

CLEAR CREEK COUNTY



2017

CLEAR CREEK COUNTY  
PROPERTY ASSESSMENT  
STUDY

---



WILDROSE  
APPRAISAL, INCORPORATED  
Audit Division



September 15, 2017

Mr. Mike Mauer  
Director of Research  
Colorado Legislative Council  
Room 029, State Capitol Building  
Denver, Colorado 80203

**RE: Final Report for the 2017 Colorado Property Assessment Study**

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2017 Colorado Property Assessment Study.

These reports are the result of two analyses: A procedural audit and a statistical audit.

The procedural audit examines all classes of property. It specifically looks at how the assessor develops economic areas, confirms and qualifies sales, develops time adjustments and performs periodic physical property inspections. The audit reviews the procedures for determining subdivision absorption and subdivision discounting. Valuation methodology is examined for residential properties and commercial properties. Procedures are reviewed for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests, and non-producing patented mining claims.

Statistical audits are performed on vacant land, residential properties, commercial/industrial properties and agricultural land. A statistical analysis is performed for personal property compliance on the eleven largest counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld. The remaining counties receive a personal property procedural study.

Wildrose Appraisal Inc. – Audit Division appreciates the opportunity to be of service to the State of Colorado. Please contact us with any questions or concerns.

A handwritten signature in black ink that reads "Harry J. Fuller". The signature is written in a cursive style.

Harry J. Fuller  
Project Manager  
Wildrose Appraisal Inc. – Audit Division

## TABLE OF CONTENTS

Introduction .....	3
Regional/Historical Sketch of Clear Creek County .....	4
Ratio Analysis.....	6
Time Trending Verification .....	8
Sold/Unsold Analysis .....	9
Agricultural Land Study .....	11
<i>Agricultural Land</i> .....	11
<i>Agricultural Outbuildings</i> .....	12
<i>Agricultural Land Under Improvements</i> .....	13
Sales Verification.....	14
Economic Area Review and Evaluation .....	16
Natural Resources .....	17
<i>Earth and Stone Products</i> .....	17
<i>Producing Mines</i> .....	17
Vacant Land.....	18
Possessory Interest Properties .....	19
Personal Property Audit .....	20
Wildrose Auditor Staff.....	22
Appendices.....	23

# INTRODUCTION

---



## Colorado

The State Board of Equalization (SBOE) reviews assessments for conformance to the Constitution. The SBOE will order revaluations for counties whose valuations do not reflect the proper valuation period level of value.

The statutory basis for the audit is found in C.R.S. 39-1-104 (16)(a)(b) and (c).

The legislative council sets forth two criteria that are the focus of the audit group:

To determine whether each county assessor is applying correctly the constitutional and statutory provisions, compliance requirements of the State Board of Equalization, and the manuals published by the State Property Tax Administrator to arrive at the actual value of each class of property.

To determine if each assessor is applying correctly the provisions of law to the actual values when arriving at valuations for assessment of all locally valued properties subject to the property tax.

The property assessment audit conducts a two-part analysis: A procedural analysis and a statistical analysis.

The procedural analysis includes all classes of property and specifically looks at how the assessor develops economic areas, confirms and qualifies sales, and develops time adjustments. The audit also examines the procedures for adequately discovering, classifying and valuing agricultural outbuildings, discovering subdivision build-out and subdivision discounting procedures. Valuation methodology for vacant land, improved residential properties and commercial properties is examined. Procedures for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests and non-producing patented mining claims are also reviewed.

Statistical analysis is performed on vacant land, residential properties, commercial industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax Administrator.

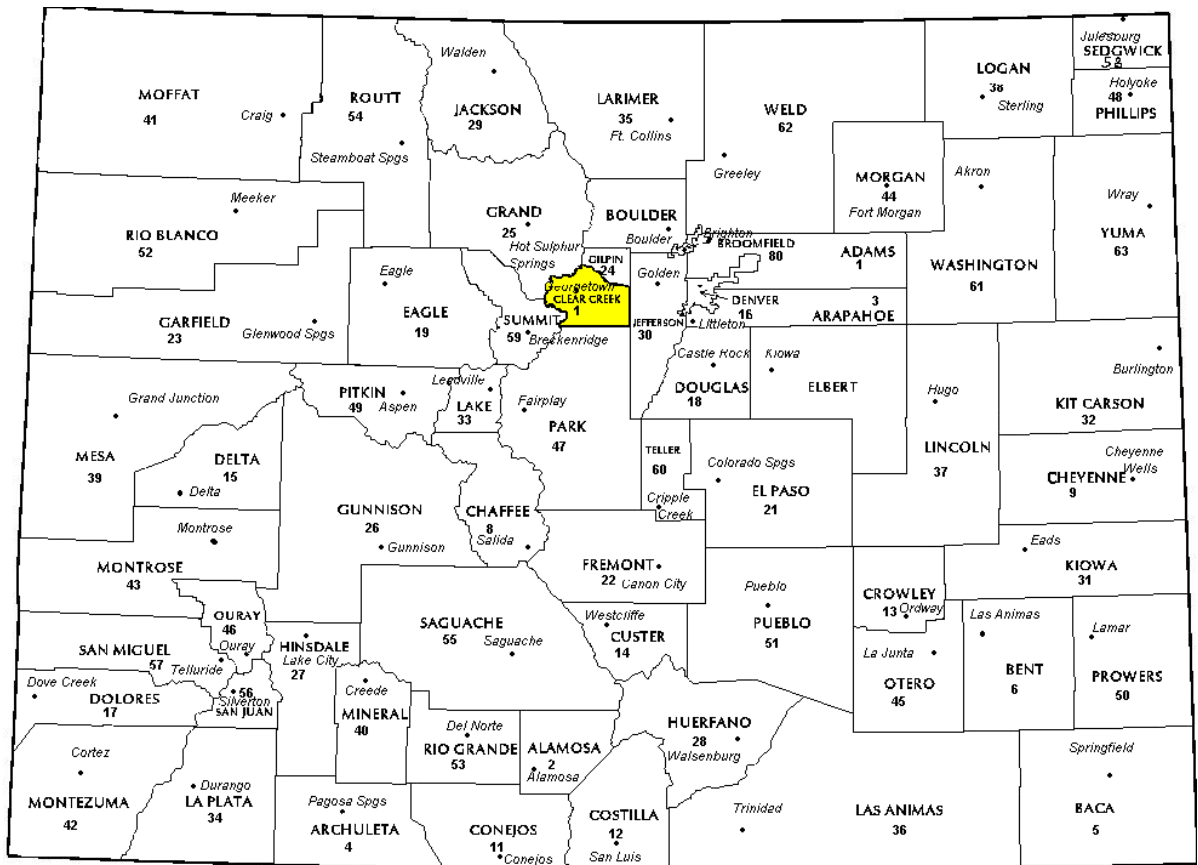
Wildrose Audit has completed the Property Assessment Study for 2017 and is pleased to report its findings for Clear Creek County in the following report.

