

P. O. Box 47471
Olympia, WA 98504-7471

Washington Department of Revenue Property Tax Division

Guidelines and Best Practices for Uniformity in Mass Appraisal



October 2019

Table of Contents

Why Guidelines about Uniformity in Mass Appraisal?	2
What is Uniformity in Taxation?	3
Assessed Values to Reflect True and Fair Market Value	3
Washington State Case Law and Federal Laws Require Uniformity.....	3
The Department Conducts Property Tax Ratio Studies to Create Uniformity of Taxation (Equalization)	4
Definitions of terms for use in a Ratio Study:.....	5
Steps in the Ratio Study:.....	6
Evaluating Mass Appraisal Performance Using the Department’s Reports and IAAO Standards	6
Department studies include:	6
Department reports include:	6
Mass Appraisal Performance – Level of Assessment	7
Measures of central tendency	7
Targeting level of assessment less than 100 percent conflicts with law.....	8
Mass Appraisal Performance – Uniformity of Assessments.....	10
Horizontal Equity.....	10
IAAO Ratio Standard COD Range Indicating Good Uniformity	11
Sales Chasing.....	11
Vertical Equity	12
Best Practices for Improving Mass Appraisal Performance.....	13
Examples of Why Uniformity is Important	15
Non-uniform levels of assessment can affect taxes paid by property owners	15
Non-uniform levels of assessment affects taxes paid by property owners for state schools	16
Low assessment ratio can affect levies and revenue for county and taxing districts	16
Low equalization ratio reduces taxable value for state assessed utility and transportation properties.....	17
For More Information	17

Why Guidelines about Uniformity in Mass Appraisal?

The Department of Revenue (Department) conducts compliance and performance reviews of assessor offices referred to as *Property Tax Administration Reviews* (County Review). Reviewing property tax practices and procedures is one way the Department meets the oversight responsibilities to monitor counties for compliance with laws and to assist counties with guidance about proper procedures, appraisal practices and best practices. (RCW 84.08)

A County Review report includes the results of a review in the form of requirements and recommendations. A requirement indicates a change a county must make in order to comply with state law. A recommendation identifies areas of potential improvement and includes suggestions for improving a particular function or process.

In conducting a County Review, the areas looked at may include revaluation processes and results of mass appraisals. Mass appraisal is challenging work. The Department's studies and published reports provide useful data and insight about areas where a county's assessment uniformity and level of assessment meets or exceeds the acceptable standards, or may identify a need for improvement. This data determines when the scope of a County Review should include mass appraisal performance.

We consider various factors and data when prioritizing County Review work, such as:

- Counties preparing new revaluation plans;
- Counties whose data demonstrates potential uniformity challenges with assessments; and
- Counties demonstrating multiple years of low overall indicated ratios.

The types of data and circumstances that potentially indicate a uniformity issue; triggering a discussion by the Department and/or County Review, include one or more of the following:

- Recurring low level of assessment. (Refer to [page 7](#) and [page 16](#) of this document)
- An assessor appears to be intentionally targeting assessment levels less than 100 percent. (Refer to [page 8](#) of this document)
- When there are significantly different levels of assessment for property types or areas in the county. (Refer to [page 10](#) of this document and the example on [page 15](#))
- The county's mass appraisal performance measures are outside ranges recommended by the IAAO. (Refer to [page 11](#) of this document)
- A county is showing a repeating pattern of poor statistical measures with no signs of incremental improvement. (Refer to [page 13](#) of this document)

Our discussion with the assessor is useful to address our concerns, identify factors and processes that may contribute to the issue, learn of the assessor's planned improvements, and encourage specific education in the area(s) of concern. The severity of the uniformity issue, as well as the assessor's planned response, determines whether it remains a discussion or is included in the County Review report. After we provide the assessor with a draft of the report, the assessor has an opportunity to respond and provide additional information, prior to our

issuing the final report. The Department will monitor any identified issues or concerns through the next revaluation year and will conduct a follow-up review to identify and document evidence of incremental improvements.

Many counties demonstrate good uniformity in their mass appraisal work. For other counties good uniformity is harder to achieve. On-going challenges for assessors include limited resources, not enough market sales, and conversions to new computer assisted mass appraisal (CAMA) systems. The purpose of this document and the Department's efforts is to help counties continue working to ensure uniformity in taxation.

