

UTAH STATE TAX COMMISSION

Property Tax Division

2001 ASSESSMENT/SALES RATIO STUDY

2001

FOR SALES OCCURRING

JANUARY 1, 2000 TO DECEMBER 31, 2000

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PREFACE

Utah law requires all real property to be assessed at market value.¹ Assessing property consistently at market value creates equity by ensuring that the property tax burden is distributed uniformly among taxpayers throughout the state. Counties are responsible for assessment of property on a local basis. The Utah Code requires assessors to complete property reviews on a five-year cycle and to update values annually through reappraisal or other value adjustments.² The State Tax Commission utilizes the Assessment/Sales Ratio Study to monitor and equalize local assessments of real property statewide.

The Property Tax Division of the Utah State Tax Commission is responsible for the Assessment/Sales Ratio Study. It is conducted annually as prescribed by statute.³ The ultimate goal of the study is to ensure that all locally assessed real property throughout the state is assessed uniformly based on market value. The study therefore serves as both a monitoring device for the State Tax Commission as well as a tool for counties in achieving quality assessments.

The study process is evolving through the years. The statistical methods employed in the study are more sophisticated and reliable than in years past. County officials and personnel are becoming more involved in the actual gathering, cleaning and analysis of the data. Innovative efforts of communication by both state and local parties are allowing the study to evolve into more of a tool for quality assessments and less of a policing device.

This year marks a milestone in the evolution of the Assessment/Sales Ratio Study in Utah. On December 19, 2000, the Tax Commission adopted a new Administrative Rule R884-24P-27. The new rule mandates that the Property Tax Division conduct a preliminary annual study and present it to the county assessors by April 30th of the current year. The counties can then apply adjustments to their valuations prior to closing their tax rolls on May 22nd. If those adjustments are insufficient to cause the county to achieve state mandated standards then factor orders issued by the Property Tax Division are to be implemented prior to tax notices being mailed to the taxpayers on July 22nd. In past years, factor orders were implemented for the following assessment year.

Results from this initial year under the new rule are encouraging. The number of corrective action orders issued decreased substantially due to the assessors having the preliminary study in their possession and taking action to correct deficiencies. As opposed to factor orders, reappraisal orders will continue to be implemented for the following tax year.

1 Utah Code, §59-2-103

2 Utah Code, §59-2-303.1

3 Utah Code, §§59-2-704 & 704.5

The Utah Assessors Association and other county officials have contributed much time and resource to this study. Their increasing participation and support is acknowledged and appreciated.

INTRODUCTION

This Assessment/Sales Ratio Study is conducted in accordance with the relevant state statutes,⁴ administrative rules,⁵ and using the applicable guidelines recommended for such studies by the International Association of Assessing Officers (IAAO).⁶

The purpose of this study is to measure the overall assessment performance and effectiveness of the local assessment jurisdiction. Two general tests are employed.

First, the “level of assessment” test evaluates the tendency of assessments to be at, above, or below market value. It is especially useful in determining the proportional equity of the tax revenue contributions of counties to the Uniform School Fund. The mean and the median are used to estimate the countywide level of assessment for each of four classes of property: primary residential, secondary residential, commercial, and vacant land properties. The dollar-weighted mean (DWM) is also calculated to aid in the analysis of assessment levels.

Second, the “uniformity” test addresses the degree of variability of assessments, whether tightly grouped near the average level of assessment or widely dispersed above and below. Uniformity is measured statistically using the coefficient of dispersion (COD) and the coefficient of variation (COV). These measures are important in evaluating assessment performance because they indicate how consistently property is being assessed within a specific county. A high degree of dispersion among ratios indicates a lack of equity in assessments.

The mean and the median are not only used to measure the level of assessment countywide, but also to measure uniformity or equity *within* each county. This is accomplished through the process of “stratification,” where the four classes of property listed above are stratified into smaller samples to identify specific valuation characteristics.

The level of assessment and the uniformity within each county must comply with the standards set forth in Administrative Rule R884-24P-27. The complete rule text is reprinted in Appendix V. The State Commission may order a county to take corrective action in the case of non-compliance.⁷ Corrective action orders are designed to address specific valuation problems, while minimizing any adverse impact the action may have on assessments that meet standard.

⁴ Utah Code, §§59-2-704 & 704.5

⁵ Utah Administrative Code, R884-24P-27 & R861-1A-11

⁶ International Association of Assessing Officers, Sale Ratio Standards (Chicago: The International Association of Assessing Officers, 1999)

⁷ Utah Code, §59-2-704(2).

The 2001 Assessment/Sales Ratio Study is based on arms-length sales occurring from January 1, 2000, through December 31, 2000. Sales are selected primarily from qualified warranty deeds, supported by data received in response to questionnaires completed by the buyer of the property. In areas where a multiple listing service is available, sales reported by the local service may be used when appropriate to supplement the returned questionnaires. Where samples are small for a given class of property, the study period may be extended. In extreme cases other analysis may be used to determine compliance. This would be accomplished through the evaluation of the county's assessment procedures and practices including local valuation guidelines, market data collection, or elements of training, resources, and funding.

Appraisals may be performed to supplement the sales data where sample size is small; however, for the 2001 study cycle, no appraisals were conducted.

METHODOLOGY

Overview

The sample for the study consists of properties that have recently sold. Two values are necessary to construct an assessment/sale ratio for a specific property. The first is the county's appraised market value, which is obtained from the county assessor's records. The second is the sale price of the property, which is obtained from buyers' responses to questionnaires or from other market sources. For purposes of this study, the terms "appraised market value" and "assessed value" are synonymous, meaning the assessor's fair market valuation before any exemptions or statutory reductions.

The assessed value is divided by the sale price to obtain each property's assessment/sale ratio. The entire sample of ratios is then analyzed statistically to evaluate a county's assessment performance.

Sale Data Collection

The study begins with the identification of properties that have sold. Recorded deeds are the basis for identifying potential sales to be included in the study. Questionnaires are mailed to the grantees listed on deeds to request information about the recorded transaction. In addition, sale data may be gathered from local multiple listing service reports where available and appropriate. Each sale transaction is screened and verified before it is considered to be an arms-length representation of the market. The following criteria are used to qualify recorded deeds for the study:

1. Deeds must be instruments of conveyance of real property.
2. In most cases they must be warranty deeds or special warranty deeds. In some cases quit claim deeds may be used if they represent a substantial portion of the market.

3. The instrument recordation date is be between January 1, 2000 and December 31, 2000.

Up to two questionnaires are mailed to the person or persons listed as grantee for each deed in order to obtain a response.

Sale Data Cleaning

Returned questionnaires are screened and only arms-length market transactions qualify for inclusion in the study. Sold properties are classified into four general use types: primary residential, commercial, vacant land, and secondary residential (second homes or cabins). The following are reasons to exclude a sale from the study:

1. The sale occurred outside the current study period of January 1, 2000 to December 31, 2000. Where sales activity is limited, sales from prior periods may be used.
2. The sale was compulsory because of foreclosure, divorce, condemnation, etc.
3. The sale was between relatives, affiliated companies, or their officers.
4. The property was sold to or purchased from any church, fraternal, educational, or governmental organization.
5. Real estate in more than one county was involved.
6. A partial interest only was purchased or sold.
7. Possession by buyer was delayed for more than one year.
8. The sale was strictly a transfer of convenience, i.e. the creation of a family trust or the correction of a title.
9. The sale involved an unknowledgeable buyer or seller.
10. The sale involved a trade for which a value cannot be verified.
11. The sale included a significant amount of personal property for which a value cannot be verified.
12. The property involved mixed-use from among the four classifications.
13. Property was currently assessed under the Farmland Assessment Act.
14. The property was split or joined during 2000 and lacked a serial number or assessment as of January 1, 2001.

Matching Sale to Assessment

Care must be taken to achieve an accurate match between the property as it sold and the property as it was appraised by the county assessor to insure that an appropriate comparison can be made between the two. For example, after a home sells, the new owner may change the property by building additional living area. In that case the home in its new form no longer represents the property as it was on the date of sale. If the assessment occurs following the change, the sale and the assessment do not match and must be excluded from the study. On the other hand, if the assessment occurs prior to the change, then the ratio may be included in the study.

Another instance when it is necessary to carefully match the sale and assessment is when a major change in property use occurs after the date of sale. If the assessor could not have readily anticipated the change in use through highest and best use analysis, then the property that was assessed may not match the property that sold and may need to be excluded.

Adjustments to the Sale Price

Sale prices may require adjustment to ensure they represent only the value of the real estate under current market conditions. The following are conditions under which sale prices require adjustment:

1. The sale included a significant amount of personal property for which a value is known.
2. The market conditions on the date of sale were different than they were on January 1, 2001, and evidence supports a “time-adjustment.”

Assessment Data Collection

Assessed values are collected from the assessor’s records along with the location and selected physical characteristics of each sold property. Location is identified first according to broad regions, then by smaller areas called districts, and finally by specific market areas called neighborhoods. Size of sold parcels is identified by number of acres. Improvement age, effective age and floor area is gathered. Since sales often involve multiple parcels in a transaction, care is taken to ensure that data for all parcels involved in the sale are identified and included.

Statistical Analysis

An assessment/sale ratio for each sold property in the sample is calculated by dividing the assessed value by the sale price. The ratios are then stratified into the four general classes for analysis. Each class is further stratified into sub-classes based on location, age or effective age, and size. Statistics for sub-class stratifications form a basis for issuing corrective action orders, but are not reported here.

