



2019

# JEFFERSON COUNTY PROPERTY ASSESSMENT STUDY

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**WILDROSE**  
APPRAISAL, INCORPORATED  
Audit Division



September 15, 2019

Ms. Natalie Mullis  
Director of Research  
Colorado Legislative Council  
Room 029, State Capitol Building  
Denver, Colorado 80203

**RE: Final Report for the 2019 Colorado Property Assessment Study**

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2019 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

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# INTRODUCTION

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## 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.

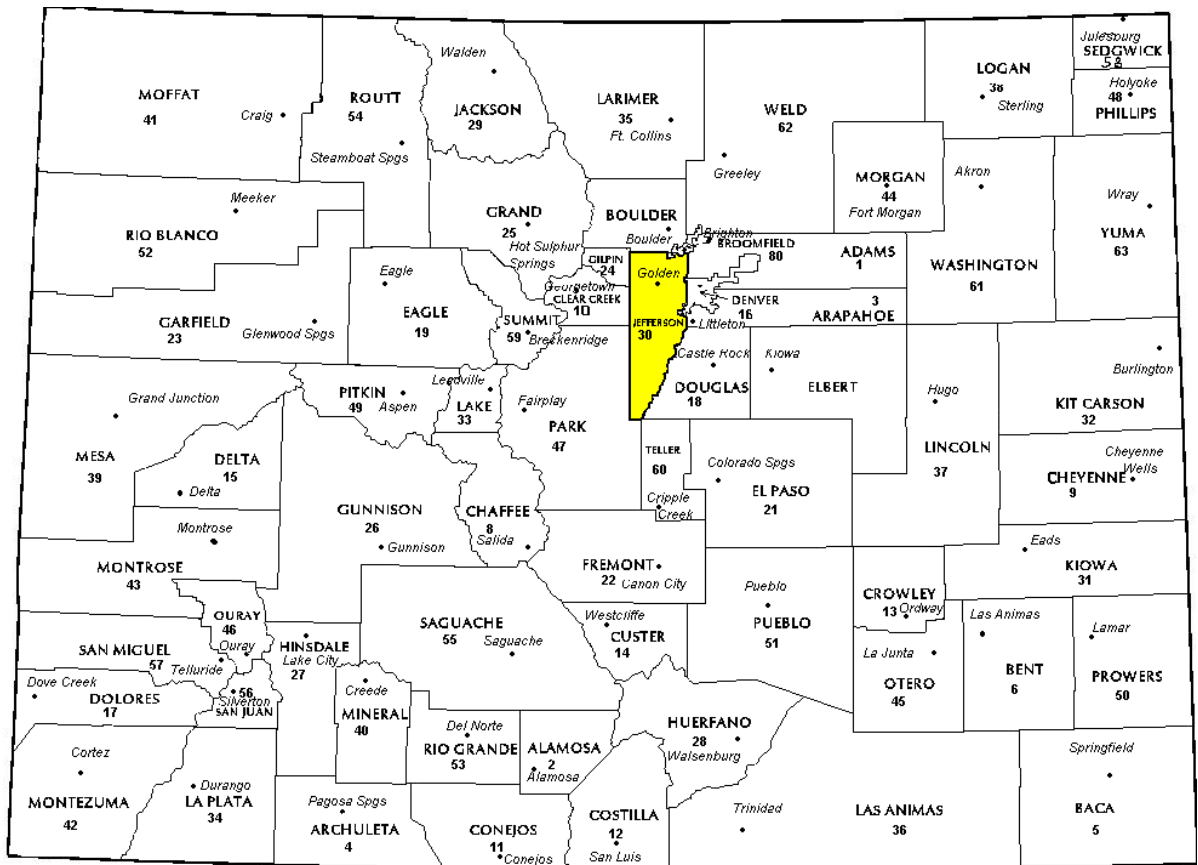
Wildrose Audit has completed the Property Assessment Study for 2019 and is pleased to report its findings for Jefferson County in the following report.

# REGIONAL/HISTORICAL SKETCH OF JEFFERSON COUNTY

## Regional Information

Jefferson County is located in the Front Range region of Colorado. The Colorado Front Range is a colloquial geographic term for the populated areas of the State that are just east of the foothills of the Front Range. It includes

Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld counties.





## Historical Information

Jefferson County had an estimated population of approximately 571,837 people with 748.5 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 7.0 percent change from April 1, 2010 to July 1, 2016.

Jefferson County is one of the seventeen original territorial counties. On August 25, 1855, the Kansas Territorial Legislature created Arapahoe County to govern the entire western portion of the territory. The county was named for the Arapaho Nation of Native Americans that lived in the region.

In July 1858, gold was discovered along the South Platte River in Arapahoe County (in present day Englewood). This discovery precipitated the Pike's Peak Gold Rush. Many residents of the mining region felt disconnected from the remote territorial governments of Kansas and Nebraska, so they voted to form their own Territory of Jefferson on October 24, 1859. The following month, the Jefferson Territorial Legislature organized 12 counties for the new territory, including Jefferson County. Jefferson County was named for the namesake of the Jefferson Territory, Thomas Jefferson, the principal author of the Declaration of Independence and the nation's

third president. Golden City served as the county seat of Jefferson County. Robert Williamson Steele, Governor of the Provisional Government of the Territory of Jefferson from 1859 to 1861, built his home in the county at Mount Vernon and later at Apex.

The Jefferson Territory never received federal sanction, but during his last week in office, President James Buchanan signed an act which organized the Territory of Colorado on February 28, 1861. That November 1, the new Colorado General Assembly organized the 17 original counties of Colorado, including a new Jefferson County. In 1908, the southern tip of Jefferson County was transferred to Park County, reducing Jefferson County to its present length of 54 miles. Several annexations by the City & County of Denver and the 2001 consolidation of the City & County of Broomfield removed eastern portions of the county.

A major employer in Jefferson County is the large Coors Brewing Company in Golden. Also, the state-supported Colorado School of Mines is located in Jefferson County, offering programs in mining and engineering. The county seat is Golden and the most populous city is Lakewood. ([www.wikipedia.org](http://www.wikipedia.org))

# 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, 2017 through June 30, 2018. 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.

All sixty-four counties were examined for compliance on the economic area level. Where there were sufficient sales data, the neighborhood and subdivision levels were tested for compliance. Although counties are determined to be in or out of compliance at the class level, non-compliant economic areas, neighborhoods and subdivisions (where applicable) were discussed with the Assessor.

**Data on the individual economic areas, neighborhoods and subdivisions are found in the STATISTICAL APPENDIX.**

## 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 Jefferson County are:

<b>Jefferson 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	380	0.975	1.020	11.8	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	23,182	0.972	1.013	8.3	Compliant
Vacant Land	421	0.982	1.012	19.3	Compliant

After applying the above described methodologies, it is concluded from the sales ratios that Jefferson 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 Jefferson County has complied with the statutory requirements to analyze the effects of time on value in their county. Jefferson 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

Jefferson 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**

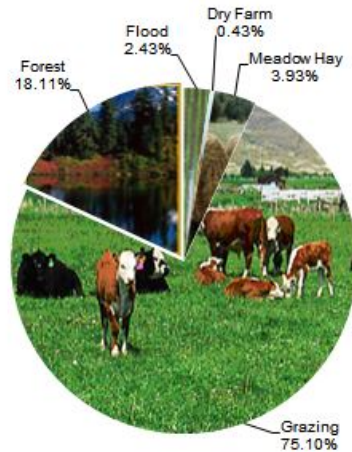
After applying the above described methodologies, it is concluded that Jefferson County is reasonably treating its sold and unsold properties in the same manner.