What is Uniformity in Taxation?

Article VII, Section 1 of the State Constitution requires uniformity in taxation,

All taxes shall be uniform upon the same class of property within the territorial limits of the authority levying the tax...

The authority levying the taxes is the county and various taxing districts providing services (cities, local schools, fire, and many others). In addition to local levying of taxes, there is a state levy to support schools. Each taxing district's levy rate applies similarly to all property within the district. There may be exceptions for property owners qualifying for the senior exemption program or other special programs.

A simple property tax calculation:

Levy rate X (Assessed value of a parcel/1,000) = Property taxes

Uniformity in taxation occurs when each taxing district applies a levy rate to the assessed values of properties within that taxing district and assessed values of those properties are at a similar level of assessment.

Assessed Values to Reflect True and Fair Market Value

Under state law, appraisers must assess all real and personal property based on 100 percent of true and fair market value ([RCW 84.40.030](#)). The Legislature decided to measure a county's mass appraisal performance against a benchmark of 100 percent of market value. Assessed values at very similar levels of market value provide the greatest uniformity.

Washington State Case Law and Federal Laws Require Uniformity

In the 1994 State Supreme Court decision, *Inter Island Telephone Company, Inc. v San Juan County* 125 Wn.2d 332, 883 P.2d 1380, (1994), it was recognized that "tax uniformity is the highest and most important requirement applicable to state and local property taxation." While

this case was about utility property classed as personal property and located in one county, it is reasonable to assume the court's decision is equally applicable to real property.

A county best achieves taxation uniformity when assessed values reflect the greatest degree of uniformity. In another State Supreme Court case, the Justices stated that while absolute taxation uniformity is the goal, it is difficult to attain. In their decision they state; "*Absolute uniformity in taxation is a chimera which this court has never sought and which we do not require. The legislature has set up an orderly system for revaluation (Chapter 84.41 RCW). This system, based on a rational view of the practical realities of budgets, public acceptance, and basic fairness has been accepted by this court as a systematic and nondiscriminatory solution to the demands of Const. art. 7, § 1 (amendment 14).*" *Sator v. State Dep't of Revenue*, 89 Wn.2d 338, 572 P.2d 1094, (1977).

While Constitution Article 7 requires uniformity of taxation for all real property it does not mean that similar property should necessarily be valued the same to arrive at similar valuations.

As long as assessors apply the appraisal principle of willing buyer/willing seller, the constitutional requirement of uniformity is achieved. The assessor is required, regardless of physical similarity, to consider all factors that affect the market value of property, including any restrictive covenants, long-term leases, and other factors that a willing buyer would consider.

This is affirmed in *Cascade Court v King County* where the court said that "**...property must reflect what a willing buyer would pay**; a willing buyer would not pay full market value for a property burdened by a long-term lease at below market rates." (Emphasis added).

Cascade Court Limited Partnership v. Noble, 105 Wash. App. 563, 20 P. 3d 997 (2001)

The Department Conducts Property Tax Ratio Studies to Create Uniformity of Taxation (Equalization)

Equalization of property taxation is required by the Washington Constitution for all property owners and as well by Federal law for railroads and airline companies that operate within Washington. In order to comply with both statutory requirements, Washington Administrative Code (WAC) requires the Department to conduct the annual Property Tax Ratio Study that studies the measure of market value to county assessment in each county, (Ratio) (Chapter 458-53 WAC). The Ratio is applied in two ways to achieve equalization.

In Washington, railroads and airlines that operate in more than one county (inter-county) are assessed by the Department of Revenue and are equalized to the same level of assessment in the counties in which they operate as required by Federal statute.

- The Federal Railroad Revitalization (4-R) Act is found in **49 USCS § 11501** and prohibits discrimination against railroad property.
- Another Federal Act, the TEFRA Act (Tax Equity and Fiscal Responsibility Act of 1982), found in Title 49, Section VII, Chapter 401 of the Federal statutes has the identical requirements and language pertaining to the taxation of the property owned by interstate air carriers.
- Washington Constitution requires uniformity of taxation for all taxpayers within each taxing jurisdiction. The state school levy is a single tax jurisdiction affecting every real and personal property taxpayer statewide.

In order to achieve equalization for both Federal and State purposes, the Department employs both direct and indirect equalization.