# REGIONAL/HISTORICAL SKETCH OF CLEAR CREEK COUNTY

## Regional Information

Clear Creek County is located in the Central Mountains region of Colorado. The Central Mountains Region is in the central portion of Colorado. It extends from the northern Gilpin county boundary approximately 210 miles

southeasterly to the southern boundary of Colorado, including Chaffee, Clear Creek, Custer, Fremont, Gilpin, Huerfano, Lake, Las Animas, Park, and Teller counties.



## Historical Information

Clear Creek County had an estimated population of approximately 9,436 people with 23.9 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 3.8 percent change from April 1, 2010 to July 1, 2016.

Clear Creek County was one of the original 17 counties created by the Colorado legislature on 1 November 1861, and is one of only two counties (along with Gilpin) to have persisted with its original boundaries unchanged. It was named after Clear Creek, which runs down from the continental divide through the county. Idaho Springs was originally designated the county seat, but the county government was moved to Georgetown in 1867.

George Jackson discovered gold in a sandbar in the western reaches of Clear Creek (then called Vasquez Creek) just south of present-day Idaho Springs in January, 1859, thus starting the Colorado Gold Rush. Within a year, almost every foot of upper Clear Creek was staked out as a placer claim by miners eager to find their fortune by gold panning. It wasn't long, however, before the creek's easily accessible placer deposits were panned out.

The heartier miners shifted their focus to hard-rock mining, using the hydro-energy from the creek to help with milling operations. Miners continued to venture west, and in 1864 silver was discovered in Georgetown. With thousands of mines in operation, the population of Clear Creek Watershed swelled, at one point reaching 50,000 residents. The first train ran up Clear Creek Canyon in 1872 to Black Hawk. Mining and milling boomed in the area until the late 1890s. Silver mining continued for only two decades until the United States government removed silver as a standard for our monetary system. Gold mining continued sporadically in the communities along the creek until the early 1940s, when it could no longer be sustained.

People today can experience some of Clear Creek County's history by visiting the Georgetown Loop Railroad, a famous railroad that climbs several hundred feet between Georgetown and Silver Plume in a short distance by looping over itself and by taking in the Phoenix Mine, a working gold mine with tours and gold panning available to the public.  
*(Wikipedia.org, clearcreekwater.org & peaktotop.com)*

# RATIO ANALYSIS

## Methodology

All significant classes of property were analyzed. Sales were collected for each property class over the eighteen month period from January 1, 2015 through June 20, 2016. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the

qualification code used by each county, which were typically coded as either “Q” or “C.” The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were “lost” because of trimming. For the largest 11 counties, the residential ratio statistics were broken down by economic area as well.

## Conclusions

For this final analysis report, the minimum acceptable statistical standards allowed by the State Board of Equalization are:

ALLOWABLE STANDARDS RATIO GRID		
Property Class	Unweighted Median Ratio	Coefficient of Dispersion
Commercial/Industrial	Between .95-1.05	Less than 20.99
Condominium	Between .95-1.05	Less than 15.99
Single Family	Between .95-1.05	Less than 15.99
Vacant Land	Between .95-1.05	Less than 20.99

The results for Clear Creek County are:

<b>Clear Creek County Ratio Grid</b>					
<b>Property Class</b>	<b>Number of Qualified Sales</b>	<b>Unweighted Median Ratio</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>	<b>Time Trend Analysis</b>
Commercial/Industrial	32	0.990	1.070	16	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	450	1.006	1.008	8.4	Compliant
Vacant Land	131	0.995	1.029	15.3	Compliant

After applying the above described methodologies, it is concluded from the sales ratios that Clear Creek County is in compliance

with SBOE, DPT, and Colorado State Statute valuation guidelines.

**Recommendations**

None





# TIME TRENDING VERIFICATION

## Methodology

While we recommend that counties use the inverted ratio regression analysis method to account for market (time) trending, some counties have used other IAAO-approved methods, such as the weighted monthly median approach. We are not auditing the methods used, but rather the results of the methods used. Given this range of methodologies used to account for market trending, we concluded that the best validation method was to examine the sale ratios for each class across the appropriate sale period. To be specific, if a county has considered and adjusted correctly for market trending, then the sale ratios should remain stable (i.e. flat) across the sale period. If a residual market trend is detected, then the county may or may not have addressed market trending adequately, and a further examination

is warranted. This validation method also considers the number of sales and the length of the sale period. Counties with few sales across the sale period were carefully examined to determine if the statistical results were valid.

## Conclusions

After verification and analysis, it has been determined that Clear Creek County has complied with the statutory requirements to analyze the effects of time on value in their county. Clear Creek County has also satisfactorily applied the results of their time trending analysis to arrive at the time adjusted sales price (TASP).

## Recommendations

None

## SOLD / UNSOLD ANALYSIS

### Methodology

Clear Creek County was tested for the equal treatment of sold and unsold properties to ensure that “sales chasing” has not occurred. The auditors employed a multi-step process to determine if sold and unsold properties were valued in a consistent manner.

We test the hypothesis that the assessor has valued unsold properties consistent with what is observed with the sold properties based on several units of comparison and tests. The units of comparison include the actual value per square foot and the change in value from the previous base year period to the current base year. The first test compares the actual value per square foot between sold and unsold properties by class. The median and mean value per square foot is compared and tested for any significant difference. This is tested using non-parametric methods, such as the Mann-Whitney test for differences in the distributions or medians between sold and unsold groups. It is also examined graphically and from an appraisal perspective. Data can be stratified based on location and subclass. The second test compares the difference in the median change in value from the previous base year to the current base year between sold and unsold properties by class. The same combination of non-parametric and appraisal testing is used as with the first test. A third test employing a valuation model testing a sold/unsold binary variable while controlling for property attributes such as location, size, age and other attributes. The model determines if the sold/unsold variable is statistically and empirically significant. If all three tests indicate a significant difference between sold and unsold properties for a given class, the Auditor may meet with the county to determine if sale chasing is actually occurring,

or if there are other explanations for the observed difference.