**Recommendations**

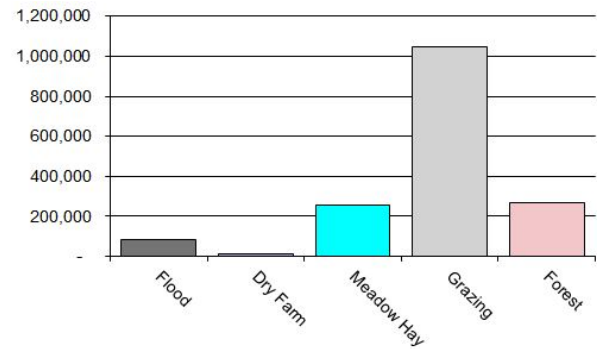
None

# 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:

<b>Jefferson County Agricultural Land Ratio Grid</b>						
<b>Abstract Code</b>	<b>Land Class</b>	<b>Number Of Acres</b>	<b>County Value Per Acre</b>	<b>County Assessed Total Value</b>	<b>WRA Total Value</b>	<b>Ratio</b>
4117	Flood	1,797	47.00	84,459	87,445	0.97
4127	Dry Farm	318	34.38	10,944	11,040	0.99
4137	Meadow Hay	2,904	88.37	256,597	256,597	1.00
4147	Grazing	55,522	18.90	1,049,376	1,049,376	1.00
4177	Forest	13,389	19.98	267,555	267,555	1.00
<b>Total/Avg</b>		<b>73,930</b>	<b>22.57</b>	<b>1,668,931</b>	<b>1,672,013</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.

### **Conclusions**

Jefferson County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of agricultural outbuildings.

### **Recommendations**

None

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## Agricultural Land Under Improvements

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### 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

Jefferson 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
- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Jefferson 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.:

- Property Record Card Analysis
- Questionnaires
- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Jefferson 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 2019 for Jefferson County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 60 sales listed as unqualified.

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

For residential, commercial, and vacant land sales with considerations over \$100,000, 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.

Jefferson County did not qualify for in-depth subclass analysis.

### **Conclusions**

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

### **Recommendations**

None

# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

Jefferson County has submitted a written narrative describing the economic areas that make up the county's market areas. Jefferson 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 Jefferson 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

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## Earth and Stone Products

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### 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

## VACANT LAND

### **Subdivision Discounting**

Subdivisions were reviewed in 2019 in Jefferson County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year can be accomplished by reducing the absorption period by one year.

### **Conclusions**

Jefferson 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.

Jefferson County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural and

commercial 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

Jefferson 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

Jefferson 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.

Jefferson 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.

Jefferson County submitted their personal property written audit plan and was current for the 2019 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
- New businesses filing for the first time
- 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



Jefferson County's median ratio is 1.00. This is in compliance with the State Board of Equalization (SBOE) compliance requirements which range from .90 to 1.10 with no COD requirements.

### **Conclusions**

Jefferson 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*

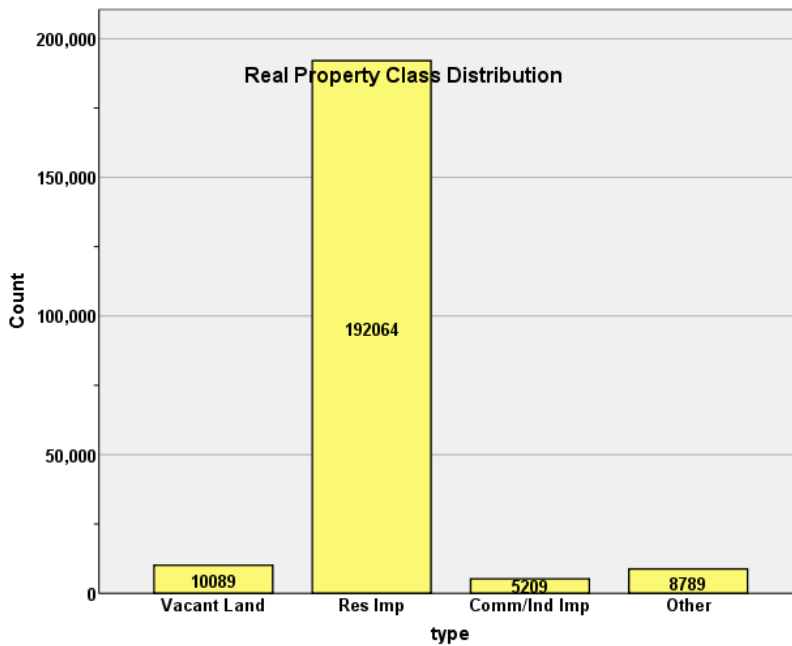
**J. Andrew Rodriguez**, *Field Analyst*

# STATISTICAL APPENDIX

## STATISTICAL COMPLIANCE REPORT FOR JEFFERSON COUNTY 2019

### I. OVERVIEW

Jefferson County is an urban county located along Colorado’s Front Range. The county has a total of 216,151 real property parcels, according to data submitted by the county assessor’s office in 2019. 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 74.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for 91.1% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 2.4% of all such properties in this county.

Based on the Audit questionnaire filled out by the assessor (see below), the following geographic levels were used by the assessor to value residential, commercial and vacant land properties:

<b>Residential Sub-market</b>	<b>Type (Economic area, Neighborhood, Other (please specify))</b>
Economic Area/Neighborhood	All Res improvements were valued by Economic Area and Neighborhood. This included Ag Res Improvements.

## II. DATA FILES

The following sales analyses were based on the requirements of the 2019 Colorado Property Assessment Study. Information was provided by the Jefferson Assessor’s Office in June 2019. The data included all 5 property record files as specified by the Auditor.