Three averages or measures of central tendency are analyzed: the median, the mean and the dollar-weighted mean (DWM). In addition, a 95% confidence interval is calculated around the median and the mean. Two measures of dispersion are analyzed as a test for uniformity: the coefficient of dispersion (COD) and the coefficient of variation (COV). Vertical equity is analyzed using the price-related differential (PRD).

The example in FIGURE 1 presents five individual assessment/sale ratios. Included are the parcel number, the assessed or appraised market value, and the sale price for each parcel. The individual ratios are computed by dividing each assessed value by its related sale price.

FIGURE 1

<u>PARCEL</u>	<u>ASSESSED VALUE</u>	<u>SALE PRICE</u>	<u>RATIO %</u>
1	\$88,000	\$101,000	87
2	67,000	63,000	106
3	59,000	58,000	102
4	72,000	72,500	99
5	52,000	54,000	96

The mean is the arithmetic average of the ratios and is calculated by summing the ratios and dividing by the number of ratios in that sample. The mean ratio in FIGURE 1 is calculated as follows: $87\% + 106\% + 102\% + 99\% + 96\% = 490\%$; then, $490\% \div 5 = 98\%$.

The median is simply the middle ratio of the sorted or arrayed assessment/sale ratios. If there is an even number of ratios, the median is the average of the middle two ratios. The median divides the data into two equal parts and is less affected by the extreme ratios on either side of the distribution than other measures of central tendency.

To find the median, the individual ratios in FIGURE 1 are arranged in order of magnitude from lowest to highest. The middle ratio in the series is then selected. This array is presented in FIGURE 2. The number of sales in this sample is odd; therefore the ratio of 99 is identified as the median or middle ratio.

FIGURE 2

<u>PARCEL</u>	<u>ASSESSED VALUE</u>	<u>SALE PRICE</u>	<u>RATIO%</u>
1	\$88,000	\$101,000	87
5	52,000	54,000	96
4	72,000	72,500	99 *
3	59,000	58,000	102
2	67,000	63,000	106
Totals:	\$338,000	\$348,500	

* The Median is the middle number in the array.

The DWM is calculated by dividing the sum of the county's appraised market values for the sold properties in the sample by the sum of the sale prices for those properties. The

DWM doesn't give equal weight to each ratio; rather, it gives weight to each sale dollar and thus is more affected by ratios with high sales prices.

The dollar-weighted mean is calculated for FIGURE 2 by dividing the total of the county appraised values of \$338,000 by the total of the sale prices of \$348,500 = 97%.

Since a measure of central tendency simply calculates the average for one single instance, it is conceivable that each new sample, theoretically speaking, could produce a different measure of central tendency within a given range. In fact, the central tendency of the entire population that the samples represent can only be assumed to fall within a certain range. The wider the range, the more confident we become that the “true” measure of central tendency lies within it. This range is the confidence interval. For this study the 95% confidence interval is used, meaning we are 95% confident that the “true” measure of central tendency lies within it. A detailed presentation of the calculation of the 95% confidence intervals is presented in IAAO’s *Property Appraisal and Assessment Administration*.⁸

The COD is the average absolute deviation divided by the measure of central tendency. In this study the COD is calculated about the median. The average absolute deviation is defined as the sum of the absolute differences between the individual observations and the measure of central tendency, divided by the number of observations.

Calculation of the COD for the ratios in FIGURE 2 is illustrated in FIGURE 3 below.

FIGURE 3

<u>RATIO %</u>		<u>MEDIAN %</u>	<u>ABS. Deviation From MEDIAN</u>
87	-	99	12
96	-	99	3
99	-	99	0
102	-	99	3
106	-	99	<u>7</u>
			25
Total Deviation ÷ Number of Ratios = Average Deviation			
25 ÷ 5 = 5.0			
And:			
Average Deviation ÷ Median x 100 = COD			
(5.0 ÷ 99) x 100 = 5.05			

The COV is the standard deviation expressed as a percentage of the mean. The standard deviation is the square root of the variance. The variance is the summation of the squared deviations from the mean divided by the degrees of freedom (the number in the sample minus one).

Using the same ratios as above, the COV is calculated in FIGURE 4 below:

⁸ International Association of Assessing Officers, *Property Appraisal and Assessment Administration* (Chicago: The International Association of Assessing Officers, 1999) pp. 608-609

FIGURE 4

<u>RATIO %</u>		<u>MEAN %</u>	(<u>ABS. Deviation From MEAN</u>) ²
87	-	98	121
96	-	98	4
99	-	98	1
102	-	98	16
106	-	98	<u>64</u>
			206

Sum of Squared Deviations ÷ (Number of Ratios – 1) = Variance
 $206 \div 4 = 51.5$

$\sqrt{\text{Variance}} = \text{Standard Deviation}$
 $\sqrt{51.5} = 7.18$

Standard Deviation ÷ Mean x 100 = COV
 $7.18 \div 98 \times 100 = 7.33$

The PRD describes to what degree assessments are regressive or progressive. It is calculated by dividing the mean ratio by the dollar-weighted mean ratio. An assessment is said to be regressive if higher priced properties are under-assessed relative to lower priced properties. Conversely, a progressive assessment is when higher priced properties are over-assessed relative to lower priced properties. The PRD is typically expressed in decimal form. If the PRD is greater than 1, the assessment is regressive; if less than 1, it is progressive.

In the preceding examples, the mean ratio is 98% and the dollar-weighted mean ratio is 97%; therefore, the PRD is $0.98 \div 0.97 = 1.01$. This is very slightly regressive.

PERFORMANCE STANDARDS

The Tax Commission has adopted standards of performance developed primarily from those recommended by the IAAO.⁹ They are written in Administrative Rule R884-24P-27, which is reprinted in Appendix V. The standards are summarized in FIGURE 5:

⁹ International Association of Assessing Officers, Sale Ratio Standards (Chicago: The International Association of Assessing Officers, 1999)

FIGURE 5

County Size	Property Class	Minimum Sample Size	Mean or Median	COD	COV
Urban	Primary Residential	10	90 – 110%	15	19
	Commercial	10	90 – 110%	15	19
	Vacant Land	10	90 – 110%	20	25
	Secondary Residential	10	90 – 110%	20	25
Rural	Primary Residential	10	90 – 110%	20	25
	Commercial	10	90 – 110%	20	25
	Vacant Land	10	90 – 110%	25	31
	Secondary Residential	10	90 – 110%	25	31

The statistical measure used in the analysis depends on whether or not the sample ratios are normally distributed around the mean; in other words, whether or not the sample is parametric. If the sample is parametric, the mean and the COV are analyzed. If not, the median and COD are analyzed.

The first test for level of assessment compliance is whether the measure of central tendency is between 90% and 110% of market value. If the sample measure of central tendency falls within the 90% to 110% range, the sample passes and analysis ends. If the sample measure of central tendency falls outside of that range, a second test is applied.

The second test analyzes the confidence interval. If the confidence interval contains the legal level of assessment of 100 percent, the sample passes and analysis ends. If the legal level of assessment of 100 percent lies outside the confidence interval, a county may be ordered to factor the properties lying in the affected strata.

To determine what factor should be applied in areas that fail to pass the first two tests, the COV or COD are reviewed to determine the reliability of the sample. If the COV or COD passes standard, the county may be ordered to factor its corresponding assessments from the measure of central tendency to the legal level of assessment of 100 percent. If the COV or COD fails standard, we are less certain that the sample measure of central tendency accurately reflects the population’s true measure of central tendency. Therefore, a county may be ordered to factor its corresponding assessments from the confidence interval closest to the legal level of assessment of 100 percent.

A test for uniformity of assessments is conducted only on properties that were reappraised during the current assessment cycle. This test analyzes the COD or COV. If the sample’s measure of dispersion is equal to or less than the standards shown in Figure 5, the sample passes and analysis ends. If the measure of dispersion is higher than the standards, the sample fails and a county may be ordered to reappraise the properties again.

SELECTIVE REAPPRAISAL AUDITS

County assessments are audited to determine if the sold properties in the study have been assessed in the same manner as properties that have not sold. A sample from each group is analyzed by dividing the current year's assessments by the prior year's assessments. The ratio indicates the percent change in value for that group. If the percent change is similar for each group, uniform treatment of both groups is assumed to have taken place. If the change in assessments for the two groups varies significantly, sold properties are assumed to have been "selectively" appraised, and corrective action may be ordered.

APPEAL OF CORRECTIVE ACTION ORDERS

Counties receiving orders to correct their assessments may appeal those orders pursuant to Administrative Rule R861-1A-11, presented in Appendix VI. The rule also allows the Property Tax Division to adjust orders prior to a county's official appeal or to enter into stipulations with counties subsequent to an appeal.

CORRECTIVE ACTION ORDERS BY COUNTY

The following pages summarize the corrective action orders issued by the Property Tax Division and any stipulations entered into between the Division and the respective counties. In some cases, the stipulations and agreements were entered into prior to corrective action orders being issued and were the result of a cooperative effort between the Division and the county assessor's office in analyzing the data and identifying specific problem areas. In many cases, the assessor had identified areas of concern and agreed to take corrective action when the Property Tax Division would have had insufficient data to order corrective action. This cooperative effort between the assessors and the Division helped to target factor orders to specific problem areas and avoided factoring areas that were in compliance.

Beaver County:

No Corrective Action Order issued.

Box Elder County:

No Corrective Action Order issued.

Cache County:

No Corrective Action Order issued.

Carbon County:

No Corrective Action Order issued.

Daggett County:

No Corrective Action Order issued.

Davis County:

No Corrective Action Order issued.

Duchesne County:

No Corrective Action Order issued.