If the unsold properties have a higher median value per square foot than the sold properties, or if the median change in value is greater for the unsold properties than the sold properties, the analysis is stopped and the county is concluded to be in compliance with sold and unsold guidelines. All sold and unsold properties in a given class are first tested, although properties with extreme unit values or percent changes can be trimmed to stabilize the analysis. The median is the primary comparison metric, although the mean can also be used as a comparison metric if the distribution supports that type of measure of central tendency.

The first test (unit value method) is applied to both residential and commercial/industrial sold and unsold properties. The second test is applied to sold and unsold vacant land properties. The second test (change in value method) is also applied to residential or commercial sold and unsold properties if the first test results in a significant difference observed and/or tested between sold and unsold properties. The third test (valuation modeling) is used in instances where the results from the first two tests indicate a significant difference between sold and unsold properties. It can also be used when the number of sold and unsold properties is so large that the non-parametric testing is indicating a false rejection of the hypothesis that there is no difference between the sold and unsold property values.

These tests were supported by both tabular and graphics presentations, along with written documentation explaining the methodology used.

<b>Sold/Unsold Results</b>	
<b>Property Class</b>	<b>Results</b>
Commercial/Industrial	Compliant
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

**Conclusions**

After applying the above described methodologies, it is concluded that Clear Creek County is reasonably treating its sold and unsold properties in the same manner.

**Recommendations**

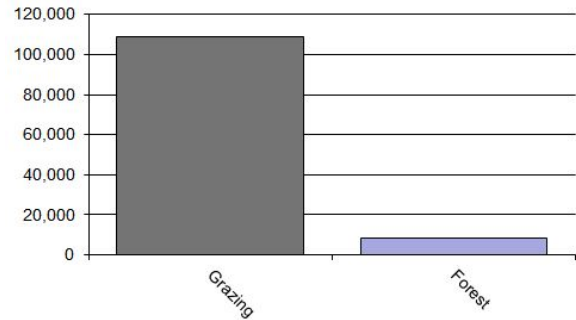
None

# AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



## Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax Administrator (PTA), were applied properly.

(See Assessor Reference Library Volume 3 Chapter 5.)

### Conclusions

An analysis of the agricultural land data indicates an acceptable appraisal of this property type. Directives, commodity prices and expenses provided by the PTA were properly applied. County yields compared favorably to those published by Colorado Agricultural Statistics. Expenses used by the county were allowable expenses and were in an acceptable range. Grazing lands carrying capacities were in an acceptable range. The data analyzed resulted in the following ratios:

Clear Creek County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4147	Grazing	13,826	7.86	108,628	108,628	1.00
4177	Forest	1,078	7.86	8,470	8,470	1.00
<b>Total/Avg</b>		<b>14,904</b>	<b>7.86</b>	<b>117,097</b>	<b>117,097</b>	<b>1.00</b>

### Recommendations

None

## Agricultural Outbuildings

### Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.74 through 5.77 were being followed.

of Property Taxation for the valuation of agricultural outbuildings.

### Recommendations

None

### Conclusions

Clear Creek County has substantially complied with the procedures provided by the Division

---

## Agricultural Land Under Improvements

---

### Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.19 and 5.20 were being followed.

### Conclusions

Clear Creek County has used the following methods to discover land under a residential improvement on a farm or ranch that is determined to be not integral under 39-1-102, C.R.S.:

- Questionnaires
- Personal Knowledge of Occupants at Assessment Date

Clear Creek County has used the following methods to discover the land area under a residential improvement that is determined to be not integral under 39-1-102, C.R.S.:

- Used 2-acre sites

Clear Creek County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

### Recommendations

None

## SALES VERIFICATION

According to Colorado Revised Statutes:

*A representative body of sales is required when considering the market approach to appraisal.*

*(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:*

*(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.*

*(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)*

*The assessor is required to use sales of real property only in the valuation process.*

*(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)*

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

WRA reviewed the sales verification procedures in 2017 for Clear Creek County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 30 sales listed as unqualified.

All but one of the sales selected in the sample gave reasons that were clear and supportable. One sale had insufficient reason for disqualification.

For residential, commercial, and vacant land sales with considerations over \$500, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

The contractor has examined the manner in which sales have been classified as qualified or unqualified, including a listing of each step in the sales verification process, any adjustment procedures, and the county official responsible for making the final decision on qualification.

When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number



of properties or by value, from the prior year. The contractor has reviewed with the assessor any analysis indicating that sales data are inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to determine if the sales included in that code have been assigned appropriately.

If 50 percent or more of the sales are qualified, the contractor has reviewed a statistically significant sample of unqualified sales, excluding sales that were disqualified for obvious reasons.

Clear Creek County did not qualify for in-depth subclass analysis.

### **Conclusions**

Clear Creek County appears to be doing a good job of verifying their sales.

### **Recommendations**

None



# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

Clear Creek County has submitted a written narrative describing the economic areas that make up the county's market areas. Clear Creek County has also submitted a map illustrating these areas. Each of these narratives have been read and analyzed for logic and appraisal sensibility. The maps were also compared to the narrative for consistency between the written description and the map.

## **Conclusions**

After review and analysis, it has been determined that Clear Creek County has

adequately identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

## **Recommendations**

None

# NATURAL RESOURCES

---

## Earth and Stone Products

---

### Methodology

Under the guidelines of the Assessor's Reference Library (ARL), Volume 3, Natural Resource Valuation Procedures, the income approach was applied to determine value for production of earth and stone products. The number of tons was multiplied by an economic royalty rate determined by the Division of Property Taxation to determine income. The income was multiplied by a recommended Hoskold factor to determine the actual value. The Hoskold factor is determined by the life of the reserves or the lease. Value is based on two variables: life and tonnage. The operator determines these since there is no other means to obtain production data through any state or private agency.

### Conclusions

The County has applied the correct formulas and state guidelines to earth and stone production.

### Recommendations

None

---

## Producing Mines

---

### Methodology

Colorado Revised Statutes (CRS) Article 39, Section 6, and the Assessor's Reference Library (ARL), Volume 3 are the basis for valuing producing mine property. The gross value of the ore extracted during the preceding year is determined. All costs of treatment, reduction, transportation and sale are deducted to estimate gross proceeds. The costs of extraction are deducted from the gross proceeds to estimate net proceeds.