## III. RESIDENTIAL SALES RESULTS

There were 23,182 qualified residential sales in the 24 month period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	<b>0.972</b>
Price Related Differential	<b>1.013</b>
Coefficient of Dispersion	<b>8.3</b>

We next stratified the sale ratio analysis by economic area and neighborhood. The minimum count for the neighborhood stratification is 30 sales. The following are the results of this stratification analysis:

### Economic Area

#### Case Processing Summary

	Count	Percent	
ECONAREA	1.00	3338	16.0%
	2.00	4109	19.7%
	3.00	4104	19.7%
	4.00	4141	19.9%
	5.00	2252	10.8%
	6.00	628	3.0%
	7.00	105	0.5%
	8.00	946	4.5%
	9.00	1098	5.3%
	11.00	3	0.0%
	12.00	19	0.1%
	22.00	49	0.2%
	23.00	37	0.2%
	26.00	7	0.0%
	30.00	1	0.0%
	33.00	7	0.0%
	44.00	3	0.0%
58.00	1	0.0%	
Overall	20848	100.0%	
Excluded	2334		
Total	23182		

**Ratio Statistics for CURRTOT / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.977	1.004	.074
2.00	.961	1.013	.094
3.00	.973	1.009	.077
4.00	.966	1.005	.069
5.00	.976	1.011	.079
6.00	.969	1.019	.098
7.00	.967	1.007	.102
8.00	.958	1.024	.121
9.00	.961	1.015	.100
11.00	.956	1.005	.020
12.00	.988	1.051	.055
22.00	.975	1.063	.066
23.00	1.003	1.027	.048
26.00	1.055	1.167	.098
30.00	1.094	1.000	.000
33.00	.979	1.000	.045
44.00	.993	.944	.047
58.00	1.145	1.000	.000
Overall	.969	1.012	.083

Economic areas with sufficient sales were in compliance with SBOE sales ratio standards.

**B. Neighborhoods with at least 30 sales**

**Ratio Statistics for CURRTOT / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion
101	.980	1.006	.062
1001	.977	1.004	.063
1002	.978	1.010	.075
1003	.975	.998	.081
1004	.971	.997	.075
1005	.966	1.000	.051
1006	.976	1.002	.060
<b>1007</b>	<b>.938</b>	<b>1.009</b>	<b>.089</b>
1008	.972	1.003	.076
1009	.971	1.005	.075
1010	.975	1.007	.070
1011	.976	1.004	.062
1012	.980	1.004	.054
1013	.989	1.009	.081
1014	.982	1.015	.067
1015	.960	1.009	.097
1016	.969	1.011	.090
1017	.970	.998	.077
1903	.993	1.001	.071
1905	.982	1.005	.063
1906	.987	1.007	.069
1911	.986	1.002	.040
1915	.988	1.005	.061
1916	.997	1.004	.078
<b>1922</b>	<b>1.119</b>	<b>1.001</b>	<b>.091</b>
2002	.950	1.012	.091
2301	.960	1.006	.089

2302	.967	1.008	.072
2307	.961	1.005	.087
2311	.983	1.009	.073
2312	.971	1.039	.114
2314	.964	1.004	.062
2318	.973	1.006	.069
2319	.953	1.005	.085
<b>2324</b>	<b>.943</b>	<b>1.012</b>	<b>.104</b>
2329	.950	1.017	.113
2337	.968	1.018	.121
2403	.959	1.032	.100
2404	.957	1.011	.095
2405	.966	1.012	.099
2406	.961	1.028	.114
2408	.981	1.021	.112
2410	.964	1.024	.110
2411	.948	1.019	.122
2412	.984	1.022	.126
2417	.945	1.021	.120
2420	.945	1.012	.087
2424	.952	1.022	.109
2923	.961	1.001	.058
2929	.985	1.004	.055
<b>2935</b>	<b>.926</b>	<b>1.008</b>	<b>.089</b>
<b>2936</b>	<b>.915</b>	<b>1.006</b>	<b>.065</b>
2945	.967	1.009	.060
2958	.972	1.002	.067
<b>3001</b>	<b>.894</b>	<b>1.003</b>	<b>.140</b>
<b>3003</b>	<b>.941</b>	<b>1.019</b>	<b>.129</b>
3004	.959	1.023	.111
3006	.960	1.005	.084
3007	.946	1.013	.091
3008	.951	1.018	.103
3009	.961	1.025	.105
3010	.948	1.008	.099
3011	.981	1.004	.074
3012	.972	1.000	.071
3014	.983	1.000	.071
3015	.968	1.004	.064
3016	.996	1.001	.065
3017	.965	1.001	.055
3018	.981	1.015	.070
3019	.978	1.008	.081
3021	.966	1.008	.066
3022	.976	1.007	.066
3024	.961	1.003	.061
3025	.966	1.008	.079
3026	1.000	1.017	.082
3028	.961	1.007	.061
3029	.969	1.003	.078
3906	.981	1.012	.095
3908	.990	1.010	.080
3910	.978	1.001	.046
3911	.982	1.003	.052
3918	.991	1.002	.041
3919	.975	1.002	.049
3920	.977	1.002	.067

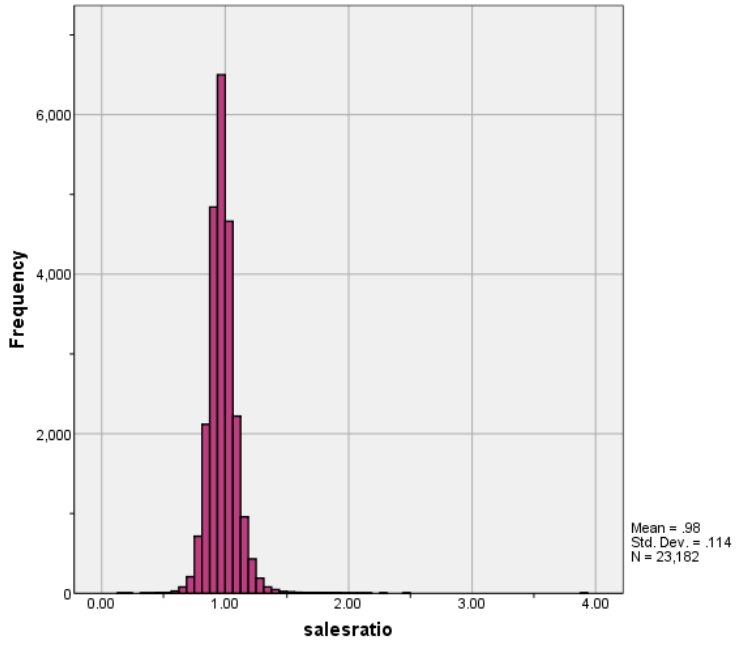
3924	.980	1.003	.068
3938	.971	1.008	.063
3942	.985	1.005	.052
3943	.968	1.011	.070
3944	.967	1.004	.049
4003	.970	1.012	.075
4005	.964	1.000	.055
4006	.968	1.008	.070
4008	.982	1.002	.046
4009	.952	1.000	.059
<b>4010</b>	<b>.941</b>	<b>1.001</b>	<b>.076</b>
4011	.976	1.008	.078
4012	.952	1.001	.045
4013	.968	1.002	.051
4015	.956	1.004	.064
4016	.967	1.002	.079
4020	.968	1.001	.082
4021	.961	.998	.066
4022	.970	1.003	.071
4024	.965	1.000	.065
4025	.951	1.000	.069
4026	.969	1.002	.064
4027	.970	1.002	.053
4028	.977	1.004	.085
4029	.978	.999	.064
4030	.960	1.004	.071
4031	.958	1.007	.071
4032	.965	.999	.068
4034	.977	1.001	.054
4035	.970	.998	.043
<b>4036</b>	<b>.920</b>	<b>1.015</b>	<b>.165</b>
4038	.937	1.016	.118
4041	.973	1.002	.045
4046	.963	1.026	.126
4904	.977	.999	.052
4905	.989	1.001	.050
4907	.999	.999	.049
4910	.987	1.004	.043
4912	.983	1.002	.041
4913	.992	.991	.089
4914	.990	1.009	.070
4916	.984	1.002	.048
<b>4918</b>	<b>.920</b>	<b>.999</b>	<b>.057</b>
5001	.995	1.023	.106
5003	.957	1.002	.063
5006	.987	1.010	.084
5007	.977	1.006	.057
5010	1.008	1.046	.150
5011	.970	1.010	.075
5901	.972	1.007	.064
6101	.962	1.002	.065
6102	.971	1.000	.075
6103	.962	1.009	.110
6104	.983	1.019	.125
<b>6106</b>	<b>.937</b>	<b>1.043</b>	<b>.111</b>
6107	.974	1.003	.062
6109	.963	1.000	.062