- Direct equalization – The Department directly adjusts (equalizes) values of state appraised utility and transportation companies to be commensurate with locally appraised property.
- Indirect equalization - State school levy rates are adjusted (equalized) using a combined real and personal property ratio, between all counties to ensure every taxpayer pays a uniform amount of tax.

We have included further explanation of how the Department uses ratios and examples of the effect of low ratios later in this document.

Definitions of terms for use in a Ratio Study:

Uniformity of assessment refers to how closely different properties are assessed in relation to each other. Achieving uniformity happens when there is a similar level of assessment across all property types, value ranges, and locations in the county.

Level of assessment refers to a statistical measurement of difference between a county's average assessed values to the average market value.

Sales ratio for a single property refers to the percentage of market value (sale price) represented by the assessed value. The ratio or percentage is determined by dividing the assessed value by the sale price.

Ratio studies compare assessed values to market values (sales prices or appraisals) for a group of properties.

Stratification, stratum & strata are terms used to describe the process of sorting parcels into relatively homogeneous groups. Stratification allows for analysis of mass appraisal performance within and between property groups or categories.

Steps in the Ratio Study:

The Department calculates the equalization ratio based on the weighted mean ratio. The weighted mean is the statistical metric recommended by IAAO for use in equalization systems that employ both direct and indirect equalization in a single step.

For individual counties, the Department calculates the weighted mean ratio for each strata. Additionally, the Department determines the stratum for each county based on the size and diversity of the county. Some large counties may have many residential, commercial, and agricultural stratum while smaller counties may have only two or three. For further information, please see the *Ratio Procedure Manual* located on the Property Tax Resource Center (PTRC) website, Chapter 458-53 WAC, or contact the Department.

The Department's *Property Tax Ratio Study* results for each county is also a useful tool for county appraisers. Appraisers may use the ratio of each strata as a tool for improving assessment levels of particular strata of properties. This should improve the overall ratio used for calculation of the state school levy.

Evaluating Mass Appraisal Performance Using the Department's Reports and IAAO Standards

In addition to performing equalization duties through the Ratio Study, the Department also employs other studies and IAAO standards to monitor and evaluate the uniformity of assessments. The IAAO's [*Standard on Ratio Studies*](#) suggests several statistical metrics for evaluating the level of and uniformity of assessments. The Department also conducts its own studies and reports that it uses for evaluating mass appraisal performance.

Department studies include:

Ratio study calculations for each county

- Sent annually to each assessor, generally in the fall.
- Include ratio information by property type/value stratum and include county real property ratio information.
- Primarily focus on weighted mean.

Valid Sales Study

- Conducted by the Department for each county on a 3-year cycle.
- Includes testing to determine if appraisers are valuing sold and non-sold properties in the same manner.
- Provided to the county assessor.

Department reports include:

Measuring Real Property Appraisal Performance in Washington's Property Tax System

- Annual reports published through 2017 are available on the Department’s public website.
- Measures counties’ performance against IAAO recommendations.
- Primarily focuses on median ratio.
- Statistics for each county that measure mass appraisal performance including ratios (residential and nonresidential), horizontal equity (COD), and vertical equity (PRD and sales by quintiles).

Real Property Ratio Summary Statistics Report

- Annual reports completed through 2018 are available to assessors.
- The report may be included as a discussion point during our review work in a county.
- A tool that counties can use for identifying property types that may need further analysis. Unverified and limited sales in some property types could affect reliability. Users of the report should consider the effect of limited sales and may need to conduct additional research to improve understanding of the reliability of reported statistics.

Many assessors and their staff use the Department’s Ratio Study and other reports as useful tools for indications of where they need to make improvement. The reports also are a “heads up” for areas of mass appraisal performance that the Department could include in the scope of a future performance review.

Mass Appraisal Performance – Level of Assessment

To maintain equitable and consistent assessed valuations, it is very important to use ratio studies and statistical analysis as tools to measure mass appraisal accuracy. These tools can help determine the level of assessment and uniformity of values across the county. There should not be large variations in the level of assessment between different property strata or properties within the same stratum.

Measures of central tendency

The Department analyzes assessment levels using standardized and accepted statistical measures of central tendency. IAAO defines central tendency as “The tendency of most kinds of data to cluster around some typical or central value, such as the mean or median.” (2013 IAAO Ratio Standard Definitions)

Those used for ratio studies include the mean, median, and weighted mean.