The current value for assessment is determined by determining if 25% of the gross proceeds or 100% of the net proceeds is greater, then applying that number as the valuation for assessment.

### Conclusions

The County valued the producing mine production using acceptable appraisal procedures.

### Recommendations

None

## VACANT LAND

### **Subdivision Discounting**

Subdivisions were reviewed in 2017 in Clear Creek County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14). Discounting procedures were applied to all subdivisions where less than 80 percent of all sites were sold using the present worth method. The market approach was applied where 80 percent or more of the subdivision sites were sold. An absorption period was estimated for each subdivision that was discounted. An appropriate discount rate was

developed using the summation method. Subdivision land with structures was appraised at full market value.

### **Conclusions**

Clear Creek County has implemented proper procedures to adequately estimate absorption periods, discount rates, and lot values for qualifying subdivisions.

### **Recommendations**

None

# POSSESSORY INTEREST PROPERTIES

## Possessory Interest

Possessory interest property discovery and valuation is described in the Assessor's Reference Library (ARL) Volume 3 section 7 in accordance with the requirements of Chapter 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Chapter 7: A private property interest in government-owned property or the right to the occupancy and use of any benefit in government-owned property that has been granted under lease, permit, license, concession, contract, or other agreement.

Clear Creek County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural,

commercial and ski area possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

## Conclusions

Clear Creek County has implemented a discovery process to place possessory interest properties on the roll. They have also correctly and consistently applied the correct procedures and valuation methods in the valuation of possessory interest properties.

## Recommendations

None

# PERSONAL PROPERTY AUDIT

Clear Creek County was studied for its procedural compliance with the personal property assessment outlined in the Assessor's Reference Library (ARL) Volume 5, and in the State Board of Equalization (SBOE) requirements for the assessment of personal property. The SBOE requires that counties use ARL Volume 5, including current discovery, classification, documentation procedures, current economic lives table, cost factor tables, depreciation table, and level of value adjustment factor table.

The personal property audit standards narrative must be in place and current. A listing of businesses that have been audited by the assessor within the twelve-month period reflected in the plan is given to the auditor. The audited businesses must be in conformity with those described in the plan.

Aggregate ratio will be determined solely from the personal property accounts that have been physically inspected. The minimum assessment sample is one percent or ten schedules, whichever is greater, and the maximum assessment audit sample is 100 schedules.

For the counties having over 100,000 population, WRA selected a sample of all personal property schedules to determine whether the assessor is correctly applying the provisions of law and manuals of the Property Tax Administrator in arriving at the assessment levels of such property. This sample was selected from the personal property schedules audited by the assessor. In no event was the sample selected by the contractor less than 30 schedules. The counties to be included in this study are Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld. All other counties received a procedural study.

Clear Creek County is compliant with the guidelines set forth in ARL Volume 5 regarding discovery procedures, using the following methods to discover personal property accounts in the county:

- Public Record Documents
- Chamber of Commerce/Economic Development Contacts
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth

The county uses the Division of Property Taxation (DPT) recommended classification and documentation procedures. The DPT's recommended cost factor tables, depreciation tables and level of value adjustment factor tables are also used.

Clear Creek County submitted their personal property written audit plan and was current for the 2017 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Accounts with obvious discrepancies
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Same business type or use
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- Accounts close to the \$7,400 actual value exemption status

- Accounts protested with substantial disagreement

### **Conclusions**

Clear Creek County has employed adequate discovery, classification, documentation,

valuation, and auditing procedures for their personal property assessment and is in statistical compliance with SBOE requirements.

### **Recommendations**

None

## WILDROSE AUDITOR STAFF

**Harry J. Fuller**, *Audit Project Manager*

**Suzanne Howard**, *Audit Administrative Manager*

**Steve Kane**, *Audit Statistician*

**Carl W. Ross**, *Agricultural/Natural Resource Analyst*

**J. Andrew Rodriguez**, *Field Analyst*

# APPENDICES



**STATISTICAL COMPLIANCE REPORT  
FOR CLEAR CREEK COUNTY  
2017**

**I. OVERVIEW**

Clear Creek County is located in central Colorado. The county has a total of 15,792 real property parcels, according to data submitted by the county assessor’s office in 2017. The following provides a breakdown of property classes for this county:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1112) accounted for 62.2% of all vacant land parcels.

For residential improved properties, single family properties accounted for 93.7% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for less than 1.7% of all such properties in this county.

## II. DATA FILES

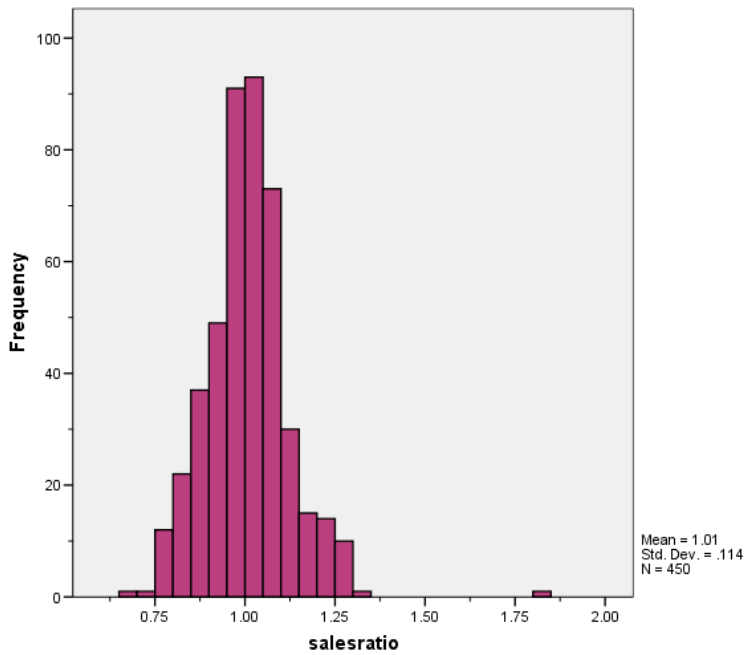
The following sales analyses were based on the requirements of the 2017 Colorado Property Assessment Study. Information was provided by the Clear Creek Assessor’s Office in May 2017. The data included all 5 property record files as specified by the Auditor.