6901	.971	1.042	.145
6904	.958	1.021	.094
7013	.969	1.012	.088
8001	.961	1.013	.132
<b>8002</b>	<b>.958</b>	<b>1.069</b>	<b>.181</b>
8004	.955	1.023	.115
8005	.964	1.009	.101
8009	.962	1.018	.101
8010	.959	1.010	.089
8011	.954	1.019	.111
8012	.971	.998	.086
<b>8013</b>	<b>.912</b>	<b>1.040</b>	<b>.144</b>
<b>8014</b>	<b>.918</b>	<b>1.061</b>	<b>.124</b>
8016	.963	1.015	.143
<b>8017</b>	<b>.971</b>	<b>.972</b>	<b>.179</b>
8020	.959	1.017	.117
9012	.975	1.020	.119
9024	.961	1.026	.087
9033	.971	1.019	.095
9043	.976	1.004	.084
9074	.956	1.023	.105
9082	.997	1.017	.137
9093	.963	1.005	.088
<b>9103</b>	<b>.941</b>	<b>1.008</b>	<b>.109</b>
<b>9114</b>	<b>.929</b>	<b>1.011</b>	<b>.084</b>
<b>9122</b>	<b>.890</b>	<b>1.017</b>	<b>.082</b>
9133	.964	1.005	.078
9143	.948	1.022	.091
<b>9152</b>	<b>.939</b>	<b>1.030</b>	<b>.108</b>
<b>9162</b>	<b>.941</b>	<b>1.008</b>	<b>.138</b>
Overall	.968	1.010	.082

The neighborhoods highlighted in red were out of the compliance range for either the sales ratio, the COD or both. The county assessor has contacted to determine reasons for these non-compliant neighborhoods.

In terms of overall and economic areas, 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 and broken down by economic area, as follows:

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

ECONAREA	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
.	1	(Constant)	.999	.005		209.918	.000
		SalePeriod	.000	.000	.025	1.217	.224
1.00	1	(Constant)	.978	.003		295.605	.000
		SalePeriod	.000	.000	.035	2.011	.044
2.00	1	(Constant)	.964	.004		266.501	.000
		SalePeriod	.000	.000	.028	1.803	.071
3.00	1	(Constant)	.970	.003		296.546	.000
		SalePeriod	.001	.000	.065	4.184	.000
4.00	1	(Constant)	.973	.003		360.150	.000
		SalePeriod	-1.080E-5	.000	-.001	-.055	.956
5.00	1	(Constant)	.971	.005		197.663	.000
		SalePeriod	.000	.000	.020	.968	.333
6.00	1	(Constant)	.961	.010		96.437	.000
		SalePeriod	.001	.001	.070	1.752	.080
7.00	1	(Constant)	.975	.025		38.634	.000
		SalePeriod	.000	.002	-.012	-.125	.901
8.00	1	(Constant)	.966	.010		99.205	.000
		SalePeriod	.000	.001	-.008	-.250	.803
9.00	1	(Constant)	.970	.008		124.778	.000
		SalePeriod	7.612E-7	.001	.000	.001	.999
12.00	1	(Constant)	1.006	.031		32.311	.000
		SalePeriod	-5.196E-5	.002	-.005	-.022	.982
22.00	1	(Constant)	.899	.021		43.651	.000
		SalePeriod	.007	.002	.529	4.277	.000
23.00	1	(Constant)	.987	.024		41.714	.000
		SalePeriod	.001	.002	.065	.385	.703

a. Dependent Variable: salesratio

There was no residual significant market trending present in the sale ratio data for any of the economic areas; economic areas with statistically significant trends were not significant in terms of magnitude. We concluded that the assessor has adequately addressed market trending in the valuation of residential properties.

### 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 2019 between each group. The data was analyzed both as a whole and stratified by economic area and neighborhoods (with at least 30 sales), as follows:

Class Report			
VALSF			
Class	N	Median	Mean
UNSOLD	168882	\$247	\$261
SOLD	23182	\$254	\$268

**Economic Area  
Report**

VALSF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	23730	\$234	\$243
	SOLD	3338	\$243	\$252
2.00	UNSOLD	33080	\$271	\$279
	SOLD	4109	\$284	\$294
3.00	UNSOLD	33739	\$248	\$257
	SOLD	4104	\$259	\$269
4.00	UNSOLD	33551	\$230	\$239
	SOLD	4141	\$244	\$252
5.00	UNSOLD	7945	\$239	\$252
	SOLD	2252	\$235	\$240
6.00	UNSOLD	6898	\$297	\$312
	SOLD	628	\$307	\$325
7.00	UNSOLD	1121	\$282	\$305
	SOLD	105	\$284	\$305
8.00	UNSOLD	7937	\$293	\$309
	SOLD	946	\$299	\$314
9.00	UNSOLD	8757	\$278	\$289
	SOLD	1098	\$299	\$306
11.00	UNSOLD	37	\$187	\$202
	SOLD	3	\$229	\$244
12.00	UNSOLD	261	\$162	\$222
	SOLD	19	\$181	\$194
22.00	UNSOLD	393	\$160	\$187
	SOLD	49	\$202	\$219
23.00	UNSOLD	326	\$169	\$191
	SOLD	37	\$185	\$210

**Neighborhoods with at least 30 sales**

Value per SF						Change in Value						
NBHD		N	Med Val.SF	Mean Val/Sf	Med Diff	Mean Diff		N	Med Chg Val	Mean Chg Val	Med Diff	Mean Diff
101	UNSOLD	636	\$160	\$171			UNSOLD	635	1.20	1.24		
	SOLD	71	\$190	\$207	18%	21%	SOLD	71	1.38	1.45	15%	17%
2312	UNSOLD	473	\$256	\$263			UNSOLD	468	1.05	1.06		
	SOLD	57	\$285	\$289	12%	10%	SOLD	57	1.14	1.16	8%	9%
3019	UNSOLD	717	\$227	\$240			UNSOLD	702	1.10	1.11		
	SOLD	133	\$296	\$299	30%	25%	SOLD	132	1.16	1.23	6%	11%
9024	UNSOLD	859	\$285	\$294			UNSOLD	851	1.13	1.13		
	SOLD	88	\$313	\$328	10%	12%	SOLD	88	1.22	1.23	8%	8%

Out of 171 residential neighborhoods with at least 30 sales, there were only four that had differences of 10 percent or more between sold and unsold properties using the value per square foot comparison test and the median change in value comparison test.