Emery County:

No Corrective Action Order issued.

Garfield County:

- Reappraise vacant land in Escalante. (We acknowledge that you already have this area identified as your reappraisal area for next year.)
- Reexamine vacant land within the Panguitch Cemetery District.

Grand County:

No Corrective Action Order issued.

Iron County:

No Corrective Action Order issued.

Juab County:

- Reexamine vacant land sales and assessments in Eureka and bring to market value for the 2002 tax year.
- For the 2002 tax year, examine the larger parcels of vacant land in the unincorporated county. Review current market conditions and assessment practices.

Kane County:

No Corrective Action Order issued.

Millard County:

No Corrective Action Order issued.

Morgan County:

No Corrective Action Order issued.

Piute County:

No Corrective Action Order issued.

Rich County:

No Corrective Action Order issued.

San Juan County:

- Reappraise all primary residential properties in the Blanding Cemetery District built between 1966-1980. We acknowledge that you have already identified this area as part of your scheduled reappraisal area for 2002.
- Reappraise all primary residential properties in the Monticello Cemetery District built between 1966-1980. We acknowledge that you have already identified this area as part of your scheduled reappraisal area for 2002.
- (Note: Administrative Rule R884-24P-27 requires that a preliminary report must be completed by November 30th for all orders to reappraise.)
- Review primary residential properties in the Spanish Valley and Bluff areas. While sales in these areas are limited in the current study, sales from the current and past studies as well as any other market data should be evaluated.

Salt Lake County:

No Corrective Action Order issued.

Sanpete County:

The following stipulation was entered into between the Sanpete County Assessor and the Property Tax Division of the Utah State Tax Commission,

- That Sanpete County will factor all Primary Residential Properties in Region 4 District 1 (Ephraim City) built in 1950 or earlier by 1.26, excluding primary residences with an effective age of 23 years or less, prior to mailing property tax notices to the taxpayers for the 2001 tax year.

Sevier County:

No Corrective Action Order issued.

Summit County:

No Corrective Action Order issued.

Tooele County:

No Corrective Action Order issued.

Uintah County:

No Corrective Action Order issued.

Utah County:

The following stipulation was entered into between Utah County and the Property Tax Division of the Utah State Tax Commission:

- That the Utah County Assessor's Office, through the Utah County Board of Equalization, will factor all vacant land in the Saddlebrook Estate subdivision in Payson City by 0.81 for the 2001 tax year.
- The Utah County Assessor's Office, through the Utah County Board of Equalization, will factor all vacant land in Highland City by 1.18 for the 2001 tax year.

Both factor orders will be implemented by the County Board of Equalization prior to the printing and mailing of the Notice of Valuation and Tax Changes on July 22, 2001.

Wasatch County:

No Corrective Action Order issued.

Washington County:

No Corrective Action Order issued.

Wayne County:

No Corrective Action Order issued.

Weber County:

No Corrective Action Order issued.

STATISTICAL SUMMARIES

Included here are several tables that summarize the broad statistical performance for each county. Table 1 shows every county with statistics for each of the four primary property classifications. Table 2 lists each county's performance for primary residential property. Tables 3, 4 and 5 list each county's performance for commercial, vacant land and secondary residential properties respectively. Where the sample size was insufficient to draw statistically meaningful conclusions we elected to indicate the number of sales in the sample but did not report the statistical measurements. This was done in order to avoid drawing conclusions from statistically questionable samples.

TABLE 1 All Property Classes

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
Beaver	Primary Residential	23	1.05	0.95	0.61	0.99	0.92	26.55	1.15	1.00	0.84	35.63	Yes
	Commercial	n/a											
	Vacant Land	20	1.03	0.95	1.11	0.99	0.80	15.13	1.06	0.97	0.88	19.68	Yes
	Secondary Residential	3	1.09	0.69	1.01	0.64	n/a	21.22	1.31	0.75	0.19	30.05	n/a
Box Elder	Primary Residential	259	1.00	0.98	0.99	0.97	0.96	9.24	0.99	0.98	0.96	12.36	Yes
	Commercial	9	1.00	0.88	1.07	0.93	0.52	14.92	1.02	0.88	0.74	20.93	Yes
	Vacant Land	44	1.04	0.90	1.02	0.94	0.86	15.87	1.00	0.94	0.88	21.48	Yes
	Secondary Residential	n/a											
Cache	Primary Residential	776	1.01	0.96	0.98	0.97	0.96	9.02	0.98	0.97	0.96	12.31	No
	Commercial	11	0.92	0.99	1.09	0.91	0.72	16.39	1.04	0.91	0.78	21.09	Yes
	Vacant Land	158	1.04	0.91	1.00	0.98	0.96	12.45	0.98	0.95	0.93	18.10	No
	Secondary Residential	n/a											
Carbon	Primary Residential	140	1.12	0.92	0.95	0.91	0.88	27.93	1.11	1.03	0.96	43.97	No
	Commercial	5	0.84	0.96	1.28	0.78	n/a	42.85	1.33	0.81	0.28	52.43	Yes
	Vacant Land	23	1.12	0.78	0.94	0.83	1.07	29.62	1.01	0.87	0.73	37.19	Yes
	Secondary Residential	4	1.00	0.71	0.91	0.66	n/a	11.85	0.93	0.71	0.49	19.41	n/a
Daggett	Primary Residential	23	1.04	0.89	1.02	0.87	0.80	16.07	1.00	0.92	0.85	19.28	Yes
	Commercial	1	1.00	0.92	n/a	0.92	n/a	0.00	n/a	0.92	n/a	n/a	n/a
	Vacant Land	15	1.12	0.98	1.38	1.04	0.83	20.61	1.24	1.09	0.94	25.14	Yes
	Secondary Residential	n/a											
Davis	Primary Residential	1812	1.00	0.93	1.04	0.94	0.96	9.86	0.94	0.94	0.93	13.26	No
	Commercial	27	1.01	0.99	1.00	0.99	1.04	16.26	1.10	0.99	0.89	27.82	Yes
	Vacant Land	182	1.03	0.92	0.97	0.94	0.91	13.98	0.98	0.95	0.91	22.46	No
	Secondary Residential	n/a											

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
Duchesne	Primary Residential	60	1.03	0.88	0.94	0.88	0.83	17.83	0.96	0.90	0.85	23.64	Yes
	Commercial	n/a											
	Vacant Land	105	1.22	0.75	0.98	0.91	0.80	34.25	1.02	0.92	0.81	58.44	No
	Secondary Residential	n/a											
Emery	Primary Residential	23	1.02	0.91	1.00	0.88	0.85	13.85	1.00	0.93	0.87	16.89	Yes
	Commercial	2	1.07	0.96	0.95	1.03	n/a	7.82	2.05	1.03	0.01	11.05	n/a
	Vacant Land	6	1.13	1.03	1.79	1.00	n/a	27.69	1.59	1.17	0.75	34.38	Yes
	Secondary Residential	n/a											
Garfield	Primary Residential	5	1.07	0.96	1.64	0.88	n/a	30.64	1.52	1.03	0.54	38.18	Yes
	Commercial	1	1.00	0.94	n/a	0.94	n/a	0.00	n/a	0.94	n/a	n/a	n/a
	Vacant Land	23	1.08	0.94	1.06	0.95	0.87	23.55	1.16	1.02	0.88	32.19	Yes
	Secondary Residential	9	1.03	0.86	1.14	0.91	0.67	13.04	1.00	0.88	0.77	17.21	Yes
Grand	Primary Residential	69	1.01	0.93	0.97	0.94	0.89	11.42	0.98	0.94	0.91	15.97	Yes
	Commercial	4	1.04	0.74	1.09	0.72	n/a	23.51	1.14	0.77	0.40	30.29	n/a
	Vacant Land	30	1.04	0.77	0.89	0.82	0.64	23.08	0.90	0.80	0.70	32.97	Yes
	Secondary Residential	n/a											
Iron	Primary Residential	60	1.02	0.95	1.02	0.96	0.91	12.62	1.01	0.97	0.93	16.38	Yes
	Commercial	9	2.32	0.33	0.17	0.81	0.81	45.79	1.14	0.77	0.39	64.59	Yes
	Vacant Land	239	1.34	0.71	1.25	0.97	0.69	19.10	1.00	0.96	0.92	30.61	No
	Secondary Residential	64	1.01	0.93	0.83	0.94	1.02	11.59	0.99	0.95	0.90	18.44	Yes
Juab	Primary Residential	52	1.03	0.97	0.99	0.96	0.90	18.47	1.10	1.00	0.90	36.24	No
	Commercial	21	0.95	0.85	0.70	0.84	0.81	20.44	0.92	0.80	0.69	31.73	No
	Vacant Land	7	1.03	0.82	1.53	0.85	n/a	35.31	1.23	0.84	0.46	49.08	Yes
	Secondary Residential	n/a											

