STATE OF INDIANA

DEPARTMENT OF LOCAL GOVERNMENT FINANCE

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TO: **Assessing Officials**

FROM: **Barry Wood, Director of Assessment** JBW

RE: **2010 Ratio Study Review Process / Annual Adjustment Guidance**

DATE: **January 11, 2010**

This memorandum is to inform assessing officials of changes in the ratio study review process by the Department of Local Government Finance ("Department") for 2010. These changes will streamline the ratio study review process by (1) reducing the number of data files needed for the Department to analyze the annual adjustment process, and (2) ensuring that submitted files are in a standardized format. These changes will also bolster the integrity of the data by ensuring that key assessment data is consistent across the several data files that are submitted.

This memo will outline the following changes in greater detail:

1. The Workbook must include the tax district and proposed adjustment factor for each parcel.

2. Additional Annual Adjustment ("trending") guidance for March 1, 2010 assessment and valuation date.

Workbook File Format 2010

In 2010, each county must submit a workbook to the Department for review. The workbook should list the following data for each parcel of real property. New additions are marked in **bold type** for emphasis:

1. State-assigned Parcel Number
2. Township
3. **Tax District**
4. Neighborhood
5. Property Class
6. Prior Year Land AV
7. Prior Year Improvements AV
8. Prior Year Total AV
9. Current Land AV
10. Current Year Improvements AV
11. Current Year Total AV
12. **Proposed adjustment ("trending") factor**

Please note the following with reference to workbooks and see an example workbook in the correct format on the Department's Web site at http://www.in.gov/dlgf/4699.htm and http://www.in.gov/dlgf/7187.htm.

- For counties with fewer than 65,000 parcels, **only submission as a 2007-compatible MS Excel spreadsheet is acceptable**. All other submission formats will not be analyzed. Owing to size restrictions in MS Excel, counties with more than 65,000 parcels may submit their workbook as an MS Access 2007 compatible database.

- All information in the workbook must be submitted on one tab of a 2007 MS Excel-compatible spreadsheet. In particular, it is not acceptable to submit one tab per township, or submit half the parcels in one tab and half in another.

- The fields should be in the order listed above. Specifically, the first column should contain the state-assigned parcel number, the second column the township number, and so on.

- The first row of each column should be the column's heading.

- There should be no white space between the heading and the first entry on any of the columns, or between any of the columns.

- **The parcel's Tax District must be included in the workbook**. This will facilitate Department analysis of data at the tax district level.

- The proposed adjustment or "trending" factor for each parcel must also be included in the workbook. Including the trending factor will assist the Department in determining the percent change attributable to the annual adjustment process. It will also ensure that the Department can fully reconstruct a given assessment if need be. If no trending factor was applied for a parcel (for example, because the income approach was used to value that parcel), then this should be noted in the workbook.

Additional Annual Adjustment ("Trending") Guidance

RATIO STUDY SUBMISSION BY COUNTY

- It is highly recommended that the county conduct an internal ratio study before submitting their values to the Department. If a ratio study is completed, it is appreciated if a copy is forwarded to the Department.

TRENDING MUST BE SIMPLIFIED

- **Assessments only need to be changed when there is a clear indication based on market evidence that valuations no longer meet assessment level and uniformity standards, or when there are significant physical changes to a property.**

ASSESSMENT DATE AND VALUATION DATE

- **The county assessor shall use sales of properties occurring during a time period that is as short as possible and, ideally no more than fourteen (14) months before the March 1, 2010 assessment and valuation date.** A longer time period may be required to produce a representative sample for a property class within the county.

- To develop an adequate sample size, the sales used in ratio studies may span a period as long as five (5) years provided economic shifts are taken into account, property characteristics are as they were at the time of the sale, and sales prices have been adjusted for time as necessary.

- The valuation date and assessment date is March 1, 2010. Sales occurring before that date shall be time adjusted if appropriate, in accordance with the IAAO Standard. The time adjusted sale price shall become the basis for all ensuing analysis undertaken under this article.

SALES SCREENING AND VERIFICATION

- The county assessor shall retain and properly verify all sales disclosure forms forwarded under IC 6-1.1-5.5-3. In conjunction with IAAO Standards, the county assessor shall utilize the sales verified to perform value calibration analysis to determine whether adjustment factors are required within any neighborhoods and property classes of the county for annual adjustment and equalization as required by this article.

- Each county assessor shall complete all sales verification prior to March 1, 2010 for sales occurring before March 1, 2010.

- Sales data must be routinely confirmed. Receipt of properly certified sales disclosure forms required by IC 6-1.1-5.5 initiates the verification process and provides important information by which sales data are confirmed.