## III. RESIDENTIAL SALES RESULTS

There were 450 qualified residential sales for the 24-month sale period ending June 30, 2016. The sales ratio analysis was analyzed as follows:

Median	<b>1.006</b>
Price Related Differential	<b>1.008</b>
Coefficient of Dispersion	<b>8.4</b>

The above ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graphs describe further the sales ratio distribution for these properties:





The above graphs indicate that the distribution of the sale ratios was within state mandated limits.

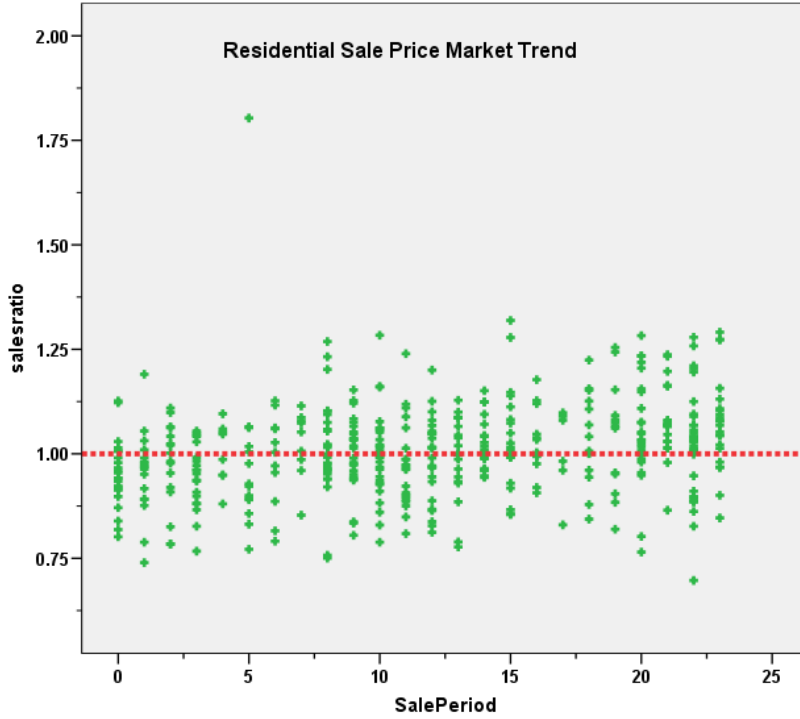
### Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending, with the following results:

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.956	.010		93.376	.000
	SalePeriod	.004	.001	.267	5.866	.000

a. Dependent Variable: salesratio



The above analysis indicated that there was a statistically significant market trend present in the sales ratio with the 24-month sale period, but was less so with the 18-month sale period. While we are passing the county on this test, we caution the assessor to carefully analyze time trending for the next reappraisal year.

### Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median actual value per square foot for 2017 between each group, as follows:

#### Report

VALSF

sold	N	Median	Mean
UNSOLD	4,283	\$182	\$193
SOLD	449	\$192	\$205

### Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of VALSF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.002	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .00.

The above results indicate that sold and unsold residential properties were valued in a consistent manner.

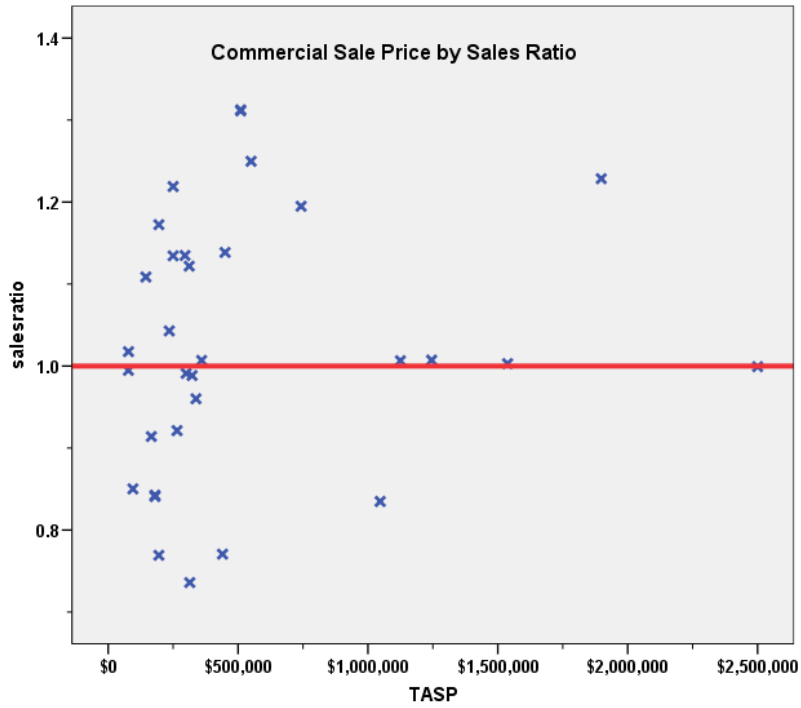
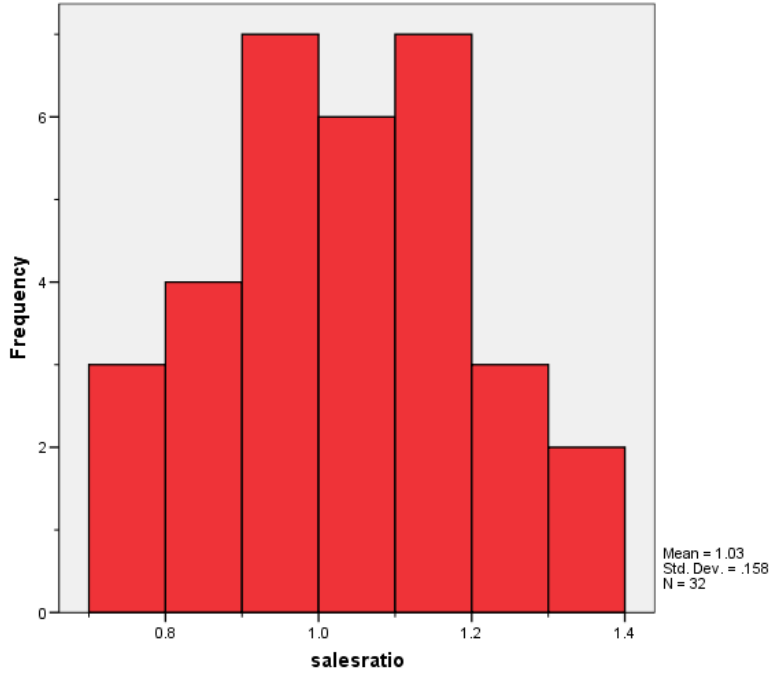
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 32 qualified commercial and industrial sales for the 60 month sale period ending June 30, 2016.