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
Kane	Primary Residential	23	1.07	0.93	0.87	0.98	1.21	18.65	1.10	1.00	0.90	23.47	Yes
	Commercial	n/a											
	Vacant Land	29	1.07	0.87	1.01	0.94	0.80	13.67	0.99	0.92	0.86	17.62	Yes
	Secondary Residential	4	1.04	0.75	1.01	0.78	n/a	21.11	1.11	0.78	0.46	26.15	n/a
Millard	Primary Residential	28	1.01	0.89	0.97	0.90	0.85	10.61	0.95	0.90	0.84	14.98	Yes
	Commercial	n/a											
	Vacant Land	25	1.19	0.79	1.00	0.92	0.60	41.28	1.20	0.94	0.68	66.68	Yes
	Secondary Residential	n/a											
Morgan	Primary Residential	32	1.01	0.96	1.04	0.96	0.90	11.11	1.01	0.97	0.92	13.71	Yes
	Commercial	1	1.00	0.79	0.79	0.79	n/a	0.00	n/a	0.79	n/a	n/a	n/a
	Vacant Land	25	1.12	0.84	1.00	0.98	0.92	11.67	1.01	0.94	0.87	17.90	Yes
	Secondary Residential	n/a											
Piute	Primary Residential	22	1.02	0.92	1.03	0.99	0.81	12.29	1.01	0.94	0.87	16.87	Yes
	Commercial	n/a											
	Vacant Land	8	1.14	0.91	1.44	1.07	0.64	25.72	1.30	1.04	0.78	29.99	Yes
	Secondary Residential	n/a											
Rich	Primary Residential	9	1.03	0.82	1.15	0.78	0.48	22.40	1.02	0.85	0.68	25.95	Yes
	Commercial	2	1.04	1.04	1.15	1.08	n/a	6.72	2.01	1.08	0.16	9.51	n/a
	Vacant Land	93	1.32	0.74	1.00	0.95	0.88	24.21	1.05	0.98	0.91	34.96	Yes
	Secondary Residential	36	0.99	0.95	1.05	0.98	0.91	13.99	1.01	0.95	0.89	18.52	Yes
Salt Lake	Primary Residential	5974	1.00	1.00	1.00	1.00	1.00	3.96	1.00	1.00	1.00	5.38	No
	Commercial	90	1.03	0.93	1.00	0.98	0.94	8.22	0.97	0.95	0.93	11.06	Yes
	Vacant Land	135	1.00	0.99	1.01	1.00	0.96	9.62	1.01	0.99	0.97	12.65	Yes
	Secondary Residential	n/a											

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
San Juan	Primary Residential	33	1.03	0.88	n/a	0.91	n/a	22.89	1.00	0.91	0.81	28.93	Yes
	Commercial	1	1.00	0.95	n/a	0.95	n/a	0.00	n/a	0.95	n/a	n/a	n/a
	Vacant Land	23	1.12	0.81	0.91	0.96	n/a	21.66	1.06	0.91	0.75	39.57	No
	Secondary Residential	n/a											
Sanpete*	Primary Residential*	56	1.02	0.94	0.98	0.92	0.90	15.55	1.02	0.97	0.91	21.18	Yes
	After factor applied	55	1.03	0.97	1.00	0.95	0.91	14.49	1.04	0.99	0.94	19.82	Yes
	Commercial	8	1.12	0.81	1.60	0.79	0.64	32.74	1.20	0.92	0.63	37.44	Yes
	Vacant Land	86	1.08	0.92	1.00	0.96	0.91	23.85	1.06	1.00	0.93	31.90	Yes
	Secondary Residential	8	1.00	0.82	1.01	0.88	0.58	14.58	0.96	0.82	0.68	19.41	Yes
Sevier	Primary Residential	158	1.01	0.99	1.01	0.99	0.97	11.89	1.02	1.00	0.97	16.26	Yes
	Commercial	4	1.05	0.88	1.49	0.77	n/a	31.89	1.46	0.92	0.39	41.82	n/a
	Vacant Land	79	1.08	0.91	1.00	0.96	0.90	16.99	1.03	0.98	0.94	22.05	Yes
	Secondary Residential	n/a											
Summit	Primary Residential	441	1.04	0.92	0.98	0.97	0.95	10.19	0.97	0.96	0.94	15.09	No
	Commercial	n/a											
	Vacant Land	295	1.08	0.86	0.97	0.95	0.93	14.36	0.95	0.93	0.90	21.64	No
	Secondary Residential	422	1.03	0.95	1.00	0.99	0.98	8.19	0.99	0.98	0.97	11.78	No
Tooele	Primary Residential	200	1.01	0.95	0.97	0.95	0.93	10.34	0.97	0.95	0.93	14.88	No
	Commercial	1	1.00	0.56	n/a	0.56	n/a	0.00	n/a	0.56	n/a	n/a	n/a
	Vacant Land	48	1.15	0.84	1.04	1.00	0.94	15.22	1.03	0.97	0.90	23.13	Yes
	Secondary Residential	n/a											
Uintah	Primary Residential	217	1.00	0.99	1.01	1.00	0.98	9.00	1.00	0.99	0.97	12.49	No
	Commercial	n/a											
	Vacant Land	71	1.02	0.94	1.00	1.00	0.96	11.27	0.99	0.95	0.91	17.29	Yes
	Secondary Residential	n/a											

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
Utah*	Primary Residential	1949	1.01	0.98	0.99	0.99	0.98	11.23	0.99	0.99	0.98	14.97	Nb
	Commercial	30	1.19	0.89	1.10	0.99	0.62	40.97	1.33	1.07	0.80	67.17	Yes
	Vacant Land*	171	1.09	0.87	1.03	0.93	0.90	25.74	0.99	0.94	0.90	34.57	Nb
	After factors applied	171	1.07	0.85	1.02	0.97	0.90	20.49	0.95	0.91	0.86	32.70	Nb
	Secondary Residential	n/a											
Wasatch	Primary Residential	98	1.02	0.93	0.98	0.95	0.93	10.44	0.98	0.95	0.92	15.91	Yes
	Commercial	3	1.00	0.86	0.60	0.97	n/a	13.79	1.41	0.86	0.30	25.97	n/a
	Vacant Land	63	1.09	0.84	0.96	0.92	0.87	15.44	0.96	0.91	0.86	21.80	Yes
	Secondary Residential	16	1.02	0.82	1.05	0.83	0.56	27.01	1.01	0.83	0.66	40.25	Yes
Washington	Primary Residential	835	1.00	97.40	98.13	97.73	97.42	5.36	98.16	97.60	97.04	8.51	Nb
	Commercial	20	1.01	98.63	100.35	100.00	99.82	5.31	105.66	99.65	93.64	12.89	Nb
	Vacant Land	528	1.01	96.98	98.98	98.18	97.37	8.17	98.89	97.91	96.92	11.80	Nb
	Condominium	562	1.01	96.98	98.84	97.99	97.22	6.09	98.70	98.06	97.41	7.96	Yes
Wayne	Primary Residential	15	1.00	0.90	1.04	0.88	0.79	11.98	0.98	0.90	0.82	16.08	Yes
	Commercial	1	1.00	0.89	n/a	0.89	n/a	0.00	n/a	0.89	n/a	n/a	n/a
	Vacant Land	18	1.02	0.89	0.96	0.89	0.82	14.00	1.00	0.91	0.82	20.32	Yes
	Secondary Residential	n/a											
Weber	Primary Residential	1367	1.00	0.99	0.99	0.99	0.98	8.72	1.00	0.99	0.99	12.79	Nb
	Commercial	27	1.09	0.89	0.96	0.90	0.88	17.79	1.08	0.97	0.87	28.28	Yes
	Vacant Land	175	1.08	0.90	0.99	0.95	0.93	16.99	1.03	0.98	0.92	35.23	Nb
	Condominium	176	1.00	0.99	1.01	1.00	0.98	7.49	1.01	1.00	0.98	9.63	Yes

TABLE 2 Primary Residential Property

<i>County</i>	<i>Property Class</i>	<i>No. Sales</i>	<i>PRD</i>	<i>DWM</i>	<i>Upper Limit</i>	<i>Median</i>	<i>Lower Limit</i>	<i>COD</i>	<i>Upper Limit</i>	<i>Mean</i>	<i>Lower Limit</i>	<i>COV</i>	<i>Normal Distrib</i>
Beaver	Primary Residential	23	1.05	0.95	0.61	0.99	0.92	26.55	1.15	1.00	0.84	35.63	Yes
Box Elder	Primary Residential	259	1.00	0.98	0.99	0.97	0.96	9.24	0.99	0.98	0.96	12.36	Yes
Cache	Primary Residential	776	1.01	0.96	0.98	0.97	0.96	9.02	0.98	0.97	0.96	12.31	No
Carbon	Primary Residential	140	1.12	0.92	0.95	0.91	0.88	27.93	1.11	1.03	0.96	43.97	No
Daggett	Primary Residential	23	1.04	0.89	1.02	0.87	0.80	16.07	1.00	0.92	0.85	19.28	Yes
Davis	Primary Residential	1812	1.00	0.93	1.04	0.94	0.96	9.86	0.94	0.94	0.93	13.26	No
Duchesne	Primary Residential	60	1.03	0.88	0.94	0.88	0.83	17.83	0.96	0.90	0.85	23.64	Yes
Emery	Primary Residential	23	1.02	0.91	1.00	0.88	0.85	13.85	1.00	0.93	0.87	16.89	Yes
Garfield	Primary Residential	5	1.07	0.96	1.64	0.88	n/a	30.64	1.52	1.03	0.54	38.18	Yes
Grand	Primary Residential	69	1.01	0.93	0.97	0.94	0.89	11.42	0.98	0.94	0.91	15.97	Yes
Iron	Primary Residential	60	1.02	0.95	1.02	0.96	0.91	12.62	1.01	0.97	0.93	16.38	Yes
Juab	Primary Residential	52	1.03	0.97	0.99	0.96	0.90	18.47	1.10	1.00	0.90	36.24	No
Kane	Primary Residential	23	1.07	0.93	0.87	0.98	1.21	18.65	1.10	1.00	0.90	23.47	Yes
Millard	Primary Residential	28	1.01	0.89	0.97	0.90	0.85	10.61	0.95	0.90	0.84	14.98	Yes
Morgan	Primary Residential	32	1.01	0.96	1.04	0.96	0.90	11.11	1.01	0.97	0.92	13.71	Yes
Piute	Primary Residential	22	1.02	0.92	1.03	0.99	0.81	12.29	1.01	0.94	0.87	16.87	Yes
Rich	Primary Residential	9	1.03	0.82	1.15	0.78	0.48	22.40	1.02	0.85	0.68	25.95	Yes
Salt Lake	Primary Residential	5974	1.00	1.00	1.00	1.00	1.00	3.96	1.00	1.00	1.00	5.38	No
San Juan	Primary Residential	33	1.03	0.88	n/a	0.91	n/a	22.89	1.00	0.91	0.81	28.93	Yes
Sanpete	Primary Residential	56	1.02	0.94	0.98	0.92	0.90	15.55	1.02	0.97	0.91	21.18	Yes
after factor applied		55	1.03	0.97	1.00	0.95	0.91	14.49	1.04	0.99	0.94	19.82	Yes
Sevier	Primary Residential	158	1.01	0.99	1.01	0.99	0.97	11.89	1.02	1.00	0.97	16.26	Yes
Summit	Primary Residential	441	1.04	0.92	0.98	0.97	0.95	10.19	0.97	0.96	0.94	15.09	No
Tooele	Primary Residential	200	1.01	0.95	0.97	0.95	0.93	10.34	0.97	0.95	0.93	14.88	No
Uintah	Primary Residential	217	1.00	0.99	1.01	1.00	0.98	9.00	1.00	0.99	0.97	12.49	No
Utah	Primary Residential	1949	1.01	0.98	0.99	0.99	0.98	11.23	0.99	0.99	0.98	14.97	No
Wasatch	Primary Residential	98	1.02	0.93	0.98	0.95	0.93	10.44	0.98	0.95	0.92	15.91	Yes
Washington	Primary Residential	835	1.00	97.40	98.13	97.73	97.42	5.36	98.16	97.60	97.04	8.51	No
Wayne	Primary Residential	15	1.00	0.90	1.04	0.88	0.79	11.98	0.98	0.90	0.82	16.08	Yes
Weber	Primary Residential	1367	1.00	0.99	0.99	0.99	0.98	8.72	1.00	0.99	0.99	12.79	No