- Sales used in a ratio study must be screened to ensure they reflect the market value-in-use of the real property transferred. Specific objectives of sales screening are to ensure the following:
  (1) Sales used in ratio studies reflect market value-in-use.
  (2) Sales prices reflect only the market value-in-use of the real property transferred and not the value of personal property, financing, leases, or other parcels of real property.
  (3) Only sales that occurred during the period of analysis are used.
  (4) Sales are excluded from the ratio study only with good cause (for example, when they compromise the reliability of the ratio study).

- **Every arm's length, open-market sale that appears to meet the conditions of a market value transaction <u>shall</u> be included in the ratio study** unless one (1) of the following occurs:
  (1) data for the sale are incomplete, unverifiable, or suspect.
  (2) the sale fails to pass one or more specific tests of acceptability as listed in the IAAO *Standard on Ratio Studies*, Appendix A (July 2007).

- All sales are candidates for the ratio study unless "sufficient and compelling information" can be documented to show otherwise.

- Sale prices used in the ratio study shall be adjusted for financing, assumed long-term leases, personal property, gift programs, and date of sale in accordance with the IAAO *Standard on Ratio Studies*, Appendix A (July 2007).

- When there is more than one (1) confirmed valid sale of the same property during a ratio study period, only the final transaction shall be used in the ratio study.

- No "cherry picking" will be permitted. "Cherry picking" is when assessors manipulate the data used in ratio studies, and regard as valid sales only sales that closely match assessed values.

SAMPLE SIZE

- Neighborhoods must have five (5) or more sales if the sales comparison approach is used to value improvements or land. For greater precision, a larger sample size is needed. Therefore, in accordance with IAAO guidance, **the Department will require that adequate sample sizes will be used**.

  - There are several methods of determining land values in the absence of adequate sales in a neighborhood, including but not limited to, the following:
    - Use land values from a similar neighborhood that has vacant land sales to support the land base rate.
    - Extract the land value from valid sales of improved properties.
    - Expand the period from which sales are drawn and adjust for time as necessary.

- If commercial and industrial improved properties have a limited number of sales (e.g. less than five (5) sales in the strata), the county must use the other approaches to value as outlined in 50 IAC 21-5-2 (i.e., Marshall & Swift, income data, MLS data, etc…).

PROPERTY CHARACTERISTICS

- Property characteristics data must be continually updated in response to changes brought about by new construction, new parcels, remodeling, demolition, and destruction. The most efficient way of doing this involves building permits.

- The basic physical characteristics of each property used in the ratio study must be the same when assessed and when sold.

ADJUSTMENTS TO SALES PRICE ON SALES DISCLOSURE FORM

- Adjustments to sales price must be documented on the sales disclosure forms (e.g. personal property; points paid; etc.). The adjusted price on the sales disclosure form should match the sales price listed on the ratio study for each parcel.

RATIO STUDY STATISTICAL MEASURES

- Ratio study statistics shall be calculated based on the methods and procedures contained in the IAAO *Standard on Ratio Studies* (July 2007).

- The **level of assessment**, as determined by the median ratio, must fall between 0.90 and 1.10 for any class of property. However, confidence intervals, rather than the median ratio itself, will be used to determine compliance with this benchmark.

- The **Coefficient of Dispersion (COD)** standard for improved residential property is 15.0 or less. Income-producing property, vacant land, and other real property have a COD standard of 20.0 or less.

- The **Price-Related Differential (PRD)** must be between 0.98 and 1.03. However, in accordance with the *Standard on Ratio Studies*, if there are less than twenty (20) sales in a particular township or class of property, the Spearman Rank test will be relied upon to determine if vertical equity has been met for that stratum. This will resolve the well-known sensitivity of the PRD to outliers in small samples.

- Confidence intervals are a way of capturing the variation in a sample of properties. For example, the median ratio is generally relied upon as the best estimate of the overall level of assessment for a given property stratum. However, the sample median itself is not an exact estimate of the population median, only the assessor's "best guess." The accuracy of this estimate improves when more sales are used. For example, one would have more confidence that the sample median represented the actual level of assessment, if the stratum contained fifty (50) sales rather than five (5) sales. A confidence interval consists of a lower and upper bound for the median ratio and a given level of confidence that the actual median ratio is between those two bounds. In all cases, the level of confidence used by the Department will be 95% (two-tailed).

- The goal is to achieve an overall assessment level equal to 100% of market value. However, ensuring uniformity in assessment levels among strata is also important. Therefore, the overall **assessment level of each township and property class must be within five percent (5%) of the overall assessment level of the county**. For example, if the assessment level of the county is 1.03, the assessment levels of the townships must be between 0.98 and 1.08. Note that confidence intervals will be used in making this determination.