The sales ratio analysis was analyzed as follows:

Median	<b>0.990</b>
Price Related Differential	<b>1.070</b>
Coefficient of Dispersion	<b>16.0</b>

The above table indicates that the Clear Creek County commercial/industrial sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:



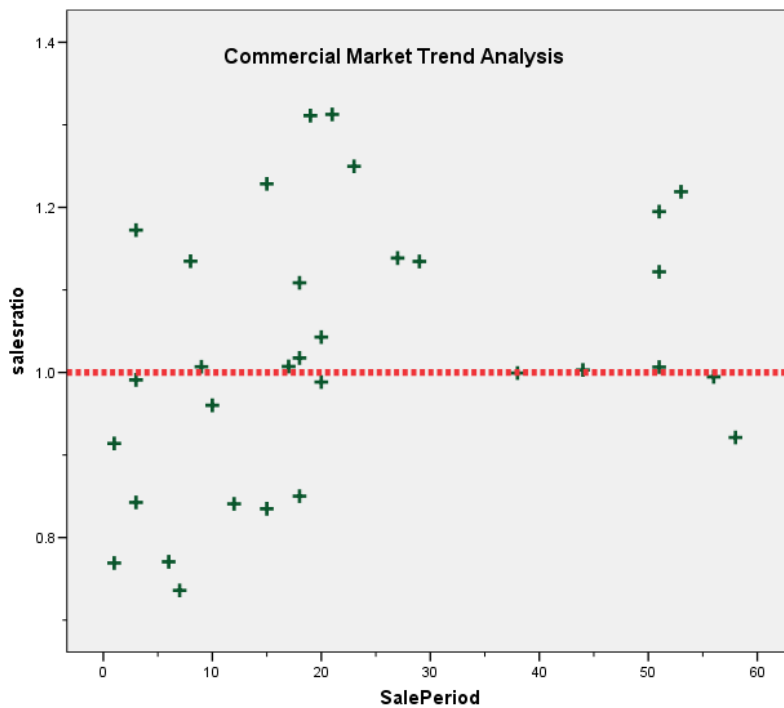
## Commercial Market Trend Analysis

The 32 commercial/industrial sales were analyzed, examining the sale ratios across a 60-month sale period with the following results:

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.964	.044		21.874	.000
	SalePeriod	.003	.002	.308	1.770	.087

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concluded that the assessor has adequately considered market trending in their commercial/industrial valuations.

### Sold/Unsold Analysis

We compared the median change in the actual value between taxable years 2016 and 2017 between sold and unsold commercial properties to determine if the assessor was valuing each group consistently, as follows

#### Report

DIFF				
	sold	N	Median	Mean
UN SOLD		192	1.00	1.14
SOLD		32	1.00	1.03

### Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DIFF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.923	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

#### Report

DIFF				
ABSTRIMP	sold	N	Median	Mean
2212.00	UN SOLD	54	1.00	1.00
	SOLD	16	1.00	1.03
2215.00	UN SOLD	14	1.00	1.09
	SOLD	4	1.00	1.02
2230.00	UN SOLD	79	1.00	1.24
	SOLD	9	1.00	1.07
2232.50	UN SOLD	1	1.00	1.00
2235.00	UN SOLD	15	1.00	1.22
	SOLD	1	.90	.90

The above results indicate that the assessor has valued sold and unsold commercial properties consistently.

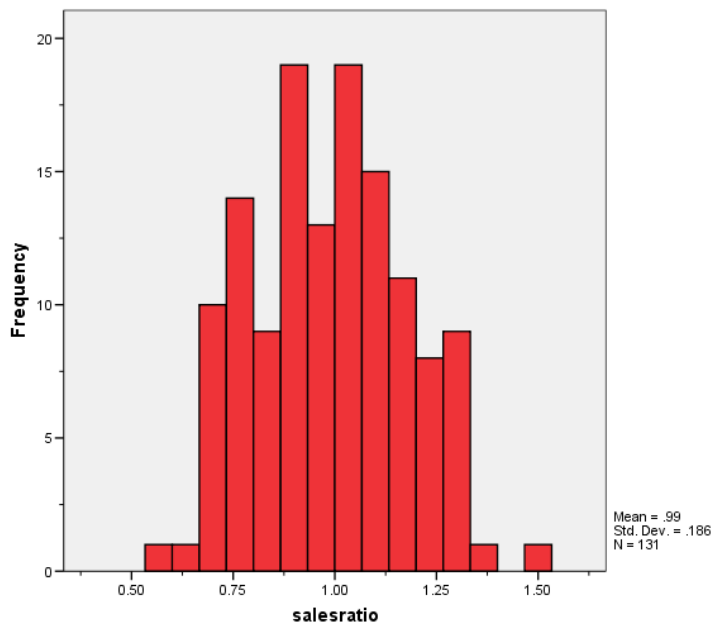


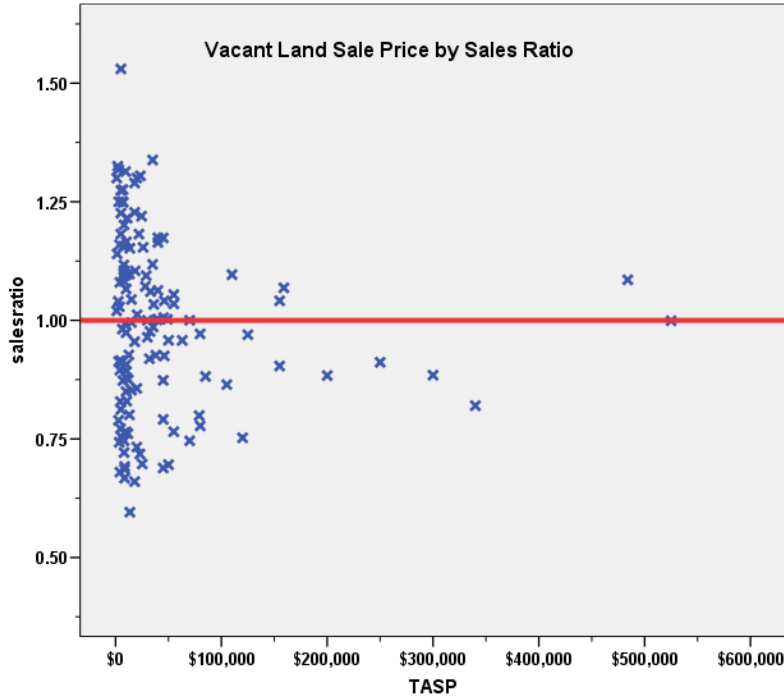
## V. VACANT LAND SALE RESULTS

There were 131 qualified vacant land sales for the 24-month sale period ending June 30, 2016. The sales ratio analysis results were as follows:

Median	<b>0.995</b>
Price Related Differential	<b>1.029</b>
Coefficient of Dispersion	<b>15.3</b>

The above tables indicate that the Clear Creek County vacant land sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:





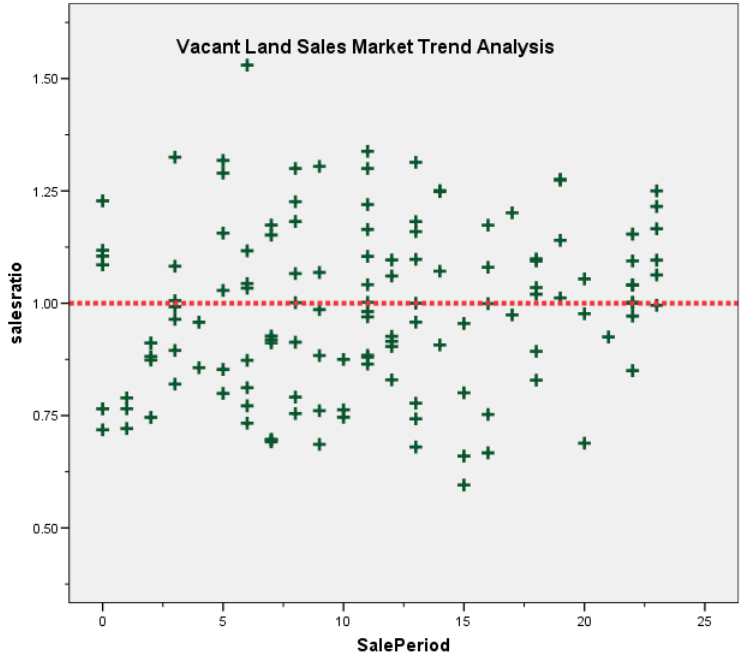
### Vacant Land Market Trend Analysis

We analyzed the sales ratios for vacant land sales, based on the time adjusted sale price (TASP) and the actual land value to determine if there was any residual time trending in the vacant land valuations. The 131 vacant land sales were analyzed, examining the sales ratios across the 24 month sale period with the following results:

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.940	.032		29.634	.000
	SalePeriod	.004	.002	.154	1.766	.080

a. Dependent Variable: salesratio



The market trend analysis indicated no statistically significant trend. Based on these results, we concluded that the assessor has adequately considered market trending in their vacant land valuations.

**Sold Unsold Analysis**

We compared the median change in actual value between 2012 and 2017 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

**Report**

DIFF			
	N	Median	Mean
UNSOLD	3,370	1.00	1.15
SOLD	131	1.00	1.31

**Hypothesis Test Summary**

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DIFF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.479	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The above results indicated that sold properties were not valued consistently more than unsold properties.

## **VI. AGRICULTURAL IMPROVEMENTS ANALYSIS**

The final statistical verification concerned the assigned actual values for agricultural residential improvements. Based on the parameters developed for the 2017 audit Clear Creek County was exempt from this analysis.

## **VII. CONCLUSIONS**

Based on this statistical analysis, there were no significant compliance issues concluded for Clear Creek County as of the date of this report.

## STATISTICAL ABSTRACT

### Residential

#### Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
1.008	.997	1.018	1.006	.997	1.016	95.7%	.999	.989	1.009	1.008	.084	11.3%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

### Commercial/Industrial

#### Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
1.026	.969	1.083	1.007	.960	1.134	98.0%	1.048	.982	1.113	.979	.123	15.5%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

### Vacant Land

#### Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
.988	.956	1.020	.995	.927	1.035	96.4%	.960	.923	.998	1.029	.153	18.8%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.



**Residential Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$25K to \$50K	3	0.7%
	\$50K to \$100K	37	8.2%
	\$100K to \$150K	36	8.0%
	\$150K to \$200K	58	12.9%
	\$200K to \$300K	120	26.7%
	\$300K to \$500K	127	28.2%
	\$500K to \$750K	55	12.2%
	\$750K to \$1,000K	9	2.0%
	Over \$1,000K	5	1.1%
Overall		450	100.0%
Excluded		0	
Total		450	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	1.283	.978	.152	32.3%
\$50K to \$100K	1.031	.999	.093	16.1%
\$100K to \$150K	1.003	.999	.080	10.5%
\$150K to \$200K	1.038	.999	.089	11.9%
\$200K to \$300K	.999	.999	.091	11.8%
\$300K to \$500K	1.014	1.003	.074	9.4%
\$500K to \$750K	.996	.999	.058	7.5%
\$750K to \$1,000K	.955	.998	.071	9.4%
Over \$1,000K	.961	.989	.066	9.3%
Overall	1.006	1.008	.084	11.3%

**Subclass**

**Case Processing Summary**

		Count	Percent
ABSTRIMP	1212.00	407	90.4%
	1220.00	1	0.2%
	1230.00	42	9.3%
Overall		450	100.0%
Excluded		0	
Total		450	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	1.006	1.009	.087	11.7%
1220.00	.777	1.000	.000	.
1230.00	1.016	1.001	.051	6.8%
Overall	1.006	1.008	.084	11.3%

### Age

#### Case Processing Summary

AgeRec	Count	Percent
Over 100	61	13.6%
75 to 100	19	4.2%
50 to 75	49	10.9%
25 to 50	204	45.3%
5 to 25	114	25.3%
5 or Newer	3	0.7%
Overall	450	100.0%
Excluded	0	
Total	450	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.017	1.003	.091	11.4%
75 to 100	1.005	1.007	.058	8.5%
50 to 75	.999	1.030	.145	19.4%
25 to 50	.999	1.005	.075	10.0%
5 to 25	1.012	1.010	.073	9.6%
5 or Newer	.966	1.016	.041	6.4%
Overall	1.006	1.008	.084	11.3%