TABLE 3 Commercial Property

<i>County</i>	<i>Property Class</i>	<i>No. Sales</i>	<i>PRD</i>	<i>DWM</i>	<i>Upper Limit</i>	<i>Median</i>	<i>Lower Limit</i>	<i>COD</i>	<i>Upper Limit</i>	<i>Mean</i>	<i>Lower Limit</i>	<i>COV</i>	<i>Normal Distrib</i>
Beaver	Commercial	n/a											
Box Elder	Commercial	9	1.00	0.88	1.07	0.93	0.52	14.92	1.02	0.88	0.74	20.93	Yes
Cache	Commercial	11	0.92	0.99	1.09	0.91	0.72	16.39	1.04	0.91	0.78	21.09	Yes
Carbon	Commercial	5	0.84	0.96	1.28	0.78	n/a	42.85	1.33	0.81	0.28	52.43	Yes
Daggett	Commercial	1	1.00	0.92	n/a	0.92	n/a	0.00	n/a	0.92	n/a	n/a	n/a
Davis	Commercial	27	1.01	0.99	1.00	0.99	1.04	16.26	1.10	0.99	0.89	27.82	Yes
Duchesne	Commercial	n/a											
Emery	Commercial	2	1.07	0.96	0.95	1.03	n/a	7.82	2.05	1.03	0.01	11.05	n/a
Garfield	Commercial	1	1.00	0.94	n/a	0.94	n/a	0.00	n/a	0.94	n/a	n/a	n/a
Grand	Commercial	4	1.04	0.74	1.09	0.72	n/a	23.51	1.14	0.77	0.40	30.29	n/a
Iron	Commercial	9	2.32	0.33	0.17	0.81	0.81	45.79	1.14	0.77	0.39	64.59	Yes
Juab	Commercial	21	0.95	0.85	0.70	0.84	0.81	20.44	0.92	0.80	0.69	31.73	No
Kane	Commercial	n/a											
Millard	Commercial	n/a											
Morgan	Commercial	1	1.00	0.79	0.79	0.79	n/a	0.00	n/a	0.79	n/a	n/a	n/a
Piute	Commercial	n/a											
Rich	Commercial	2	1.04	1.04	1.15	1.08	n/a	6.72	2.01	1.08	0.16	9.51	n/a
Salt Lake	Commercial	90	1.03	0.93	1.00	0.98	0.94	8.22	0.97	0.95	0.93	11.06	Yes
San Juan	Commercial	1	1.00	0.95	n/a	0.95	n/a	0.00	n/a	0.95	n/a	n/a	n/a
Sanpete	Commercial	8	1.12	0.81	1.60	0.79	0.64	32.74	1.20	0.92	0.63	37.44	Yes
Sevier	Commercial	4	1.05	0.88	1.49	0.77	n/a	31.89	1.46	0.92	0.39	41.82	n/a
Summit	Commercial	n/a											
Tooele	Commercial	1	1.00	0.56	n/a	0.56	n/a	0.00	n/a	0.56	n/a	n/a	n/a
Uintah	Commercial	n/a											
Utah	Commercial	30	1.19	0.89	1.10	0.99	0.62	40.97	1.33	1.07	0.80	67.17	Yes
Wasatch	Commercial	3	1.00	0.86	0.60	0.97	n/a	13.79	1.41	0.86	0.30	25.97	n/a
Washington	Commercial	20	1.01	98.63	100.35	100.00	99.82	5.31	105.66	99.65	93.64	12.89	No
Wayne	Commercial	1	1.00	0.89	n/a	0.89	n/a	0.00	n/a	0.89	n/a	n/a	n/a
Weber	Commercial	27	1.09	0.89	0.96	0.90	0.88	17.79	1.08	0.97	0.87	28.28	Yes

TABLE 4 Vacant Land

County	Property Class	No. Sales	PRD	DWM	Upper Limit	Median	Lower Limit	COD	Upper Limit	Mean	Lower Limit	COV	Normal Distrib
Beaver	Vacant Land	20	1.03	0.95	1.11	0.99	0.80	15.13	1.06	0.97	0.88	19.68	Yes
Box Elder	Vacant Land	44	1.04	0.90	1.02	0.94	0.86	15.87	1.00	0.94	0.88	21.48	Yes
Cache	Vacant Land	158	1.04	0.91	1.00	0.98	0.96	12.45	0.98	0.95	0.93	18.10	No
Carbon	Vacant Land	23	1.12	0.78	0.94	0.83	1.07	29.62	1.01	0.87	0.73	37.19	Yes
Daggett	Vacant Land	15	1.12	0.98	1.38	1.04	0.83	20.61	1.24	1.09	0.94	25.14	Yes
Davis	Vacant Land	182	1.03	0.92	0.97	0.94	0.91	13.98	0.98	0.95	0.91	22.46	No
Duchesne	Vacant Land	105	1.22	0.75	0.98	0.91	0.80	34.25	1.02	0.92	0.81	58.44	No
Emery	Vacant Land	6	1.13	1.03	1.79	1.00	n/a	27.69	1.59	1.17	0.75	34.38	Yes
Garfield	Vacant Land	23	1.08	0.94	1.06	0.95	0.87	23.55	1.16	1.02	0.88	32.19	Yes
Grand	Vacant Land	30	1.04	0.77	0.89	0.82	0.64	23.08	0.90	0.80	0.70	32.97	Yes
Iron	Vacant Land	239	1.34	0.71	1.25	0.97	0.69	19.10	1.00	0.96	0.92	30.61	No
Juab	Vacant Land	7	1.03	0.82	1.53	0.85	n/a	35.31	1.23	0.84	0.46	49.08	Yes
Kane	Vacant Land	29	1.07	0.87	1.01	0.94	0.80	13.67	0.99	0.92	0.86	17.62	Yes
Millard	Vacant Land	25	1.19	0.79	1.00	0.92	0.60	41.28	1.20	0.94	0.68	66.68	Yes
Morgan	Vacant Land	25	1.12	0.84	1.00	0.98	0.92	11.67	1.01	0.94	0.87	17.90	Yes
Piute	Vacant Land	8	1.14	0.91	1.44	1.07	0.64	25.72	1.30	1.04	0.78	29.99	Yes
Rich	Vacant Land	93	1.32	0.74	1.00	0.95	0.88	24.21	1.05	0.98	0.91	34.96	Yes
Salt Lake	Vacant Land	135	1.00	0.99	1.01	1.00	0.96	9.62	1.01	0.99	0.97	12.65	Yes
San Juan	Vacant Land	23	1.12	0.81	0.91	0.96	n/a	21.66	1.06	0.91	0.75	39.57	No
Sanpete	Vacant Land	86	1.08	0.92	1.00	0.96	0.91	23.85	1.06	1.00	0.93	31.90	Yes
Sevier	Vacant Land	79	1.08	0.91	1.00	0.96	0.90	16.99	1.03	0.98	0.94	22.05	Yes
Summit	Vacant Land	295	1.08	0.86	0.97	0.95	0.93	14.36	0.95	0.93	0.90	21.64	No
Tooele	Vacant Land	48	1.15	0.84	1.04	1.00	0.94	15.22	1.03	0.97	0.90	23.13	Yes
Uintah	Vacant Land	71	1.02	0.94	1.00	1.00	0.96	11.27	0.99	0.95	0.91	17.29	Yes
Utah	Vacant Land	171	1.09	0.87	1.03	0.93	0.90	25.74	0.99	0.94	0.90	34.57	No
	after factors applied	171	1.07	0.85	1.02	0.97	0.90	20.49	0.95	0.91	0.86	32.70	No
Wasatch	Vacant Land	63	1.09	0.84	0.96	0.92	0.87	15.44	0.96	0.91	0.86	32.70	Yes
Washington	Vacant Land	528	1.01	96.98	98.98	98.18	97.37	8.17	98.89	97.91	96.92	11.80	No
Wayne	Vacant Land	18	1.02	0.89	0.96	0.89	0.82	14.00	1.00	0.91	0.82	20.32	Yes
Weber	Vacant Land	175	1.08	0.90	0.99	0.95	0.93	16.99	1.03	0.98	0.92	35.23	No