- The assessment level of each major property class must be within five percent (5%) of the overall assessment level of the county. For example, if the assessment of the county is 1.03, the assessment level of each major property class must be between 0.98 and 1.08. The six major property classes are: Industrial Vacant (code 300); Industrial Improved (codes 301 – 399); Commercial Vacant (code 400); Commercial Improved (codes 401 – 499); Residential Vacant (codes 500 – 509); and Residential Improved (codes 510 – 599). Note that confidence intervals will be used in making this determination. Properties with class codes less than 300 or greater than 599 will not be considered in making this determination.

OVER-STRATIFICATION

- Care must be taken not to over-stratify, that is, to create strata that are too small to achieve statistical reliability. *IAAO Standard on Ratio Studies*, Part 2, Standard 3.5.2 (July 2007); *IAAO Standard on Ratio Studies*, Standard 4.4 (July 1999).

OUTLIERS

- Outlier ratios are very low or high ratios as compared with other ratios in the sample. One extreme outlier can have a controlling influence over some statistical measures. Outlier ratios can result from an erroneous sale price, a non-market sale, unusual market variability, a mismatch between property sold and the property assessed, and other reasons. *IAAO Standard on Ratio Studies*, Standard 5.2 (July 2007); *IAAO Standard on Ratio Studies*, Standard 6.6 (July 1999).

- The preferred method of handling an outlier ratio is to subject it to additional scrutiny to determine whether the sale is a non-market transaction or contains an error in fact. If the error can be corrected (e.g., data entry error), the property must be kept in the sample. If the error cannot be corrected or inclusion of the identified outlier would reduce sample representativeness, the sale must be excluded.

- The method listed in Appendix B of the *IAAO Standard on Ratio Studies* (July 2007) should be used to identify outliers.

- After identification, the cause of each outlier must be determined by investigation. Outliers should only be excluded when they represent truly unusual values that are not characteristic of a larger systemic pattern in the data. **All trimmed outliers must be reported to the Department along with a brief explanation of the reason for their removal.**

MULTIPLE PARCEL SALES

- A multiple-parcel sale is a transaction involving more than one (1) parcel of real property. If the assessor needs to include multiple-parcel sales, he/she should first determine whether the parcels are contiguous and whether the sale comprises a single economic unit or multiple economic units.

- Regardless of whether the parcels are contiguous, any multiple-parcel sale that involves multiple economic units generally should not be used in ratio studies because of the likelihood that these sales include some plottage value or some discount for economies of scale, unless adequate adjustments for these factors can be made to the sale price.

TIME ADJUSTMENT OF SALES

- Time series analyses can be used to develop a multiplier or index factor to update existing assessed values or to adjust sales prices for individual properties to the valuation date.

- Four methods used to develop time trend factors in assessment are:
  - Value per-unit analysis;
  - Re-sales analysis;
  - Sales/assessment ratio trend analysis; and
  - Inclusion of time variables in sales comparison models.

- See *Mass Appraisal of Real Property*, Robert J. Gloudemans (IAAO 1999), Chapter 6; and *Standard on Automated Valuation Models (AVMs)* (IAAO 2003), Standards 4.4 and 5.5.

RENTAL AND LOW-INCOME PROPERTIES

- For rental properties with **one (1) to four (4) rental units**, the Gross Rent Multiplier approach should be used. The resulting workbook values should reflect this value. IC 6-1.1-4-39(b).

- The true tax value of real property regularly used to rent or otherwise furnish residential accommodations for periods of thirty (30) days or more and that has **more than four (4) rental units** is the lowest valuation determined by applying each of the following appraisal approaches:

    1. Cost approach that includes an estimated reproduction or replacement cost of buildings and land improvements as of the date of valuation together with estimates of the losses in value that have taken place due to wear and tear, design and plan, or neighborhood influences.
    2. Sales comparison approach, using data for generally comparable property.
    3. Income capitalization approach, using an applicable capitalization method and appropriate capitalization rates that are developed and used in computations that lead to an indication of value commensurate with the risks for the subject property use. IC 6-1.1-4-39(a).

- The true tax value of low income rental property (real property used to provide low income housing eligible for federal income tax credits awarded under Section 42 of the Internal Revenue Code) is not determined by applying the lowest valuation from the three approaches to value, as described above. Rather, the true tax value of low income rental property is the greater of the true tax value:

    1. determined using the income capitalization approach; or
    2. that results in a gross annual tax liability equal to five percent (5%) of the total gross rent received from the rental of all units in the property for the most recent taxpayer fiscal year that ends before the assessment date. IC 6-1.1-4-39(e), -41.