- The **mean** is the average ratio found by summing the ratios and dividing by the total number of ratios.
- The **median** is the midpoint and results by arraying the ratios in numerical sequence and then finding the middle occurring ratio.
- The **weighted mean** results by individually summing both the assessed values and the market values (sales prices) for the entire data set. Then dividing the total assessed value by the total market value. The weighted mean weights each ratio in proportion to

each sale price. Therefore, one can use it to estimate the total dollar value of a population of parcels. The Department uses it to calculate the statewide overall ratio for both real and personal property.

Reliability of the measures of central tendency are measured using confidence interval studies as well as other testing (for more information refer to appraisal or statistic resources).

The IAAO Standard on Ratio Studies suggests:

- The resulting overall assessment level as measured using the appropriate measures of central tendency should be within ten percent of the legal level (90-110 percent).
- The calculated ratio in each stratum of properties should be within five percent of the overall assessment ratio in the jurisdiction. For example, if the overall median ratio in the county is 95 percent, each stratum's median ratio should be within 90 percent to 100 percent.

“Both criteria must be met. By themselves, the calculated measures of central tendency provide only an indication, not proof, of whether the level meets the appropriate goal.” (2013 IAAO Ratio Standard 9.1)

The Department completes additional statistical tests to determine whether the overall level of assessment falls within the margin of error (>5 percent) of those guidelines. We report the results of the study in the publication, *Measuring Real Property Appraisal Performance in Washington's Property Tax System*.

Targeting level of assessment less than 100 percent conflicts with law

Appraisers should not make a direct effort to target any assessment level lower than 100 percent of true and fair (market) value. Rather, they should use the sales in the ratio analysis (assessed value/sale price) as the basis for assessed valuations within the jurisdiction. Valid market sales will indicate what market adjustments appraisers should make to the population of properties to achieve 100 percent true and fair value.

Because mass appraisal is not an exact science, an assessor may be concerned, that if they set their system up to achieve 100 percent market value countywide, that statistically some properties will fall above the 100 percent line. Just as some properties are assessed at greater than 100 percent, other properties will be assessed at less than 100 percent of market value. Directing appraisers to appraise at the same level of assessment for all locations and property types leads to greater uniformity, but a target ratio less than 100 percent conflicts with state law. The legal “target” for property assessments is 100 percent of true and fair (market) value (RCW 84.40.030). One should remember that ratio studies are a statistical analysis of a group of data and does not mean that any single property is assessed at the calculated ratio. When analyzing appraisal levels, ratio studies attempt to measure statistically how close appraisals are to market value (or to a required statutory constraint that one can express as a percentage of market value) on an overall basis.

Mass appraisal relies on adequate and accurate data, mathematical calculations and models, and measures quality through use of statistics. Using ratio studies to measure the level of assessment, focuses on measures of central tendency: mean, median, and weighted mean of a body of data. A median ratio of 100 percent indicates a midpoint ratio of 100 percent, with the ratio for 50 percent of the sales sample equal to or greater than 100 percent and 50 percent equal to or less than 100 percent.

Values for the sample could be very reliable and closely straddle the 100 percent ratio, or show high dispersion and greater distance from the 100 percent midpoint. Good uniformity reduces the risk that a property is assessed at more than market value.

Just because some properties may fall above the 100 percent mark does not mean that those properties are being assessed greater than 100 percent of market value. The ratio studies do not measure individual property values; they measure a body of data.

The **standard deviation (SD)** represents the average distance from the mean, in both directions, for each sale in the sample. One can predict the portion of property in the population having ratios within a particular range using standard deviation if the sample is representative of the population and the ratios are normally distributed on either side of the mean.

In the following example, Residential Neighborhood 4 has a mean ratio of 100 percent and good uniformity with a standard deviation of 10.