TABLE 5 Secondary Residential Property

<i>County</i>	<i>Property Class</i>	<i>No. Sales</i>	<i>PRD</i>	<i>DWM</i>	<i>Upper Limit</i>	<i>Median</i>	<i>Lower Limit</i>	<i>COD</i>	<i>Upper Limit</i>	<i>Mean</i>	<i>Lower Limit</i>	<i>COV</i>	<i>Normal Distrib</i>
Beaver	Secondary Residential	3	1.09	0.69	1.01	0.64	n/a	21.22	1.31	0.75	0.19	30.05	n/a
Box Elder	Secondary Residential	n/a											
Cache	Secondary Residential	n/a											
Carbon	Secondary Residential	4	1.00	0.71	0.91	0.66	n/a	11.85	0.93	0.71	0.49	19.41	n/a
Daggett	Secondary Residential	n/a											
Davis	Secondary Residential	n/a											
Duchesne	Secondary Residential	n/a											
Emery	Secondary Residential	n/a											
Garfield	Secondary Residential	9	1.03	0.86	1.14	0.91	0.67	13.04	1.00	0.88	0.77	17.21	Yes
Grand	Secondary Residential	n/a											
Iron	Secondary Residential	64	1.01	0.93	0.83	0.94	1.02	11.59	0.99	0.95	0.90	18.44	Yes
Juab	Secondary Residential	n/a											
Kane	Secondary Residential	4	1.04	0.75	1.01	0.78	n/a	21.11	1.11	0.78	0.46	26.15	n/a
Millard	Secondary Residential	n/a											
Morgan	Secondary Residential	n/a											
Piute	Secondary Residential	n/a											
Rich	Secondary Residential	36	0.99	0.95	1.05	0.98	0.91	13.99	1.01	0.95	0.89	18.52	Yes
Salt Lake	Secondary Residential	n/a											
San Juan	Secondary Residential	n/a											
Sanpete	Secondary Residential	8	1.00	0.82	1.01	0.88	0.58	14.58	0.96	0.82	0.68	19.41	Yes
Sevier	Secondary Residential	n/a											
Summit	Secondary Residential	422	1.03	0.95	1.00	0.99	0.98	8.19	0.99	0.98	0.97	11.78	No
Tooele	Secondary Residential	n/a											
Uintah	Secondary Residential	n/a											
Utah	Secondary Residential	n/a											
Wasatch	Secondary Residential	16	1.02	0.82	1.05	0.83	0.56	27.01	1.01	0.83	0.66	40.25	Yes
Washington	Condominium	562	1.01	96.98	98.84	97.99	97.22	6.09	98.70	98.06	97.41	7.96	Yes
Wayne	Secondary Residential	n/a											
Weber	Condominium	176	1.00	0.99	1.01	1.00	0.98	7.49	1.01	1.00	0.98	9.63	Yes

APPENDICES

- I. First Solicitation Letter
- II. Second Solicitation Letter Questionnaire
- III. Real Property Transfer Survey
- IV. Tax Commission Rule R884-24P-27, Standards for Assessment Level Performance
- V. Tax Commission Rule R861-1A-11, Procedures for Appeal of Factor Orders
- VI. Statutory Basis for Study – Section 59-2-704, UCA 1953 as amended
- VII. Statutory Basis for Standards – Section 59-2-704.5, UCA 1953, as amended
- VIII. Statutory Basis for Mandatory Cyclical Appraisals Section 59-2-303.1, UCA, as amended

September 20, 2001

Dear Property Owner:

The laws of the State of Utah require this office to conduct a study each year to determine the relationship between assessed value and the current market value of all classes of real estate. Section 59-1-210(14) of the Utah Code empowers the Tax Commission to request information needed to ensure fair property taxation.

Public records indicate that you **bought (or sold)** real property during our study period. Please answer questions one (1) through eleven (11) concerning the transfer of the described property and return the 'Real Property Transfer Survey' form by **(October 5, 2001)**. **A prompt response will insure that you do not receive a second mailing of the questionnaire.**

If you have not been involved in a transaction which included exchange of monies, but **recently refinanced, corrected a defective title, created a family trust or added/deleted names on a deed**, it will only be necessary to complete question #7 of the survey. This question pertains to the reasons for the sale. Item **(G) Transfer of Convenience**, would be the applicable response for these types of transfers.

Postage paid, business reply envelope is enclosed for your convenience. Please include the reference number from the questionnaire on any correspondence. The information you supply will help ensure that property taxes are fair and equitable; and that each property pays its fair share of the cost of local government. If you need assistance, please call 297-3647 during normal business hours. If you are calling from outside of the Salt Lake area, you may call 1-800-662-4335, enter 1, 73647 (ext).

Sincerely,

Valuation Appraiser
Sales Ratio Studies
Property Tax Division

September 20, 2001

SECOND REQUEST

Dear Property Owner:

This office recently sent you a Real Property Transfer Survey regarding a real estate transaction to which you were a party. Our records indicate that **we have not yet received the completed survey.**

Utah law requires this office to conduct the study annually to determine the relationship between taxable value and the current market value of all classes of real estate. Utah Code Ann. Section 59-1-210(14) (Supp. 1987) empowers the Tax Commission to request information needed to ensure fair property taxation. The information you supply will help ensure that property taxes are fair and equitable.

Enclosed is a copy of the survey form recently sent to you. If you have not been involved in a transaction which included exchange of monies, **but recently refinanced, corrected a defective title, created a family trust or added/deleted names on a deed,** it will only be necessary to complete question #7 of the survey. This question pertains to the reasons for the sale. Item ***(G) Transfer of Convenience***, would be the applicable response for these types of transfers.

Please complete and return it by **(October 5, 2001)**, in the postage paid business reply envelope provided. If you have already returned the first survey, **please accept our thanks for your cooperation and discard this second request.** If you need assistance, please call 297-3647 during normal business hours. If you are calling from outside of the Salt Lake area, you may call 1-800-662-4335, enter 1, 73647 (ext).

Sincerely,

Valuation Appraiser
Sales Ratio Studies
Property Tax Division



REAL PROPERTY TRANSFER SURVEY

Utah State Tax Commission TC-221

RETURN USTC, PROPERTY TAX DIVISION
TO 210 NORTH 1950 WEST
SALT LAKE CITY, UT. 84134

-PT-- GRANTEE: AA 12345679 -----

----- Please return by: -----
>>>> June 25, 1995
REFERENCE NUMBER: AA 1234 5679
SERIAL NUMBER:
SERIES: 1 COUNTY:
ACCOUNT: 0 SEQ.: 0
----- GRANTOR: (Seller) -----
----- LEGAL: (May Not All Print) --

0-

1. Address/location of property (approximate if necessary)

(street) (city or area) (county)

2. In this sale, what was the:

- A. Date of sale
SALE PRICE OF: (month/year)
B. Land/buildings \$
C. Personal Property (if any) \$
(i.e. machinery, inventory, water rights, etc.)
Specify Any Personal Property:
D. Total Sale Price (B + C) \$
DOWN PAYMENT: \$
E. Down Payment Cash \$
F. Down Payment Other (if any) \$
(i.e. jewelry, coins, sweat equity, etc.)
Specify Any Down Payment Other:

3. Specify any trade of real estate in this transaction.

- A. Type of property
B. Agreed upon value (if any) \$

4. Circle the letter of the category below that best describes property included in the sale price.

- A. Vacant land, residential lot, or recreational lot
B. Vacant commercial land
C. Residence
D. Mobile home and lot
E. Apartment building
F. Commercial land and building(s)
G. Agricultural land only
H. Agricultural land and building(s)
I. Cabin or summer home (seasonal use only)
J. Other:

5. If use of the property has changed since time of sale, enter new use (use letter from list in #4).

6. Explain any reason this sale may not have been a "fair market value" transaction.

7. Circle the letter(s) of the following that apply to this sale.

- A. This was a forced transaction because of foreclosure, divorce, court order, condemnation, probate, etc.
B. Sale was between relatives, affiliated companies or officers.
C. Property was sold to or purchased from any church, fraternal, educational, or governmental organization.
D. Real estate in more than one county was involved in this sale.
E. Partial interest only was purchased or sold.
F. Possession by buyer was delayed for more than one year from date of deed.
G. A transfer of convenience (i.e. refinance, correct defective title, create family trust, add/delete names on deed, etc.)
H. None of the above.

8. Circle the letter(s) indicating the types of financing used in this sale (circle all that apply).

- A. Conventional F. Farmer's Home Loan
B. Graduated payment G. Utah Housing Authority
C. Adjustable rate mortgage H. Assumption of mortgage
D. FHA I. Seller financing
E. VA J. Cash

9. Please give financing details if known.

Amount Financed \$ Interest Rate %
Length of Loan (yrs.) Explain if Necessary

10. Was sale handled through a real estate agent or broker?
If yes, name of agent or broker

11. In the event we need to contact you about this survey, please list your name, phone number, and best time to be reached.

print name phone best time

Thank you for taking a moment to answer these questions. Your help in obtaining thorough & accurate sales information is appreciated.

