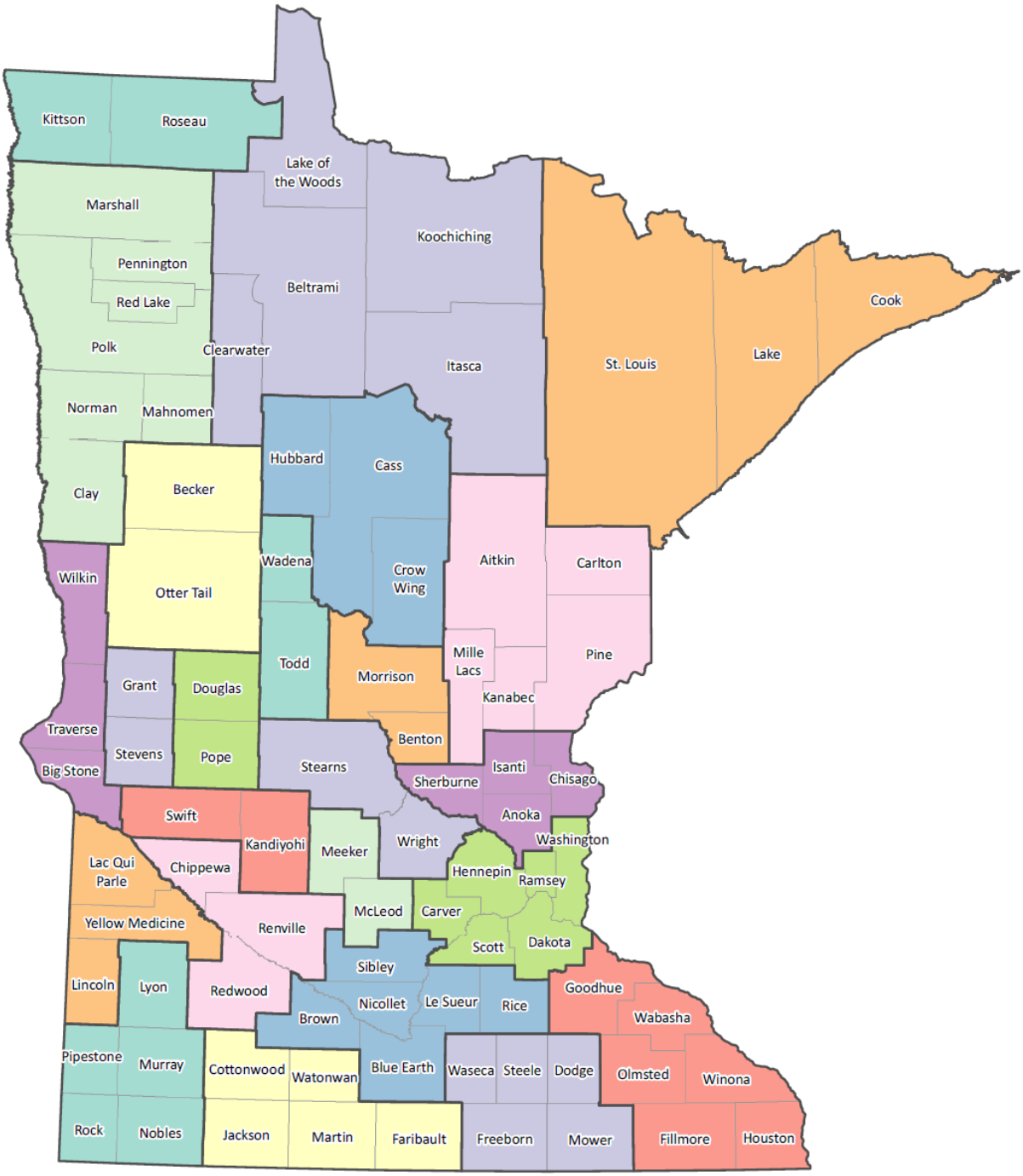
## IX. Appendix B: Property Groupings for the Sales Ratio Study