Using Statistics to Estimate the Portion of Population within Ratio Ranges

Type	Sample Statistics			Population		
	Mean Ratio	Level of Uniformity	Standard Deviation	68% falls within this range	95% falls within this range	99% falls within this range
				1 SD from mean	2 SD from mean	3 SD from mean
Residential NH 4	100%	High	10	90% - 110%	80% - 120%	70% - 130%
Residential NH 5	85%	High	10	75% - 95%	65% - 105%	55% - 115%
Residential NH 6	100%	Moderate	15	85% - 115%	70% - 130%	55% - 145%
Residential NH 7	85%	Moderate	15	70% - 100%	55% - 115%	40% - 125%
Residential NH 8	100%	Poor	25	75% - 125%	50% - 150%	25% - 175%
Residential NH 9	85%	Poor	25	60% - 120%	35% - 110%	10% - 160%

In the following example, assuming a normal bell curve distribution of the Neighborhood 4 sample, the mean ratio of 100 percent and standard deviation of 10 for Neighborhood 4 are used to predict how many parcels of the Neighborhood 4 population could be overvalued (or undervalued).

Residential Neighborhood 4

Percent of Parcels	Sale/Appraised Value Ratio	Range
34.0%	predicted to be within	100% – 110%
13.5%	predicted to be within	111% - 120%
2.0%	predicted to be within	121% - 130%
Less than 0.5%	predicted to be	greater than 130%

As explained in *Measuring Real Property Appraisal Performance in Washington’s Property Tax System 2017 (Department, page 36)*, the statistics developed from ratio studies of samples are subject to some error. Risk of error is less for larger samples. Sampling error can affect small sample sizes more. Another source of error or bias comes from the primary source of data. In Washington, property owners file the Real Estate Excise Tax Affidavit when properties sell, and the Department and counties use this as the sales sample source. An ideal sample would include properties from the population of properties that have an equally likely chance of being included in the sample. The potential for bias is less if the sold property is a good reflection of the population of properties.

In the IAAO’s *Fundamentals of Mass Appraisal*, the author explains when statutes mandate appraisal at market value the overall appraisal level should be between 0.90 and 1.10. This range “provides a reasonable, constructive, and cost-effective basis for ensuring that appraisals approximate market values.” (Gloude-mans and Almy, page 243)

Mass Appraisal Performance – Uniformity of Assessments

Horizontal Equity

The most widely used measure of uniformity is the **Coefficient of Dispersion (COD)**.

- It is based on the average absolute deviation (the difference between each ratio and the median ratio) and is expressed as a percentage. The COD is calculated by dividing the average absolute deviation by the median AS (assessment/sale) ratio and multiplying by 100.
- Low CODs represent good assessment uniformity.
- CODs less than five (5.0) are rare, except in an area of extremely homogenous property, and could be an indication of sales chasing.

IAAO Ratio Standard COD Range Indicating Good Uniformity

The following tables from the IAAO Standard on Ratio Studies show the generally accepted COD standards for different property classes:

Table 1

Type of Property - General	Type of Property - Specific	COD Range**
Single-family residential (including residential condos)	Newer or more homogeneous areas	5.0 to 10.0
Single-family residential	Older or more heterogeneous areas	5.0 to 15.0
Other residential	Rural, seasonal, recreational, manufactured housing, 2-4 unit family housing	5.0 to 20.0
Income-producing property	Larger areas represented by large samples	5.0 to 15.0
Income-producing property	Smaller areas represented by smaller samples	5.0 to 20.0
Vacant land		5.0 to 25.0
Other real and personal property		Varies with local conditions

These types of property are provided for guidance only and may not represent jurisdictional requirements.

This table breaks down the property type categories to take into account jurisdiction size, area profile, and market activity to further refine acceptable standards:

Table 2

General Property Class	Jurisdiction Size/Profile/Market Activity	COD Range
Residential improved (single family dwellings, condos, manuf. housing, 2-4 family)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 10.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	5.0 to 15.0
	Rural or small jurisdictions / older properties / depressed market areas	5.0 to 20.0
Income-producing properties (commercial, industrial, apartments)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 15.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	5.0 to 20.0
	Rural or small jurisdictions / older properties / depressed market areas	5.0 to 25.0
Residential vacant land	Very large jurisdictions / rapid development / active markets	5.0 to 15.0
	Large to mid-sized jurisdictions / slower development / less active markets	5.0 to 20.0
	Rural or small jurisdictions / little development / depressed markets	5.0 to 25.0
Other (non-agricultural) vacant land	Very large jurisdictions / rapid development / active markets	5.0 to 20.0
	Large to mid-sized jurisdictions / slower development / less active markets	5.0 to 25.0
	Rural or small jurisdictions / little development / depressed markets	5.0 to 30.0

These types of property are provided for guidance only and may not represent jurisdictional requirements.