FORECLOSURES

- **When foreclosure-related sales constitute the preponderance of sales in an area *or* research shows little difference between them and comparable conventional sales, then validated foreclosure-related sales can be used without adjustment.**

- However, in order for foreclosure-related sales to be used for modeling, valuation, or ratio studies, they must first meet the **market value** (defined below) test.

    - The most probable price (in terms of money) which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- The buyer and seller are typically motivated;
- Both parties are well-informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure on the open market;
- Payment is made in terms of cash or in terms of financial arrangements comparable thereto;
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale. IAAO *Guide to Foreclosure-Related Sales and Verification Procedures* (August 2009)

SALES CHASING

- **Sales chasing is the practice of adjusting the value on properties that sold without regard to the market analysis performed in setting values for the population.** Sales chasing can occur on an individual basis or done systematically.
    - On an individual basis, it may occur when individual sales are reviewed with focus on the assessed value to the sales price. In such a situation, the assessor changes characteristics of the property in order for the value to come in line with the sales price.
    - Systematic sales chasing may occur if, when creating adjustments for the market, characteristics are over-stratified. The most common over-stratification is with the creation of neighborhoods.
- **A subtle, possibly inadvertent, variety of sales chasing occurs when the recorded property characteristics of sold properties are differentially changed relative to unsold properties.** Then the application of a uniform valuation model to all properties results in the recently sold properties being more accurately appraised than the unsold ones.
- **Local assessors shall avoid the practice of sales chasing**. The Department shall monitor and discourage sales chasing because unless similar unsold parcels are reassessed at the same level as sold parcels, sales chasing causes inequitable treatment of taxpayers by shifting the tax burden to taxpayers who have recently bought property.
- As long as sold and unsold parcels are assessed in the same manner and the data describing them are coded consistently, statistics calculated in a sales ratio study can be used to infer assessment performance for unsold parcels. However, if parcels that sell are selectively reassessed or recoded based on their sales prices or some other criterion (such as listing price) and if such parcels are in the ratio study, sales ratio study uniformity inferences will not be accurate (assessments will appear more uniform than they are).
- All ratio studies will be evaluated by the Department using the methods listed in Appendix D of the *IAAO Standard on Ratio Studies* (July 2007). The technique described under D.1: Comparison of

Average Value Changes — the Mann-Whitney test — will be the most commonly employed method, although the use of other methods is not precluded.

- When the Mann-Whitney test is used, it will be conducted at the neighborhood level. All neighborhoods with five (5) or more sold parcels will be tested. **At least ninety-five percent (95%) of all tested neighborhoods must pass the Mann-Whitney test for the ratio study to be approved**. For example, a county with one hundred (100) testable neighborhoods must have at least ninety-five (95) of those neighborhoods pass the Mann-Whitney test for the ratio study to be approved.

- The null hypothesis in all cases will be that the percent change of sold properties in a neighborhood is not greater than the percent change of unsold properties in that neighborhood. This hypothesis must be rejected with at least ninety-five percent (95%) confidence before sales chasing can be said to have occurred. An adjustment for multiple tests will be used to ensure that the total percentage of false positives is not greater than five percent (5%). Parcels that have undergone substantial changes—as reflected by either a change in property class or as reported by the assessor—will not be tested. Such reported changes must be subject to substantiation by comparing the data reported in the eight (8) standard files submitted contemporaneously with the ratio study to the data so reported for the relevant parcels in the prior year. *See also IAAO Standard on Ratio Studies*, Standard 10 (July 1999).

- Once it is determined that sales chasing probably has occurred and probably is reducing the validity of ratio study statistical measures of level or uniformity, it is necessary for the assessor to redo the ratio study to establish valid measures before any other recommendations, such as reassessment in accordance with IC 6-1.1-4 or equalization action in IC 6-1.1-14, may be made.

CHANGE FOR CHANGE'S SAKE

- According to the *IAAO Standard on Property Tax Policy*, Standard 4.2.2 (August 2004), in the annual adjustment process, the county assessor is required to re-evaluate the factors that affect value each year, express the interactions of those factors mathematically, and use mass appraisal techniques to estimate property values. As a result, although it is necessary to observe and evaluate, **it is not always necessary to change the assessment of each property each year to achieve current market value-in-use**.

- In other words, as stated in the *Statewide Property Tax Equalization Policy Report* conducted by the Indiana Fiscal Policy Institute (October 2005), **assessments only need to be changed when there is a clear indication based on market evidence that valuations no longer meet assessment level and uniformity standards, or when there are significant physical changes.**

Questions on this memo may be directed to David Schwab, Assistant Director of Data Analysis, at dschwab@dlgf.in.gov or 317.234.5861 or Barry Wood, Director of Assessment, at bwood@dlgf.in.gov or 317.232.3762.