| | Property Grouping | Description | Property Type | Description |
|---|---|---|---|---|
| Ratio + Trend | 02 | Apartments | 02 | Apartments |
| Ratio + Trend | 06 | Commercial | 06 | Commercial |
| Ratio + Trend | 07 | Industrial | 07 | Industrial |
| Ratio (metro only) | 90 | Bare Land LESS than 34.5 acres 2a, 2b, 2c, or mixed 2a/2b | 37 | Agriculture 2a - bare land less than 34.5 acres |
| | | | 39 | Rural Vacant 2b - bare land less than 34.5 acres |
| | | | 40 | Managed Forest 2c - bare land less than 34.5 acres |
| | | | 50 | Mixed 2a, 2b - Bare land less than 34.5 acres |
| Ratio + Trend | 91* | Residential/Seasonal Recreational Residential | 01 | Residential (less than 4 units) |
| | | | 03 | Non-commercial seasonal residential recreational |
| Ratio | 92** | Bare land MORE than 34.5 acres 2b, 2c, or mixed 2a/2b | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 48 | Mixed 2a, 2b - Bare land more than 34.5 acres |
| Ratio + Trend | 93 | Bare land MORE than 34.5 acres 2a, 2b, 2c or mixed 2a/2b | 32 | Agriculture 2a - bare land more than 34.5 acres |
| | | | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 48 | Mixed 2a, Rural 2b - Bare land more than 34.5 acres |
| Ratio | 95** | Bare land + Land with buildings MORE than 34.5 acres 2a, 2b, 2c, or mixed 2a/2b | 31 | Agriculture 2a - land with buildings more than 34.5 acres |
| | | | 32 | Agriculture 2a - bare land more than 34.5 acres |
| | | | 33 | Rural Vacant 2b - land with buildings more than 34.5 acres |
| | | | 34 | Rural Vacant 2b - bare land more than 34.5 acres |
| | | | 35 | Managed Forest 2c - bare land more than 34.5 acres |
| | | | 47 | Mixed 2a, 2b - land with buildings more than 34.5 acres |
| | | | 48 | Mixed 2a, 2b - Bare land more than 34.5 acres |

* Trends are calculated by water status, ratios are calculated and reported by water status and combined.