Sales Chasing

IAAO states “CODs lower than five (5.0) may indicate sales chasing or non-representative samples.” The above Table 2 and quote are from the April 2013 volume of IAAO Standards on Ratio Studies pages 33-37. Although the goal is to assess ‘all’ properties at 100 percent of market value, IAAO believes that due to the many factors of a real estate transaction, it is

improbable that assessed values will be within the tight range of the sales price needed to achieve a COD of less than five. IAAO therefore, believes a COD of less than five could be a result of the selective reappraisal of sold properties.

The treatment of properties that have sold should be the same as the treatment of unsold properties.

During verification of a sale, the appraiser or sales analyst may discover that property characteristics at the date of sale are different than characteristics listed in the property record. An appraiser should exercise caution when correcting or updating characteristics of sold properties. If he or she only corrects the test data, while leaving the rest of the population uncorrected, it gives the appearance of sales chasing. This practice of intentionally or unintentionally manipulating the data used for statistical testing may produce results that look good, but it does not accurately reflect the entire population, as only the sales test data has been uniquely altered.

One should not select the sales for inclusion in an internal ratio study only because they have a “good” ratio while excluding others. An appraiser should include all of the sales when completing an analysis. Often times, the outliers or anomalies tell you what you may or may not be accurately capturing in your valuation models and where you need to make changes. The market is always changing and this information is invaluable in keeping current with the market.

Vertical Equity

Vertical equity in assessments means that property with the lowest market value (sale prices) have assessed values at the same level of market value as property with highest market value (sale prices). While neither the Vertical Equity Index nor the quintile mean ratios are IAAO standards, they are very useful measures in evaluating vertical equity. The assessor can use the measures to evaluate whether low valued properties are treated the same as high valued properties. The Vertical Equity Index provides a ratio for each quintile (20%) of values from low to high. It will help isolate value ranges that an assessor may need to adjust in order to achieve uniform valuations.

Each year the Department calculates the **Vertical Equity Index (VEI)**, which looks at quintile mean ratios (QMR). This measure is more informative than the price related differential (PRD), which is another measure of vertical equity. Both measures identify if there are different levels of assessment between strata based on sale price/market value. The Department calculates QMR by first arraying the data in order from lowest to highest by market value. Then it divides the data into five equal groups called quintiles and calculates the average ratio for each quintile. This gives a useful visual representation of the differences in the value ranges.

The closer the quintile ratios are, the better the vertical equity. The VEI scores the QMR results and is calculated by the formula below:

$$(\text{Maximum Quintile Ratio} - \text{Minimum Quintile Ratio} / \text{Average Quintile Ratio}) * 100$$

VEI numbers indicate the level of vertical equity:

- above 14 indicates vertical inequity
- 14 to 7 indicates acceptable vertical equity
- below 7 indicates good vertical equity
- below 3.5 indicates excellent vertical equity

The **Price Related Differential (PRD)** is currently an IAAO standard for measuring vertical equity. It also measures whether there are different levels of assessment between value stratum. It is calculated by dividing the mean by the weighted mean. IAAO recommends the PRD be between .98 and 1.03. A value greater than 1.00 indicates the high-value properties are under-assessed, while a value below 1.00 indicates that higher value properties are over-assessed.

The *IAAO Standard on Ratio Studies* is a good resource for a detailed explanation of ratio studies, other statistical measures, and procedures that provide confidence in the studies.

Best Practices for Improving Mass Appraisal Performance

The following list includes practices that counties could use to increase their overall median ratio and weighted mean ratio used for equalization:

- Conduct ratio studies by property type, location, value stratum to provide:
 - Internal quality assurance and identification of appraisal priorities.
 - Determination of whether administrative and statutory standards are met.
- Conduct ratio studies before, during, and at the conclusion of revaluation for the year.
- Develop time trends for adjustment of appraised values between reappraisals. Developing a time adjustment for older sales used in analysis brings them in line with current market values.
- Utilize the *International Association of Assessing Officers (IAAO) Ratio Study Standard* to measure the quality of mass appraisals.
- Review the Department's reports each year and identify assessment uniformity concerns. Department of Revenue staff are available to review the reports and statistical information about your county.
- Include land use codes, area codes, and major characteristics of parcels in your internal ratio studies to allow drilling down to find the model weakness causing lower ratios.
- Conduct additional analysis and study property characteristics as a possible cause of lower or higher levels of assessment. Identify the sales ratios that are not uniform with

other properties. Analysis may reveal a property type, location, or characteristic that you should address in the valuation model.