### Improved Area

#### Case Processing Summary

ImpSFRec	Count	Percent
0	1	0.2%
LE 500 sf	9	2.0%
500 to 1,000 sf	104	23.1%
1,000 to 1,500 sf	139	30.9%
1,500 to 2,000 sf	95	21.1%
2,000 to 3,000 sf	74	16.4%
3,000 sf or Higher	28	6.2%
Overall	450	100.0%
Excluded	0	
Total	450	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.777	1.000	.000	.
LE 500 sf	.934	1.008	.208	26.3%
500 to 1,000 sf	1.003	1.015	.095	13.8%
1,000 to 1,500 sf	1.013	1.002	.081	10.5%
1,500 to 2,000 sf	1.003	1.006	.068	8.9%
2,000 to 3,000 sf	1.006	1.013	.076	10.2%
3,000 sf or Higher	1.013	1.011	.081	9.7%
Overall	1.006	1.008	.084	11.3%

### Improvement Quality

#### Case Processing Summary

	Count	Percent
QUALITY 1	1	0.2%
2	52	11.6%
3	354	78.8%
4	37	8.2%
5	5	1.1%
Overall	449	100.0%
Excluded	1	
Total	450	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	.952	1.000	.000	.
2	.989	1.009	.117	14.5%
3	1.009	1.008	.079	11.0%
4	.999	1.008	.076	9.7%
5	1.000	1.012	.081	11.0%
Overall	1.006	1.008	.083	11.3%

### Improvement Condition

#### Case Processing Summary

	Count	Percent
CONDITION 2	17	22.1%
3	43	55.8%
4	17	22.1%
Overall	77	100.0%
Excluded	373	
Total	450	



### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2	.983	.978	.093	12.3%
3	1.009	1.012	.085	14.9%
4	.987	1.024	.067	9.6%
Overall	1.003	1.009	.083	13.3%

### Commercial Median Ratio Stratification

#### Sale Price

### Case Processing Summary

		Count	Percent
SPRec	\$50K to \$100K	3	9.4%
	\$100K to \$150K	1	3.1%
	\$150K to \$200K	5	15.6%
	\$200K to \$300K	6	18.8%
	\$300K to \$500K	7	21.9%
	\$500K to \$750K	4	12.5%
	Over \$1,000K	6	18.8%
Overall		32	100.0%
Excluded		0	
Total		32	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$50K to \$100K	.995	1.008	.056	10.4%
\$100K to \$150K	1.109	1.000	.000	.
\$150K to \$200K	.843	.998	.113	20.5%
\$200K to \$300K	1.089	1.002	.082	10.1%
\$300K to \$500K	.988	.999	.116	16.1%
\$500K to \$750K	1.280	1.006	.035	4.6%
Over \$1,000K	1.005	.984	.067	12.5%
Overall	1.007	.979	.123	15.9%

## Subclass

### Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	1	3.1%
	2212.00	16	50.0%
	2215.00	4	12.5%
	2230.00	9	28.1%
	2235.00	1	3.1%
	9239.00	1	3.1%
Overall		32	100.0%
Excluded		0	
Total		32	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	1.018	1.000	.000	.
2212.00	.993	.971	.130	17.4%
2215.00	1.015	.938	.201	23.5%
2230.00	1.007	1.006	.103	14.2%
2235.00	1.007	1.000	.000	.
9239.00	1.139	1.000	.000	.
Overall	1.007	.979	.123	15.9%

## Age

### Case Processing Summary

		Count	Percent
AgeRec	Over 100	15	46.9%
	75 to 100	4	12.5%
	50 to 75	5	15.6%
	25 to 50	4	12.5%
	5 to 25	3	9.4%
	5 or Newer	1	3.1%
Overall		32	100.0%
Excluded		0	
Total		32	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.018	.980	.123	15.9%
75 to 100	.878	1.001	.138	24.8%
50 to 75	.960	.957	.148	19.0%
25 to 50	1.184	.973	.083	11.1%
5 to 25	1.003	1.001	.002	0.4%
5 or Newer	1.007	1.000	.000	.
Overall	1.007	.979	.123	15.9%

**Improvement Condition**

**Case Processing Summary**

CONDITION	Count	Percent
1	2	6.7%
2	12	40.0%
3	11	36.7%
4	5	16.7%
Overall	30	100.0%
Excluded	2	
Total	32	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	.966	1.020	.054	7.6%
2	1.022	.980	.183	20.1%
3	1.007	.984	.078	12.9%
4	1.007	.956	.124	18.0%
Overall	1.007	.977	.127	16.3%

## Vacant Land Median Ratio Stratification

### Sale Price

#### Case Processing Summary

		Count	Percent
SPRec	LT \$25K	79	60.3%
	\$25K to \$50K	29	22.1%
	\$50K to \$100K	10	7.6%
	\$100K to \$150K	4	3.1%
	\$150K to \$200K	4	3.1%
	\$200K to \$300K	2	1.5%
	\$300K to \$500K	2	1.5%
	\$500K to \$750K	1	0.8%
Overall		131	100.0%
Excluded		0	
Total		131	

#### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	1.012	1.005	.179	20.9%
\$25K to \$50K	1.002	1.007	.106	14.9%
\$50K to \$100K	.920	1.007	.114	13.2%
\$100K to \$150K	.917	1.002	.122	16.0%
\$150K to \$200K	.973	1.006	.083	9.7%
\$200K to \$300K	.898	1.001	.015	2.1%
\$300K to \$500K	.953	.976	.139	19.7%
\$500K to \$750K	.999	1.000	.000	.
Overall	.995	1.029	.153	18.7%

### Subclass

#### Case Processing Summary

		Count	Percent
ABSTRLND	100.00	92	70.2%
	200.00	1	0.8%
	510.00	1	0.8%
	520.00	20	15.3%
	530.00	5	3.8%
	540.00	1	0.8%
	550.00	2	1.5%
	1112.00	9	6.9%
	Overall		131
Excluded		0	
Total		131	

### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	1.001	1.029	.149	18.6%
200.00	.753	1.000	.000	.
510.00	.789	1.000	.000	.
520.00	.926	1.020	.159	19.6%
530.00	1.063	1.088	.116	15.8%
540.00	1.069	1.000	.000	.
550.00	.841	.977	.075	10.6%
1112.00	1.000	.987	.172	22.7%
Overall	.995	1.029	.153	18.7%