**Sales used in this property grouping are adjusted by the property grouping 93 trend.

## X. Appendix C: Agriculture/Rural Vacant Region Map



## XI. Appendix D: Joint Cities Regions

| City Name | County of Location | Home County | County Wide Trend Calculation | Base Region | Default Region |
|---|---|---|---|---|---|
| Bellechester | Goodhue | Goodhue | Goodhue | Dennison, Wanamingo, Kenyon, Bellechester | Goodhue County Trend |
| Bellechester | Wabasha | Goodhue | Wabasha | Dennison, Wanamingo, Kenyon, Bellechester | Wabasha County Trend |
| Blaine | Anoka | Anoka County | Anoka | Blaine | Anoka County Trend |
| Blaine | Ramsey | Anoka County | Ramsey | Blaine | Anoka County Trend |
| Braham | Isanti | Isanti | Isanti | Balance of Isanti County | Isanti County Trend |
| Braham | Kanabec | Isanti | Kanabec | Balance of Isanti County | Isanti County Trend |
| Chanhassen | Carver | Carver County | Carver | Chanhassen | Carver County Trend |
| Chanhassen | Hennepin | Carver County | Hennepin | Chanhassen | Carver County Trend |
| Chatfield | Fillmore | Fillmore | Fillmore | Fillmore City Region One | Fillmore County Trend |
| Chatfield | Olmsted | Fillmore | Olmsted | Fillmore City Region One | Fillmore County Trend |
| Clearwater | Stearns | Wright | Stearns | Clearwater | Wright County Trend |
| Clearwater | Wright | Wright | Wright | Clearwater | Wright County Trend |
| Comfrey | Brown | Brown County | Brown | Comfrey | Brown County Trend |
| Comfrey | Cottonwood | Brown County | Cottonwood | Comfrey | Brown County Trend |
| Dayton | Hennepin | Hennepin | Hennepin | Dayton, Hanover, Rogers | Hennepin County Trend |
| Dayton | Wright | Hennepin | Wright | Otsego, Dayton | Hennepin County Trend |
| Dennison | Goodhue | Goodhue | Goodhue | Dennison, Wanamingo, Kenyon, Bellechester | Goodhue County Trend |
| Dennison | Rice | Goodhue | Rice | Dennison, Wanamingo, Kenyon, Bellechester | Goodhue County Trend |
| Eden Valley | Meeker | Meeker | Meeker | Eden Valley | Meeker County Trend |
| Eden Valley | Stearns | Meeker | Stearns | Eden Valley | Meeker County Trend |
| Elysian | Le Sueur | Le Sueur | Le Sueur | Balance of Le Sueur County | Le Sueur Country |
| Elysian | Waseca | Le Sueur | Waseca | Balance of Le Sueur County | Le Sueur Country |
| Granite Falls | Chippewa | Yellow Medicine | Chippewa | Granite Falls | Yellow Medicine County Trend |
| Granite Falls | Yellow Medicine | Yellow Medicine | Yellow Medicine | Granite Falls | Yellow Medicine County Trend |
| Hanover | Hennepin | Wright | Hennepin | Dayton, Hanover, Rogers | Hennepin County Trend |
| Hanover | Wright | Wright | Wright | St. Michael, Hanover | Wright County Trend |
| Hastings | Dakota | Dakota | Dakota | Hastings | Dakota County Trend |

| City Name | County of Location | Home County | County Wide Trend Calculation | Base Region | Default Region |
|---|---|---|---|---|---|
| Hastings | Washington | Dakota | Washington | Hastings | Dakota County Trend |
| Jasper | Pipestone | Pipestone | Pipestone | Jasper | Pipestone County Trend |
| Jasper | Rock | Pipestone | Rock | Jasper | Pipestone County Trend |
| La Crescent | Houston | Houston | Houston | Houston Region One | Houston County Trend |
| La Crescent | Winona | Houston | Winona | Balance of Winona County | Winona County Trend |
| Lake City | Goodhue | Wabasha | Goodhue | Lake City | Wabasha County Trend |
| Lake City | Wabasha | Wabasha | Wabasha | Lake City | Wabasha County Trend |
| Mankato | Blue Earth | Blue Earth County | Blue Earth | Mankato, Skyline | Blue Earth County Trend |
| Mankato | Nicollet | Blue Earth County | Nicollet | Mankato, Skyline | Blue Earth County Trend |
| Minneiska | Wabasha | Wabasha | Wabasha | Balance of Wabasha | Wabasha County Trend |
| Minneiska | Winona | Wabasha | Winona | Balance of Wabasha | Wabasha County Trend |
| Minnesota Lake | Blue Earth | Faribault | Blue Earth | Balance of Faribault | Faribault County Trend |
| Minnesota Lake | Faribault | Faribault | Faribault | Balance of Faribault | Faribault County Trend |
| Motley | Cass | Morrison | Cass | Motley | Morrison County Trend |
| Motley | Morrison | Morrison | Morrison | Motley | Morrison County Trend |
| New Prague | Le Sueur | Scott | Le Sueur | New Prague | Scott County Trend |
| New Prague | Scott | Scott | Scott | New Prague | Scott County Trend |
| North Mankato | Blue Earth | Nicollet | Blue Earth | North Mankato | Nicollet County Trend |
| North Mankato | Nicollet | Nicollet | Nicollet | North Mankato | Nicollet County Trend |
| Northfield | Dakota | Rice | Dakota | Northfield | Rice County Trend |
| Northfield | Rice | Rice | Rice | Northfield | Rice County Trend |
| Ormsby | Martin | Watonwan | Martin | Balance of Watonwan County | Watonwan County Trend |
| Ormsby | Watonwan | Watonwan | Watonwan | Balance of Watonwan County | Watonwan County Trend |
| Osakis | Douglas | Douglas | Douglas | Osakis | Douglas County Trend |
| Osakis | Todd | Douglas | Todd | Osakis | Douglas County Trend |
| Pine Island | Goodhue | Goodhue | Goodhue | Goodhue, Pine Island, Zumbrota | Goodhue County Trend |
| Pine Island | Olmsted | Goodhue | Olmsted | Byron, Stewartville, Pine Island | Olmsted County Trend |
| Princeton | Mille Lacs | Mille Lacs | Mille Lacs | Princeton | Mille Lacs County Trend |
| Princeton | Sherburne | Mille Lacs | Sherburne | Princeton | Mille Lacs County Trend |
| Rockford | Hennepin | Wright | Hennepin | Hennepin West Central | Wright County Trend |
| Rockford | Wright | Wright | Wright | Rockford City | Wright County Trend |