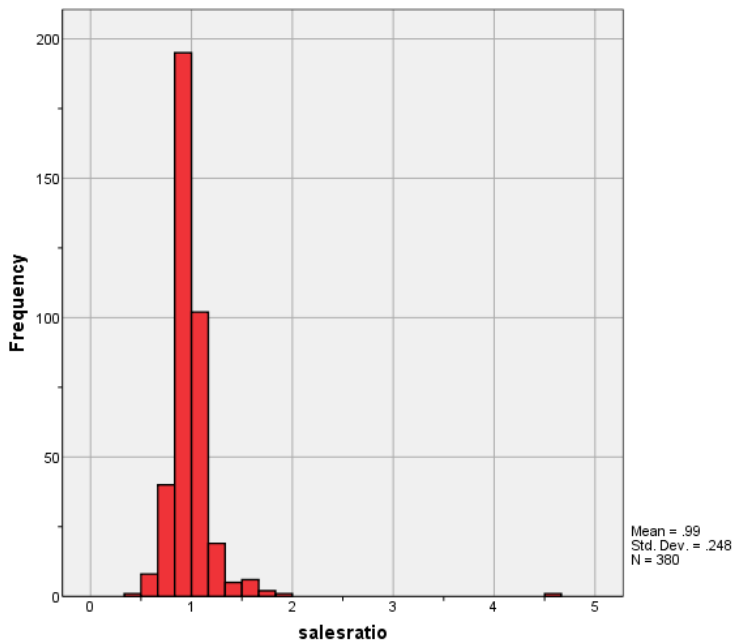
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

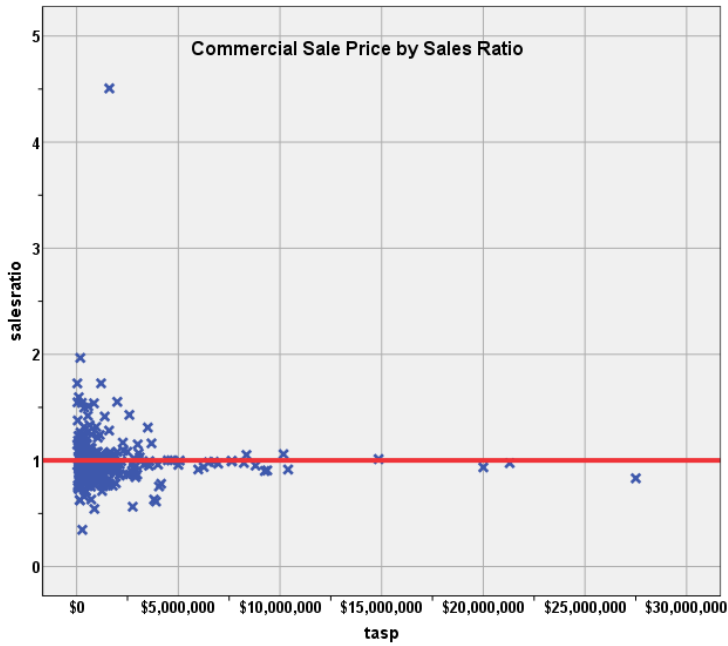
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 380 qualified commercial/industrial sales in the 24 month period ending June 30, 2018. The sales ratio analysis was analyzed as follows:

Median	<b>0.975</b>
Price Related Differential	<b>1.020</b>
Coefficient of Dispersion	<b>11.8</b>

The above table indicates that the Jefferson County vacant land sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:





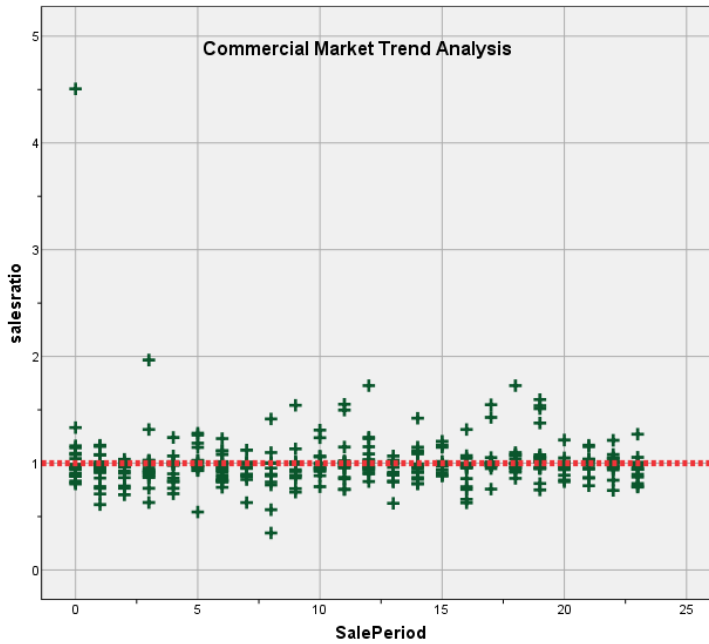
### Commercial/Industrial Market Trend Analysis

The commercial/industrial sales were analyzed for residual marketing trending by examining the sale ratios across the 24 month sale period with the following results:

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

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.989	.023		42.288	.000
	SalePeriod	.000	.002	.009	.176	.860

a. Dependent Variable: salesratio



There was no residual market trending present in the commercial sale ratios. We concluded that the assessor has adequately considered market trending adjustments as part of the vacant land valuation.

### Sold/Unsold Analysis

We compared the 2019 median value per square foot between sold and unsold commercial/industrial properties to determine if they were valued consistently, as follows:

#### Report

VALSF

	N	Median	Mean
UNSOLD	5,161	\$117	\$154
SOLD	427	\$143	\$170

#### Report

VALSF

ABSTRIMP	sold	N	Median	Mean
2212	UNSOLD	1179	\$133	\$184
	SOLD	79	\$236	\$261
2215	UNSOLD	49	\$120	\$122
	SOLD	5	\$157	\$149
2220	UNSOLD	505	\$98	\$122
	SOLD	63	\$137	\$163
2230	UNSOLD	950	\$197	\$233
	SOLD	70	\$241	\$265
2235	UNSOLD	656	\$94	\$106
	SOLD	36	\$117	\$128
2245	UNSOLD	436	\$150	\$149
	SOLD	51	\$151	\$158