- Decrease the range of data used by analyzing outliers and either removing outliers that are on the extreme high or low end, or determining whether there are characteristic adjustments that you could make to bring the outlier in line with other sales. By making your range tighter, your median ratio for an area of analysis will improve.
- Ensure you do not have a practice of analyzing a neighborhood with the intention of having no or few sales exceeding a 100 percent ratio. This practice can potentially result in a level of assessment that varies from neighborhood to neighborhood. This type of restriction in the process prevents or limits meeting the requirement to have the same level of assessment between different areas and classes of property. In addition, one could construe this practice as attempting to target an assessment level that is lower than 100 percent true and fair value. It will result in a low median ratio that depends on the percent of range in the data.
- Work to improve the overall assessment level of properties in strata with lower ratios, which could include multi-family, agricultural, or commercial properties. Sometimes, lack of local sales or income data makes this difficult. In cases where data may not be available within the county, comparable income or sales data may be available from neighboring counties with similar property types. Another possibility would be to expand the area of analysis within your county to get a larger set of data to work with.
- Do not necessarily exclude invalid sales from use in internal ratio studies. While the Department considers some sales invalid for the purposes of its Ratio Study, those sales may provide useful market data for the county's internal analysis of certain classes of property. Consider using more of those sales in your ratio studies for property types where there may not be an abundance of sales, such as the commercial and agricultural classes. When sales are limited, each sale becomes more important in helping to analyze market influences.

In practice, it is sometimes difficult to achieve 100 percent true and fair value overall and to ensure the level of assessment is similar between all classes of property, especially when data may not be readily available for some property types. While some counties may find this a challenge, it is important to avoid practices that contribute to inequities in valuation and constraints that result in valuations lower than 100 percent true and fair value. The best practice is to let available data dictate how to achieve the most accurate valuations that are equitable and uniform throughout the county.

Examples of Why Uniformity is Important

A uniform level of assessment close to 100 percent true and fair market value for all property owners provides the best chance of ensuring uniformity in taxation. Assessing all property close to 100 percent of true and fair value provides the total assessed value used to determine levy rates for the calculation of taxes that fund the county, state schools, and local taxing districts.

Non-uniform levels of assessment can affect taxes paid by property owners

When appraisers do not value property at the same level of assessment within the county, it results in taxes shifting to other taxpayers.

Example: A Department ratio study indicates the level of assessment for single-family residential property assessed at \$150,000 or more is at 90 percent of market value. The level of assessment for non-residential property at \$150,000 or more is at 85 percent of market value. This example illustrates the impact of the level of assessment on the amount of taxes paid.

The next two tables show how the non-uniform level of assessment affects the amount of taxes collected from each property owner. The owner of Parcel 1 paid too much tax, while the owners of Parcels 2 and 3 paid too little tax.

Tax on parcels with non-uniform levels of assessments
(Same assessed value but different market values)

	Assessed Value (AV)	Ratio (AV/MV)	Market Value (MV)	*County Levy Rate	Tax (AV x Rate)
Parcel 1	150,000	100%	150,000	1.25603	\$188.40
Parcel 2-Residential	150,000	90%	166,666	1.25603	\$188.40
Parcel 3-Multi-Family	150,000	85%	176,470	1.25603	\$188.40
Totals	450,000		493,136		\$565.21
*Levy Rate (dollars per \$1,000 of assessed value)					

Tax on same parcels with uniform levels of assessment
(Assessed value equals market value)

	Assessed Value (AV)	Ratio (AV/MV)	Market Value (MV)	*County Levy Rate	Tax (MV x Rate)
Parcel 1	150,000	100%	150,000	1.14615	\$171.92
Parcel 2-Residential	166,666	100%	166,666	1.14615	\$191.03
Parcel 3-Multi-Family	176,470	100%	176,470	1.14615	\$202.26
Totals	493,136		493,136		\$565.21
Notes: To illustrate the effect on taxpayers we assume the total tax to be collected is the same for each example. As the taxable value increased, the rate decreased. * Levy Rate = $(565.21/493,136)*1000 = 1.14615$ (dollars per \$1,000 of assessed value)					

Non-uniform levels of assessment affects taxes paid by property owners for state schools

The Department uses the equalization ratio when calculating the state school levy. The real and personal property assessed value per county adjusted by the equalization ratio determines the true and fair market value for real and personal property. After the Department equalizes each county’s assessed value to actual true and fair value, it calculates the amount of property tax that counties must levy. The indirect equalization process ensures taxpayers in all counties contribute equally to the state school levy.