| City Name | County of Location | Home County | County Wide Trend Calculation | Base Region | Default Region |
|---|---|---|---|---|---|
| Roosevelt | Lake of the Woods | Roseau | Lake of the Woods | Balance of Roseau County | Roseau County Trend |
| Roosevelt | Roseau | Roseau | Roseau | Balance of Roseau County | Roseau County Trend |
| Rothsay | Otter Tail | Wilkin | Otter Tail | Rothsay | Wilkin County Trend |
| Rothsay | Wilkin | Wilkin | Wilkin | Rothsay | Wilkin County Trend |
| Royalton | Benton | Morrison | Benton | Balance of Morrison County | Morrison County Trend |
| Royalton | Morrison | Morrison | Morrison | Balance of Morrison County | Morrison County Trend |
| Sartell | Benton | Stearns | Benton | Sartell | Stearns County Trend |
| Sartell | Stearns | Stearns | Stearns | Sartell | Stearns County Trend |
| Spring Lake Park | Anoka | Anoka County | Anoka | Spring Lake Park | Anoka County Trend |
| Spring Lake Park | Ramsey | Anoka County | Ramsey | Spring Lake Park | Anoka County Trend |
| St. Anthony | Hennepin | Hennepin | Hennepin | St. Anthony | Hennepin County Trend |
| St. Anthony | Ramsey | Hennepin | Ramsey | St. Anthony | Hennepin County Trend |
| St. Cloud | Benton | Stearns | St. Cloud | St. Cloud | St. Cloud |
| St. Cloud | Sherburne | Stearns | St. Cloud | St. Cloud | St. Cloud |
| St. Cloud | Stearns | Stearns | St. Cloud | St. Cloud | St. Cloud |
| St. Francis | Anoka | Anoka County | Anoka | St. Francis, Bethel | Anoka County |
| St. Francis | Isanti | Anoka County | Isanti | St. Francis, Bethel | Anoka County |
| Staples | Todd | Todd | Todd | Staples | Todd County Trend |
| Staples | Wadena | Todd | Wadena | Staples | Todd County Trend |
| Swanville | Morrison | Morrison | Morrison | Balance of Morrison County | Morrison County Trend |
| Swanville | Todd | Morrison | Todd | Balance of Morrison County | Morrison County Trend |
| Wadena | Otter Tail | Wadena | Otter Tail | Wadena | Wadena County Trend |
| Wadena | Wadena | Wadena | Wadena | Wadena | Wadena County Trend |
| White Bear Lake | Ramsey | Ramsey | Ramsey | White Bear Lake | Ramsey County Trend |
| White Bear Lake | Washington | Ramsey | Washington | Mahtomedi, Willernie, Pine Springs, Birchwood, White Bear Lake | Washington County Trend |

## XII. Appendix E: Calculation of Market Condition Trends and Adjustments

The IAAO recognizes five methods of calculating market condition adjustments:

1. Paired Sales Analysis
2. Resale Analysis
3. Sales Ratio Time Trend Analysis
4. Multiple Regression Analysis
5. Comparing Per-Unit Values Over Time

Three of the methods listed above require more extensive sale and parcel level data than the Department collects. Analyzing re-sales is very difficult to do because few parcels resell in any given sales period, and the majority of jurisdictions almost never experience re-sales. This leaves one method for which data is available to the Department of Revenue that can be fairly applied throughout the state. Tracking sales ratios over time is a common method of determining market condition adjustments and is the methodology adopted by the Minnesota Department of Revenue.