3230	UNSOLD	718	\$135	\$134
	SOLD	60	\$150	\$143

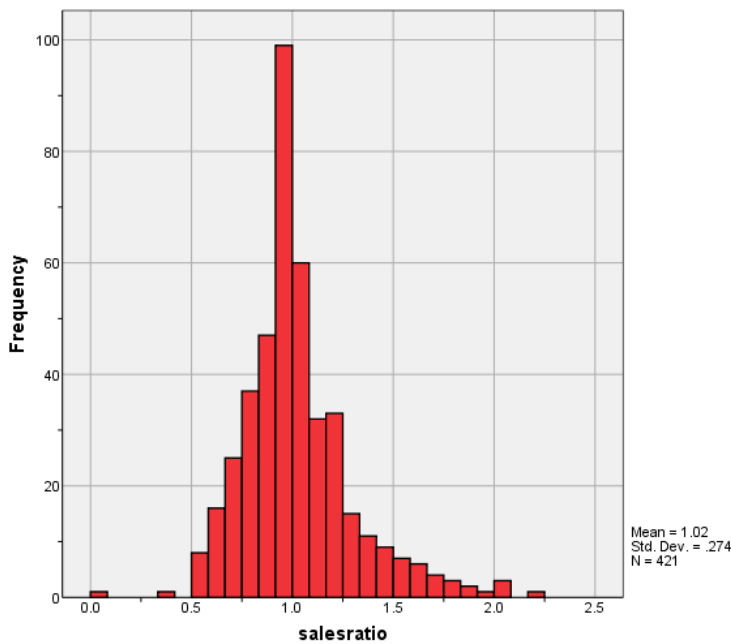
Overall and by most sub-classes, sold properties were adjusted by a greater amount than unsold properties. We will contact the assessor to determine why there are differences of this magnitude.

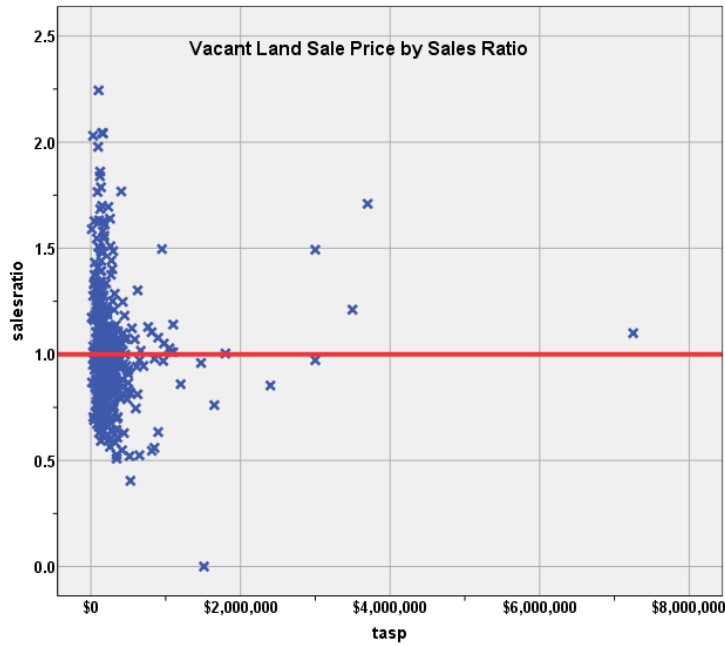
### V. VACANT LAND SALE RESULTS

There were 421 qualified vacant land sales for the 24 month period ending June 30, 2018. The sales ratio analysis results were as follows:

<b>Median</b>	<b>0.982</b>
<b>Price Related Differential</b>	<b>1.012</b>
<b>Coefficient of Dispersion</b>	<b>19.3</b>

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





The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

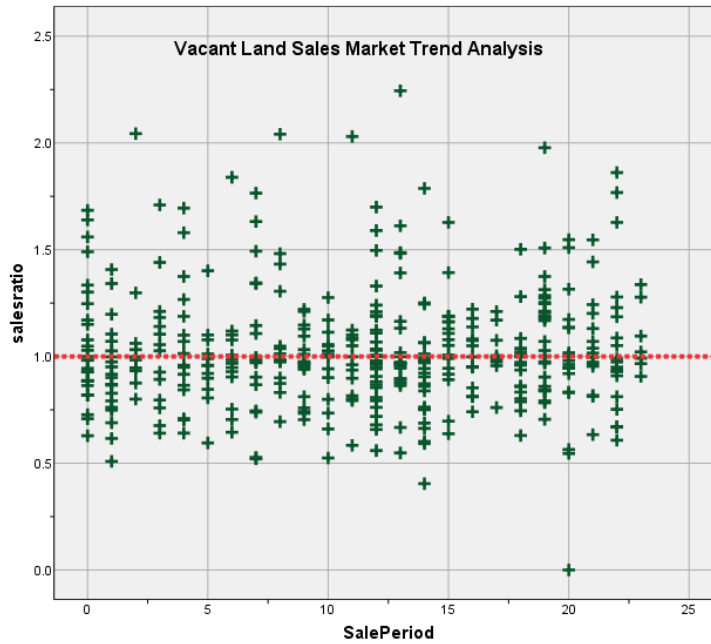
### Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 24-month sale period, with the following results:

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

Model		Unstandardized Coefficients	Standardized Coefficients			
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.015	.026		38.545	.000
	SalePeriod	.001	.002	.018	.362	.718

a. Dependent Variable: salesratio



The above analysis indicated that there was no significant statistical trend. We therefore concluded that the assessor has adequately dealt with market trending for vacant land properties.

**Sold/Unsold Analysis**

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in actual value for taxable years 2018 and 2019 between each group, as follows:

**Report**

DIFF				
		N	Median	Mean
UNSOLD		8161	1.02	1.19
SOLD		356	1.27	1.33

We next performed the same comparison analysis by subdivision with at least 3 sales. This indicated that when broken down by subdivision, there was no consistent pattern of sold vacant land parcels being adjusted at a greater rate than unsold properties. The following table was developed using subdivisions with at least 3 sales:

**Report**

DIFF				
SUBDIVNO		N	Median	Mean
108050	UNSOLD	65	1.32	1.30
	SOLD	4	1.30	1.16
142400	UNSOLD	15	1.02	1.02
	SOLD	3	.66	.80
218000	UNSOLD	26	1.11	1.14
	SOLD	3	1.34	1.51
238200	UNSOLD	54	1.12	1.10

	SOLD	3	1.15	1.17
348200	UNSOLD	11	1.00	.99
	SOLD	3	1.58	1.29
361630	UNSOLD	1	.74	.74
	SOLD	3	1.05	1.05
377400	UNSOLD	43	1.43	1.48
	SOLD	3	1.35	1.41
416800	UNSOLD	5	.55	.59
	SOLD	4	.80	1.03
486500	UNSOLD	4	2.09	1.84
	SOLD	4	1.22	1.42
514600	UNSOLD	82	1.17	1.18
	SOLD	5	1.13	1.17
567009	UNSOLD	3	1.70	1.70
	SOLD	5	1.81	1.70
615125	UNSOLD	8	1.29	1.35
	SOLD	11	1.24	1.25
615127	UNSOLD	5	1.88	1.81
	SOLD	3	1.90	1.83
636005	UNSOLD	10	1.44	1.47
	SOLD	3	1.52	1.57
661200	UNSOLD	10	1.02	1.13
	SOLD	4	1.19	1.16
667400	UNSOLD	40	.98	.90
	SOLD	3	1.12	1.06
788400	UNSOLD	3	1.11	1.09
	SOLD	5	1.35	1.35

## V. CONCLUSIONS

Based on this 2019 audit statistical analysis, residential, commercial/industrial and vacant land properties were found to be in compliance with state guidelines.