These answers are, to the best of my knowledge, true and correct.

Signature Date

TAX COMMISSION RULE R884-24P-27

R884-24P-27. Standards for Assessment Level and Uniformity of Performance Pursuant to Utah Code Ann. Sections 59-2-704 and 59-2-704.5.

A. Definitions.

1. "Coefficient of dispersion (COD)" means the average deviation of a group of assessment ratios taken around the median and expressed as a percent of that measure.
2. "Coefficient of variation (COV)" means the standard deviation expressed as a percentage of the mean.
3. "Division" means the Property Tax Division of the State Tax Commission.
4. "Nonparametric" means data samples that are not normally distributed.
5. "Parametric" means data samples that are normally distributed.
6. "Urban counties" means counties classified as first or second class counties pursuant to Section 17-16-13.

B. The Tax Commission adopts the following standards of assessment performance.

1. For assessment level in each property class, subclass, and geographical area in each county, the measure of central tendency shall meet one of the following measures.
 - a) The measure of central tendency shall be within 10 percent of the legal level of assessment.
 - b) The 95 percent confidence interval of the measure of central tendency shall contain the legal level of assessment.
2. For uniformity of the property being appraised under the cyclical appraisal plan for the current year, the measure of dispersion shall be within the following limits.
 - a) In urban counties:
 - (1) a COD of 15 percent or less for primary residential and commercial property, and 20 percent or less for vacant land and secondary residential property; and
 - (2) a COV of 19 percent or less for primary residential and commercial property, and 25 percent or less for vacant land and secondary residential property.
 - b) In rural counties:
 - (1) a COD of 20 percent or less for primary residential and commercial property, and 25 percent or less for vacant land and secondary residential property; and
 - (2) a COV of 25 percent or less for primary residential and commercial property, and 31 percent or less for vacant land and secondary residential property.
3. Statistical measures.
 - a) The measure of central tendency shall be the mean for parametric samples and the median for nonparametric samples.
 - b) The measure of dispersion shall be the COV for parametric samples and the COD for nonparametric samples.
 - c) To achieve statistical accuracy in determining assessment level under B.1. and uniformity under B.2. for any property class, subclass, or geographical area, the minimum sample size shall consist of 10 or more ratios.

C. Each year the Division shall conduct and publish an assessment-to-sale ratio study to determine if each county complies with the standards in B.

1. To meet the minimum sample size, the study period may be extended.
2. A smaller sample size may be used if:
 - a) that sample size is at least 10 percent of the class or subclass population; or
 - b) both the Division and the county agree that the sample may produce statistics that imply corrective action appropriate to the class or subclass of property.

3. If the Division, after consultation with the counties, determines that the sample size does not produce reliable statistical data, an alternate performance evaluation may be conducted, which may result in corrective action. The alternate performance evaluation shall include review and analysis of the following:

- a) the county's procedures for collection and use of market data, including sales, income, rental, expense, vacancy rates, and capitalization rates;
- b) the county-wide land, residential, and commercial valuation guidelines and their associated procedures for maintaining current market values;
- c) the accuracy and uniformity of the county's individual property data through a field audit of randomly selected properties; and
- d) the county's level of personnel training, ratio of appraisers to parcels, level of funding, and other workload and resource considerations.

4. All input to the sample used to measure performance shall be completed by March 31 of each study year.

5. The Division shall conduct a preliminary annual assessment-to-sale ratio study by April 30 of the study year, allowing counties to apply adjustments to their tax roll prior to the May 22 deadline.

6. The Division shall complete the final study immediately following the closing of the tax roll on May 22.

D. The Division shall order corrective action if the results of the final study do not meet the standards set forth in B.

1. Assessment level adjustments, or factor orders, shall be calculated by dividing the legal level of assessment by one of the following:

- a) the measure of central tendency, if the uniformity of the ratios meets the standards outlined in B.2.; or
- b) the 95 percent confidence interval limit nearest the legal level of assessment, if the uniformity of the ratios does not meet the standards outlined in B.2.

2. Uniformity adjustments, or reappraisal orders, shall only apply to the property being appraised under the cyclical appraisal plan for the current year. A reappraisal order shall be issued if the property fails to meet the standards outlined in B.2. Prior to implementation of reappraisal orders, counties shall submit a preliminary report to the Division that includes the following:

- a) an evaluation of why the standards of uniformity outlined in B.2. were not met; and
- b) a plan for completion of the reappraisal that is approved by the Division.

3. A corrective action order may contain language requiring a county to create, modify, or follow its cyclical appraisal plan.

4. All corrective action orders shall be issued by June 10 of the study year.

E. The Tax Commission adopts the following procedures to insure compliance and facilitate implementation of ordered corrective action:

1. Prior to the filing of an appeal, the Division shall retain authority to correct errors and, with agreement of the affected county, issue amended orders or stipulate with the affected county to any appropriate alternative action without Tax Commission approval. Any stipulation by the Division subsequent to an appeal is subject to Tax Commission approval.

2. A county receiving a corrective action order resulting from this rule may file an appeal with the Tax Commission pursuant to Tax Commission rule R861-1A-11.

3. A corrective action order will become the final Tax Commission order if the county does not appeal in a timely manner, or does not prevail in the appeals process.

4. The Division may assist local jurisdictions to ensure implementation of any corrective action orders by the following deadlines.

- a) Factor orders shall be implemented in the current study year prior to the mailing of valuation notices.

b) Other corrective action, including reappraisal orders, shall be implemented prior to May 22 of the year following the study year. The preliminary report referred to in D.2. shall be completed by November 30 of the current study year.

5. The Division shall complete audits to determine compliance with corrective action orders as soon after the deadlines set forth in E.4. as practical. The Division shall review the results of the compliance audit with the county and make any necessary adjustments to the compliance audit within 15 days of initiating the audit. These adjustments shall be limited to the analysis performed during the compliance audit and may not include review of the data used to arrive at the underlying factor order. After any adjustments, the compliance audit will then be given to the Tax Commission for any necessary action.

6. The county shall be informed of any adjustment required as a result of the compliance audit.

Effective: 12/19/00

TAX COMMISSION RULE R861-1A-11

R861-1A-11. Appeal of Corrective Action Order Pursuant to Utah Code Ann. Section 59-2-704.

A. Appeal of Corrective Action Order. Any county appealing a corrective action order issued pursuant to Section 59-2-704 shall, within 10 days of the mailing of the order, request in writing a hearing before the Commission. The Commission shall immediately set the time and place of the hearing, which shall be held no later than June 30 of the tax year to which the corrective action order applies.

B. Hearings. Hearings on corrective action order appeals shall be conducted as formal hearings and shall be governed by the procedures contained in these rules. If the parties are able to stipulate to a modification of the corrective action order, and it is evident that there is a reasonable basis for modifying the corrective action order, an amended corrective action order may be executed by the Commission. One or more commissioners may preside at a hearing under this rule with the same force and effect as if a quorum of the Commission were present. However, a decision must be made and an order signed by a quorum of the Commission.

C. Decisions and Orders. The Commission shall render its decision and order no later than July 10 of the tax year to which the corrective action order applies. Upon reaching a decision, the Commission shall immediately notify the clerk of the county board of equalization and the county assessor of that decision.

D. Sales Information. Access to Commission property sales information shall be available by written agreement with the Commission to any clerk of the county board of equalization and county assessor appealing under this rule. All other reasonable and necessary information shall be available upon request, according to Commission guidelines.

E. Conflict with Other Rules. This rule supersedes all other rules that may otherwise govern these proceedings before the Commission.

Effective: 12/19/00

STATUTORY BASIS FOR
ASSESSMENT/SALES RATIO STUDIES

SECTION 59-2-704

- (1) Each year, to assist in the evaluation of appraisal performance of taxable real property, the commission shall conduct and publish studies to determine the relationship between the market value shown on the assessment roll and the market value of real property in each county. The studies shall include measurements of uniformity within counties and use statistical methods established by the commission. County assessors may provide sales information to the commission for purposes of the studies. The commission shall make the sales and appraisal information related to the studies available to the assessors upon request.
- (2) The commission shall each year, order each county to adjust or factor its assessment rates using the most current studies so that the assessment rate in each county is in accordance with that prescribed in Section 59-2-103. The adjustment or factoring may include an entire county, geographical areas within a county, and separate classes of properties. Where significant value deviations occur, the commission shall also order corrective action.
- (3) If the commission determines that sales data in any county is insufficient to perform the studies required under Subsection (1), the commission may conduct appraisals of property within that county.
- (4) If a county fails to implement factoring or corrective action ordered under Subsection (2), the commission shall:
 - (a) implement the factoring or corrective action; and
 - (b) charge 100% of the reasonable implementation costs to that county.
- (5) If a county disputes the factoring or corrective action ordered under Subsection (2), the matter may be mediated by the Multicounty Appraisal Trust.
- (6) The commission may change the factor for any county which, after a hearing before the commission, establishes that the factor should properly be set at a different level for that county. The commission shall establish the method, procedure, and timetable for the hearings authorized under this section, including access to information to ensure a fair hearing. The commission may establish rules to implement this section.