However, if there are different levels of assessment between property types or locations within a county, then there will be inequities in how much individual taxpayers contribute to the county’s portion of the state school levy.

The example below shows a county with an 85 percent equalization ratio and a countywide state school levy rate of \$2.25 per \$1,000 of assessed value. Taxpayers within the same county where some property is assessed at greater than 85 percent of market value will pay more toward state schools than those with an assessed value below 85 percent of market value.

Comparison of state schools tax on properties with \$100,000 market value (MV)

	Assessed Value (AV)	Ratio (AV/MV)	State Schools Levy Calculation	Taxes Paid
Parcel 1	80,000	80%	80,000*2.25/1000	\$180
Parcel 2	85,000	85%	85,000*2.25/1000	\$191
Parcel 3	90,000	90%	90,000*2.25/1000	\$203
Parcel 4	100,000	100%	100,000*2.25/1000	\$225
Notes: All parcels have a market value of \$100,000 State School Levy Rate = \$2.25 per \$1,000 of assessed value (applied countywide) County Equalization Ratio = 85%				

Low assessment ratio can affect levies and revenue for county and taxing districts

Taxing districts can experience a loss in property tax revenue if the assessed value of property is less than the market value:

- When voters approve a lid lift for a taxing district in a county with a low level of assessment (low ratio), the district will not be able to levy the full amount allowed by law because the property within the taxing district is being assessed at less than 100 percent of market value. For example, if a county general levy has an assessed value of \$10,000,000,000 at 100 percent of market value and voters approve a lid lift to \$1.80, the district could levy \$18,000,000. When the county has a ratio of 85.5 percent with an assessed value of \$8,550,000,000 and voters approve a lid lift to \$1.80, the district could

levy \$15,390,000. The taxing district could lose \$2,610,000 in property tax revenue because of the low assessment level.

- If a taxing district's levy is restricted to the statutory maximum rate allowed by law, not valuing property at 100 percent market value results in a loss of levying capacity.
- When a county is not valuing property at 100 percent true and fair market value, it results in a higher levy rate. This could result in the possibility of pro-rationing or elimination of levy rates for junior taxing districts due to the \$5.90 or Constitutional 1 percent limits increase. Pro-rationing or eliminating levy rates for a taxing district causes a loss of funds for that district. The loss is compounded in future years because the levy rate calculated each year is applied to new construction and state assessed property values, as part of the levy limit calculation.

Low equalization ratio reduces taxable value for state assessed utility and transportation properties

The Department conducts the *Property Tax Ratio Study* to determine the county equalization ratio. Using a county's equalization ratio directly equalizes the value of centrally assessed properties with the locally assessed property in the county. The Department appraises centrally assessed properties, which are those that cross county lines. These include airline companies, utilities, railroads, telephone companies, and gas companies. The equalization ratio reduces the assessed value determined by the Department, which also reduces the taxable assessed value for the county. A low county equalization ratio will result in a lower tax base for the county and taxing districts.

For More Information

If you have questions or need additional information about this topic contact the Department of Revenue, Property Tax Division at (360) 534-1400.

Works Cited and Other Useful References

Eckert, J., R. Gloudemans, and R. Almy, Ed. 1990. *Property Appraisal and Assessment Administration*. Chicago: IAAO.

Gloudemans, R.J., and R.R. Almy. 2011. *Fundamentals of Mass Appraisal*. Kansas City, MO: IAAO.

International Association of Assessing Officers (IAAO). 2017. *Standard on Mass Appraisal of Real Property*. Kansas City, MO: IAAO.

International Association of Assessing Officers (IAAO). 2013. *Standard on Ratio Studies*. Kansas City, MO: IAAO.