The basis for this method is that changes in market conditions are represented by changes in sale prices over time. However, a simple analysis of changes in sale price is often misleading, especially in areas with few sales. A difference in median sale price of 10% from one month to the next does not usually mean that market values changed 10%; rather, this is typically a sign that different types of properties sold in each month with more valuable properties being sold in one month than the other. To find out if values actually changed, these prices need to be standardized so they can be compared on the same scale.

Using the sales ratio accomplishes this goal because it controls for individual characteristics of the properties, making them comparable. For market condition analysis, we use the inverse of the sales ratio (sale price/assessed value) for ease of interpretation. For example, using the inverted ratio allows us to compare the assessment of a home that sold for $200,000 to a newer neighboring home that sold for a higher price. The house that sold for $200,000 should have an EMV that is lower than the house that sold for a higher price, so even though the two homes sell for different prices, the inverted ratio provides an apples-to-apples comparison. Calculating trends with the inverted ratio allows us to isolate the effect of prices,[5] **given an acceptable uniformity of assessment.**

[5] An increase in the inverse sales ratio over time indicates an increase in sale prices, and a decrease in the ratio corresponds to a decrease in sale prices relative to assessed values as of a fixed date.

Not all sales are used in the trend analysis. Only sales identified as good, open-market, arms-length transactions are used to develop market condition adjustments. Additionally, extreme ratios tend to distort the calculations used to measure market condition adjustments so they are not included in the trend analysis.

After we have grouped sales by region, property type and water status, we run the following regression equation:

$$Natural\ Log\left(\frac{Sales\ Price}{2014\ EMV}\right) = \beta_0 + \beta_1 Study\ Month + \varepsilon$$

Where the beta coefficient ($\beta_1$) is the monthly growth rate, and the intercept ($\beta_0$) is the expected value of the ratio on January 1, 2014. The estimated coefficient of beta ($\beta_1$) can be interpreted as the percentage change in the ratio for each additional month. The beta ($\beta_1$) coefficient is always accompanied by a significance value. Market condition adjustments are only applied if the beta coefficient ($\beta_1$) is statistically significant at the 90 percent confidence level. [6]

As previously noted, market condition adjustments are only applied to sales in regions with at least 30 sales. This change was made to ensure that the sample sizes fall within the IAAO guidelines regarding the adequacy of a given sample size.[7]

The fact that the Department does not issue a market condition trend does not mean that prices are not changing in a region. It means that the price-level changes were not statistically significant under the current methodology and/or the number of sales in the region was not sufficient to support regression analysis according to this study criteria.

[6] In statistics, three thresholds for significance are typically reported: the 99% confidence level, the 95% confidence level and the 90% confidence level.

[7] The motivation behind this threshold was rooted in the use of linear regression models to calculate trend adjustments. To ensure unbiased, consistent and efficient results, we must ensure that the sample data be representative of the population. For sales ratio studies, the sample consists of parcels sold within the region. We make the assumption that these sales are representative of the property values of all parcels within the region. To have confidence that that assumption is valid, we need to have a large enough sample size. Using a minimum of 30 sales for market condition trend calculation ensures that the confidence interval is sufficiently narrow.