STATUTORY BASIS FOR
STANDARDS OF ASSESSMENT LEVEL/UNIFORMITY

SECTION 59-2-704.5

- (1) In accordance with Title 63, Chapter 46a, Utah Administrative Rulemaking Act, and after receiving the advice of the Utah Assessors Association, the commission shall by rule adopt standards for determining acceptable assessment levels and valuation deviations within each county. The standards shall be used for determining whether factoring or corrective action is required under Subsection 59-2-704(2).
- (2) As part of its review of the standards for determining acceptable assessment levels and valuation deviations within each county, the commission shall consider any relevant standards promulgated by the International Association of Assessing Officers.
- (3) By October 1, 1998, and every five years thereafter, the Revenue and Taxation Interim Committee shall review the commission's standards and determine whether the standards should be modified.

STATUTORY BASIS FOR
MANDATORY CYCLICAL APPRAISALS

SECTION 59-2-303.1

(1) Beginning January 1, 1994, each county assessor shall annually update property values of property as provided in Section 59-2-301 based on a systematic review of current market data. In addition, the county assessor shall complete a detailed review of property characteristics for each property at least once every five years.

(a) The commission shall take corrective action if the commission determines that:

(i) a county assessor has not satisfactorily followed the current mass appraisal standards, as provided by law;

(ii) the sales-assessment ratio, coefficients of dispersion, or other statistical measures of appraisal performance related to the studies required by Section 59-2-704 are not within the standards provided by law; or

(iii) the county assessor has failed to comply with the requirements of Subsection (1).

(b) For purposes of this section, "corrective action" includes:

(i) factoring pursuant to Section 59-2-704;

(ii) notifying the state auditor that the county failed to comply with the requirements of this section; or

(iii) filing a petition for a court order requiring a county to take action.

(2) (a) By July 1, 1993, each county assessor shall prepare a five-year plan to comply with the requirements of Subsection (1).

(b) The plan shall be available in the county assessor's office for review by the public upon request.

(c) The plan shall be annually reviewed and revised as necessary.

Of particular importance in any sales ratio study is a clear understanding of the definitions used in the analysis. This is especially true for Utah because of the unique nature of some of its property tax laws.

Adjusted sale price: The sale price that results from adjustments made to the stated sale price to account for the effects of time, personal property, financing, or the like.

Appraisal: An opinion by a qualified appraiser of the estimated value of real property. Elements of the analysis include: preliminary survey and planning; collection of data; application of cost, comparative sales, or income approaches; correlation and reconciliation of indicated values; and the final value estimate.

Arms-length Transaction: A real estate sale between two unrelated, knowledgeable parties, neither of whom is under abnormal pressure from the other and each is attempting to maximize his gains.

Assessment Level: The level of assessment after application of any fractional assessment ratio, partial exemption, or other adjustment.

Assessment Uniformity: The degree to which properties within a specific class or county are assessed at equal percentages of market value. Common measures of uniformity are the coefficient of dispersion and the coefficient of variation.

Coefficient of Dispersion (COD): The average absolute deviation of all assessment/sales ratios from the chosen measure of central tendency expressed as a percentage of the measure of central tendency. The lower the coefficient of dispersion, the more uniform are the assessments.

Coefficient of Variation (COV): The standard deviation expressed as a percentage of the mean.

Confidence Interval: An estimated range of values, which is expected to include the true population parameter (mean, median) at a specified confidence level. It can be thought of as a measure of precision for the sample statistic or point estimate.

Confidence Level: The required degree of confidence in a statistical test or confidence interval, commonly 90, 95, or 99 percent. A 95 percent confidence interval would mean, for example, that one can be 95 percent confident that the population parameter (mean or median ratio) falls in the indicated range.

Date of Sale: The date on which the real property sale was agreed to. The date of recording may be used as a proxy for the date of sale. (See Transaction Date)

Deed Recordation: The process of registering a real property sale with the county recorder's office.

Dispersion: The degree to which data are distributed around a measure of central tendency. Measures of dispersion include the range, average deviation, standard deviation, coefficient of dispersion, and coefficient of variation.

Dollar-Weighted Mean (DWM): The measure of central tendency weighted by the dollar value of each entry. It is calculated by dividing the sum of all the adjusted assessments by the sum of all the adjusted sales prices.

Factoring: The process by which all assessments or a group of assessments are adjusted to meet the legal level of assessment. Factoring is considered appropriate when coefficients of dispersion are relatively low. The correct factor is calculated by dividing the target level of assessment by the current level of assessment.

Intangible Property: The non-physical evidence of ownership and of property rights such as patent rights, copyrights, notes, mortgages, deeds of trust, and stock certificates.

Market Value: The most probable sale price of a property in terms of money in a competitive and open market, assuming that the buyer and seller are acting prudently and knowledgeably, allowing sufficient time for the sale, and assuming that the transaction is not affected by undue pressures.

Mean: A measure of central tendency. The result of adding all the values of a variable and dividing by the number of values.

Measures of Central Tendency: Those statistics that measure the tendency of ratio data to center about a typical or central value. Measures of central tendency include the median, the mean, the mode, and the dollar-weighted mean.

Measures of Variability: Those statistics that measure the amount of dispersion, variability, or dissimilarities of ratio data. Some measure absolute differences, while others measure relative variability. Included as measures of variability are the range, average absolute deviation, and the standard deviation. Measures of relative variability include the coefficient of dispersion and the coefficient of variation.

Median: A measure of central tendency. The value of the middle item in an uneven number of items arranged or arrayed according to size; the arithmetic average of the two central items in an even number of items similarly arranged.

Mode: The value in a set of numbers that occurs most often.

Nonparametric Statistic: A statistic whose interpretation of reliability does not depend on the distribution of the underlying data.

Normal Distribution: A theoretical distribution often approximated in real world situations. It is symmetrical and bell-shaped; 68 percent of the observations occur within one standard deviation of the mean and 95 percent within two standard deviations of the mean.

Observation: One recording or occurrence of the value of a variable, for example, one sale ratio among a sample of sales ratios.

Parameter: Numerical descriptive measure of the population, for example, the arithmetic mean or standard deviation. Parameters are generally unknown and estimated from statistics calculated from a sample of the population.

Parametric Statistic: A statistic whose interpretation depends on the distribution of the data. Parametric statistics are most reliable when the data sample is normally distributed.

Population: The total number of properties in an assessment jurisdiction of a property class of interest.

Price-Related Differential: The mean divided by the weighted mean. The statistic has a slight bias upward. Price-related differentials above 1.03 tend to indicate assessment regressivity; price-related differentials below 0.98 tend to indicate assessment progressivity.

Progressivity: The assessment of higher-priced properties at a higher percentage of market value than lower-priced properties.

Property Class: An assigned category of property used in the analysis of sales in the assessment/sales ratio study. Utah uses four principal categories: 1) primary residential, 2) commercial, 3) vacant land, and 4) secondary residential.

Quit Claim Deed: This document transfers to the buyer any interest the seller may have, without warranty to clear title.

Random Sample: A sample chosen such that each unit in the population has an equal chance of being selected.

Range: (1) The maximum value of a sample minus the minimum value. (2) The difference between the maximum and minimum values that a variable may assume.

Ratio Study: A study of the relationship between appraised or assessed values and market values. Indicators of market values may be either sales (sales ratio study) or independent “expert” appraisals (appraisal ratio study). Of common interest in ratio studies are the level and uniformity of the appraisals or assessments.

Reappraisal: A detailed review of property characteristics for each property at least once every five years.

Real Estate: The physical parcel of land and improvements to the land.

Real Property: The sum of tangible and intangible property rights in land and improvements; the rights, interests, and benefits connected with real estate.

Regressivity: The assessment of lower-priced properties at a higher percentage of market value than higher-priced properties.

Sale Price: The price for which a property was sold.

Sale Ratio: The ratio of an appraised (or assessed) value to the sale price or adjusted sale price of a property.

Sales chasing: Sales chasing is the practice of using the sale of a property to trigger a reappraisal of that property at or near the selling price. Sales chasing causes invalid uniformity results in a sales ratio study and causes invalid appraisal level results unless similar unsold parcels are reappraised at a method that produces an appraisal level for unsold properties equal to the appraisal level of sold properties.

Sample: A set of observations selected from a population. If the sample was randomly selected, basic concepts of probability may be applied.

Standard Deviation: The statistic calculated from a set of numbers by subtracting the mean from each value and squaring the remainders, adding together these squares, dividing by the size of the sample less one, and taking the square root of the result. When the data are normally distributed, one can calculate the percentage of observations within any number of standard deviations of the mean from normal probability tables. When the data are not normally distributed, the standard deviation is less meaningful and should be used with caution.

Statistical Estimator: This estimates some characteristic of the sample drawn from the population for study. Parameters are used to estimate some characteristic about the population in general.

Statistics: Numerical descriptions calculated from a sample to estimate measures (parameters) for the population. Statistics include the mean, median, and the coefficient of dispersion.

Stratify: To divide, for purposes of analysis, a sample of observations into two or more subsets according to some criterion or set of criteria.

Subset: A group of properties within a sample, smaller than the sample, usually although not necessarily defined by stratification rather than by sampling.

Transaction Date: The date the transaction occurred.

Trending: Adjusting the values of a variable for the effects of time. Usually used to refer to adjustments of assessments or sales prices intended to reflect the effects of inflation and deflation.

Variance: A measure of dispersion equal to the Standard Deviation squared. It is calculated by summing the squared deviations about the mean and dividing that sum by the number of ratios in the sample less one.

Warranty Deed: A document from seller to buyer transferring title free and clear of all encumbrances except those specifically spelled out or of public record.

Weighted mean ratio: Sum of the appraised values divided by the sum of the sales prices, which weights each ratio in proportion to the sale price.