## STATISTICAL ABSTRACT

### Residential

Ratio Statistics for CURRTOT / tasp													
ECONAREA	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			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	Actual Coverage		Lower Bound	Upper Bound			
.	1.004	1.000	1.009	.993	.989	.998	95.1%	.999	.993	1.004	1.006	.081	11.9%
1.00	.984	.980	.987	.977	.973	.980	95.3%	.979	.976	.983	1.004	.074	9.9%
2.00	.970	.966	.973	.961	.957	.965	95.1%	.957	.953	.961	1.013	.094	12.8%
3.00	.982	.978	.985	.973	.970	.976	95.3%	.973	.969	.976	1.009	.077	11.2%
4.00	.973	.970	.976	.966	.963	.968	95.3%	.969	.965	.972	1.005	.069	9.1%
5.00	.975	.970	.980	.976	.971	.982	95.5%	.964	.959	.969	1.011	.079	12.1%
6.00	.976	.965	.986	.969	.958	.977	95.8%	.958	.944	.971	1.019	.098	13.5%
7.00	.973	.947	.998	.967	.941	.995	96.9%	.965	.935	.996	1.007	.102	13.7%
8.00	.964	.954	.974	.958	.948	.963	95.3%	.941	.929	.954	1.024	.121	16.2%
9.00	.970	.963	.978	.961	.952	.967	95.0%	.956	.947	.965	1.015	.100	13.5%
11.00	.955	.884	1.025	.956	.926	.982	100.0%	.950	.848	1.052	1.005	.020	3.0%
12.00	1.006	.971	1.040	.988	.960	1.043	98.1%	.957	.893	1.021	1.051	.055	7.1%
22.00	.971	.944	.999	.975	.960	.990	95.6%	.914	.805	1.023	1.063	.066	9.9%
23.00	.995	.971	1.019	1.003	.965	1.013	95.3%	.969	.835	1.103	1.027	.048	7.2%
26.00	1.059	.942	1.176	1.055	.887	1.211	98.4%	.908	.847	.968	1.167	.098	11.9%
30.00	1.094	.	.	1.094	.	.	.	1.094	.	.	1.000	.000	.
33.00	.966	.911	1.022	.979	.862	1.046	98.4%	.967	.936	.998	1.000	.045	6.2%
44.00	.997	.823	1.171	.993	.929	1.069	100.0%	1.056	.982	1.130	.944	.047	7.0%
58.00	1.145	.	.	1.145	.	.	.	1.145	.	.	1.000	.000	.

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

### Ratio Statistics for CURRTOT / tasp

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			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	Actual Coverage		Lower Bound	Upper Bound			
.992	.967	1.017	.975	.963	.988	95.5%	.973	.943	1.003	1.020	.118	25.0%

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			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	Actual Coverage		Lower Bound	Upper Bound			
1.023	.997	1.049	.982	.971	.999	95.9%	1.011	.953	1.069	1.012	.193	26.8%

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	2	0.0%
	\$50K to \$100K	19	0.1%
	\$100K to \$150K	132	0.6%
	\$150K to \$200K	593	2.6%
	\$200K to \$300K	3193	13.8%
	\$300K to \$500K	11615	50.1%
	\$500K to \$750K	5844	25.2%
	\$750K to \$1,000K	1232	5.3%
	Over \$1,000K	552	2.4%
Overall		23182	100.0%
Excluded		0	
Total		23182	

**Ratio Statistics for CURRTOT / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	1.898	1.000	.047	6.7%
\$50K to \$100K	1.310	1.003	.161	22.7%
\$100K to \$150K	1.046	1.004	.143	32.1%
\$150K to \$200K	1.014	1.001	.098	15.1%
\$200K to \$300K	.986	1.000	.079	12.2%
\$300K to \$500K	.974	1.002	.077	10.3%
\$500K to \$750K	.964	1.001	.079	10.5%
\$750K to \$1,000K	.939	1.001	.098	13.2%
Over \$1,000K	.889	.983	.125	16.0%
Overall	.972	1.013	.083	11.7%

**Subclass**

**Case Processing Summary**

		Count	Percent
ABSTRIMP	1212.00	20517	88.5%
	1215.00	203	0.9%
	1220.00	76	0.3%
	1225.00	49	0.2%
	1230.00	2334	10.1%
	1240.00	2	0.0%
	2215.00	1	0.0%
Overall		23182	100.0%
Excluded		0	
Total		23182	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.969	1.011	.082	11.6%
1215.00	.880	1.021	.122	17.2%
1220.00	.974	1.005	.061	9.0%
1225.00	1.002	1.051	.059	8.7%
1230.00	.993	1.006	.081	12.1%
1240.00	.878	1.009	.018	2.5%
2215.00	1.094	1.000	.000	.
Overall	.972	1.013	.083	11.7%

### Improvement Age

#### Case Processing Summary

		Count	Percent
AgeRec	Over 100	125	0.5%
	75 to 100	434	1.9%
	50 to 75	4122	17.8%
	25 to 50	10461	45.1%
	5 to 25	4989	21.5%
	5 or Newer	3051	13.2%
Overall		23182	100.0%
Excluded		0	
Total		23182	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.934	1.027	.172	22.7%
75 to 100	.912	1.022	.143	20.1%
50 to 75	.959	1.012	.099	14.1%
25 to 50	.969	1.006	.076	10.6%
5 to 25	.980	1.024	.075	10.7%
5 or Newer	.989	1.019	.079	11.6%
Overall	.972	1.013	.083	11.7%

### Improved Area

#### Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	44	0.2%
	500 to 1,000 sf	3171	13.7%
	1,000 to 1,500 sf	7324	31.6%
	1,500 to 2,000 sf	5565	24.0%
	2,000 to 3,000 sf	5365	23.1%
	3,000 sf or Higher	1713	7.4%
Overall		23182	100.0%
Excluded		0	
Total		23182	



### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.988	1.046	.154	25.3%
500 to 1,000 sf	.968	1.014	.089	13.3%
1,000 to 1,500 sf	.972	1.009	.078	10.9%
1,500 to 2,000 sf	.970	1.008	.079	11.0%
2,000 to 3,000 sf	.976	1.011	.083	12.0%
3,000 sf or Higher	.965	1.020	.096	13.0%
Overall	.972	1.013	.083	11.7%

### Improvement Quality

#### Case Processing Summary

	Count	Percent
QUALITY 0	10	0.0%
1	70	0.3%
2	3294	14.2%
3	13840	59.7%
4	5094	22.0%
5	850	3.7%
6	24	0.1%
Overall	23182	100.0%
Excluded	0	
Total	23182	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	1.118	1.012	.160	19.2%
1	.938	1.041	.174	24.4%
2	.955	1.013	.091	13.8%
3	.971	1.009	.077	10.8%
4	.981	1.020	.084	12.0%
5	.994	1.028	.105	13.5%
6	.916	1.036	.143	20.0%
Overall	.972	1.013	.083	11.7%