We use the following equation to calculate the annual market condition trend[8]:

$$annual\ growth = (1 + monthly\ growth)^{12} - 1$$

To adjust a sale for time, we use the following formula:

$$\text{Adjusted Sales Price} = \text{Original Sales Price} * [(1 + monthly\ growth\ rate)^{adjustment\ months}]$$

**Example 1:**
A home sold for $100,000 in October 2014. The monthly growth rate for SRR/Res properties in the region was 2%. To adjust the sale forward to January 2, 2016 we use the following formula:

Adjustment Months = (25 - Month of Sale) = 25 – 10 =15

Then, the adjusted sales price in January, 2015 will be:

$$\$100{,}000 * [(1 + 0.02)^{15}] = \$100{,}000 * [1.3458] = \$134{,}586.83$$

**Example 2:**
A home sold for $100,000 in November 2015. The monthly growth rate for SRR/Res properties in the region was 2%. To adjust the sale forward to January 2, 2016 we use the following formula:

Adjustment Months = (13 - Month of Sale)= 13 – 11 = 2

Then, the adjusted sales price in January, 2015 will be:

$$\$100{,}000 * [(1 + 0.02)^{2}] = \$100{,}000 * [1.0404] = \$104{,}040$$

Comparing Examples 1 and 2, you can see that the value of the sale that took place in November 2015 has a lower adjusted sale value than the property sold in October 2014. After the adjustment, the adjusted sale price for both properties reflects the sale price at a common

[8] Starting with the 2013 Sales Ratio Study, the methodology was revised to use the natural log of the inverted ratio in the regression. In the past, the beta coefficient of the inverted ratio/the intercept indicated an average change in prices over time. Under the current methodology, the beta coefficient of the natural log of the inverted ratio indicates a percentage change in prices over time. In order to calculate the annual trend, we must use the cumulative formula instead of taking the monthly change multiplied by twelve.

point in time (January 2016) which makes the values comparable. Once this is done, the quality of assessment can be evaluated without a bias from market trends.

The table below provides a reference for determining the number of months to adjust for when adjusting sales prices, as well as the study month used to calculate trends.

**Calculating Study Month and State Board Adjustment Months**

| Study Month used for the 21-month study period | Sale Month | Adjustment Months (Number of months we are adjusting for) |
|---|---|---|
| 0 | January-2014 | Never adjust sales that are not in the study period, we only use them for trend analysis |
| 1 | February-2014 | |
| 2 | March-2014 | |
| 3 | April-2014 | |
| 4 | May-2014 | |
| 5 | June-2014 | |
| 6 | July-2014 | |
| 7 | August-2014 | |
| 8 | September-2014 | |
| 9 | October-2014 | (25-10)=15 |
| 10 | November-2014 | (25-11)=14 |
| 11 | December-2014 | (25-12)=13 |
| 12 | January-2015 | (13-1)=12 |
| 13 | February-2015 | (13-2)=11 |
| 14 | March-2015 | (13-3)=10 |
| 15 | April-2015 | (13-4)=9 |
| 16 | May-2015 | (13-5)=8 |
| 17 | June-2015 | (13-6)=7 |
| 18 | July-2015 | (13-7)=6 |
| 19 | August-2015 | (13-8)=5 |
| 20 | September-2015 | (13-9)=4 |
| Not included | October-2015 | (13-10)=3 |
| Not Included | November-2015 | (13-11)=2 |
| Not Included | December-2015 | (13-12)=1 |

## XIII. Appendix F: Sales Ratio Study Timeline

| Date | Important Deadline |
|---|---|
| July 2015 | The Data and Analysis Unit begins sending out sales lists. |
| August 31, 2015 | Requests for revised regions should be sent to the Data and Analysis Unit and PTCO. |
| November 10, 2015 | All sales for the study period must be submitted to the Department of Revenue. |
| December 2015* | Trend appeals should be sent to the Data and Analysis Unit and PTCO. |
| January 15, 2015 | Appeals panel reaches determination, final trends are issued. |
| April 1, 2015 | Preliminary Market Value by Parcel (MVP) file is due. Pre-Board final ratios are issued as MVP files are received. |
| June 2016 | State Board of Equalization convenes to review Study results and issue orders. Final ratios are issued. |

*The appeals process is being modified to address timing issues and format requirements. More information and finalized dates will be provided in the fall.