### Commercial Median Ratio Stratification

#### Sale Price

#### Case Processing Summary

	Count	Percent
SPRec \$25K to \$50K	4	1.1%
\$50K to \$100K	11	2.9%
\$100K to \$150K	22	5.8%
\$150K to \$200K	22	5.8%
\$200K to \$300K	25	6.6%
\$300K to \$500K	72	18.9%

\$500K to \$750K	47	12.4%
\$750K to \$1,000K	38	10.0%
Over \$1,000K	139	36.6%
Overall	380	100.0%
Excluded	0	
Total	380	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	1.348	1.004	.217	26.3%
\$50K to \$100K	1.100	.997	.141	18.5%
\$100K to \$150K	.946	1.004	.121	19.9%
\$150K to \$200K	.977	.996	.141	26.1%
\$200K to \$300K	.980	1.005	.126	20.8%
\$300K to \$500K	.971	1.002	.095	13.8%
\$500K to \$750K	.988	1.002	.096	15.7%
\$750K to \$1,000K	.998	.999	.088	15.2%
Over \$1,000K	.964	1.023	.125	35.0%
Overall	.975	1.020	.118	25.5%

### Subclass

### Case Processing Summary

	Count	Percent	
ABSTRIMP	1225.00	1	0.3%
	2212.00	80	21.1%
	2215.00	5	1.3%
	2220.00	67	17.6%
	2225.00	2	0.5%
	2230.00	72	18.9%
	2235.00	37	9.7%
	2245.00	51	13.4%
	3212.00	1	0.3%
	3215.00	1	0.3%
	3230.00	63	16.6%
Overall	380	100.0%	
Excluded	0		
Total	380		

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1225.00	1.282	1.000	.000	.
2212.00	.957	1.004	.117	18.3%
2215.00	.970	1.009	.025	3.7%
2220.00	1.000	1.021	.093	13.2%
2225.00	.982	.995	.017	2.4%
2230.00	.979	1.011	.084	15.5%
2235.00	.980	1.096	.200	61.9%
2245.00	.992	1.069	.136	25.3%
3212.00	.954	1.000	.000	.
3215.00	1.169	1.000	.000	.
3230.00	.925	1.008	.117	15.8%
Overall	.975	1.020	.118	25.5%

### Improvement Age

#### Case Processing Summary

		Count	Percent
AgeRec	Over 100	13	3.4%
	75 to 100	7	1.8%
	50 to 75	71	18.7%
	25 to 50	128	33.7%
	5 to 25	124	32.6%
	5 or Newer	37	9.7%
Overall		380	100.0%
Excluded		0	
Total		380	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.967	1.003	.061	11.1%
75 to 100	1.000	.994	.050	7.6%
50 to 75	.980	1.050	.102	17.0%
25 to 50	.972	1.026	.110	16.8%
5 to 25	.978	1.018	.103	16.0%
5 or Newer	.924	.915	.267	70.4%
Overall	.975	1.020	.118	25.5%

## Improved Area

### Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	4	1.1%
	500 to 1,000 sf	45	11.8%
	1,000 to 1,500 sf	44	11.6%
	1,500 to 2,000 sf	38	10.0%
	2,000 to 3,000 sf	60	15.8%
	3,000 sf or Higher	189	49.7%
Overall		380	100.0%
Excluded		0	
Total		380	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.263	1.000	.162	20.5%
500 to 1,000 sf	.946	.995	.128	20.4%
1,000 to 1,500 sf	.988	1.018	.100	19.5%
1,500 to 2,000 sf	.987	1.031	.098	17.2%
2,000 to 3,000 sf	.967	1.006	.094	14.5%
3,000 sf or Higher	.976	1.022	.126	31.2%
Overall	.975	1.020	.118	25.5%

## Improvement Quality

### Case Processing Summary

		Count	Percent
QUALITY	1	2	0.5%
	2	6	1.6%
	3	319	83.9%
	4	52	13.7%
	5	1	0.3%
Overall		380	100.0%
Excluded		0	
Total		380	

### Ratio Statistics for CURRTOT / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	.989	.985	.027	3.8%
2	.872	.944	.158	18.8%
3	.978	1.029	.109	17.8%
4	.952	.990	.172	54.1%
5	.946	1.000	.000	.
Overall	.975	1.020	.118	25.5%

## Vacant Land Median Ratio Stratification

### Sale Price

#### Case Processing Summary

		Count	Percent
SPRec	LT \$25K	3	0.7%
	\$25K to \$50K	18	4.3%
	\$50K to \$100K	51	12.1%
	\$100K to \$150K	90	21.4%
	\$150K to \$200K	61	14.5%
	\$200K to \$300K	79	18.8%
	\$300K to \$500K	80	19.0%
	\$500K to \$750K	14	3.3%
	\$750K to \$1,000K	10	2.4%
	Over \$1,000K	15	3.6%
Overall		421	100.0%
Excluded		0	
Total		421	

#### Ratio Statistics for CURRLND / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	1.173	1.015	.205	31.1%
\$25K to \$50K	1.100	1.000	.220	30.0%
\$50K to \$100K	1.049	.991	.185	25.2%
\$100K to \$150K	1.012	1.000	.233	32.7%
\$150K to \$200K	.981	1.003	.195	28.8%
\$200K to \$300K	.974	1.000	.156	22.9%
\$300K to \$500K	.947	.999	.132	19.3%
\$500K to \$750K	.880	.990	.221	28.6%
\$750K to \$1,000K	1.015	.994	.214	30.0%
Over \$1,000K	1.010	.922	.217	36.7%
Overall	.982	1.012	.193	28.2%

### Subclass

#### Case Processing Summary

		Count	Percent
ABSTRLND	100	178	42.3%
	200	31	7.4%
	300	3	0.7%
	510	6	1.4%
	520	9	2.1%
	530	8	1.9%
	540	11	2.6%
	550	13	3.1%
	560	1	0.2%
	1112	143	34.0%
	1125	4	1.0%
	1619	1	0.2%
	2112	1	0.2%
	2130	6	1.4%
	2135	5	1.2%

	3115	1	0.2%
Overall		421	100.0%
Excluded		0	
Total		421	

**Ratio Statistics for CURRLND / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	.986	1.071	.197	26.8%
200	1.011	1.102	.180	27.8%
300	.942	.996	.031	6.3%
510	.929	1.027	.110	15.3%
520	1.013	1.041	.198	37.9%
530	.955	1.033	.101	14.6%
540	.998	1.043	.195	35.7%
550	1.375	1.121	.219	26.7%
560	1.074	1.000	.000	.
1112	.971	1.044	.182	28.2%
1125	1.155	1.015	.183	29.4%
1619	1.493	1.000	.000	.
2112	1.004	1.000	.000	.
2130	1.044	.982	.057	8.2%
2135	1.000	1.045	.246	40.7%
3115	.945	1.000	.000	.
Overall	.982	1.012	.193	28.2%