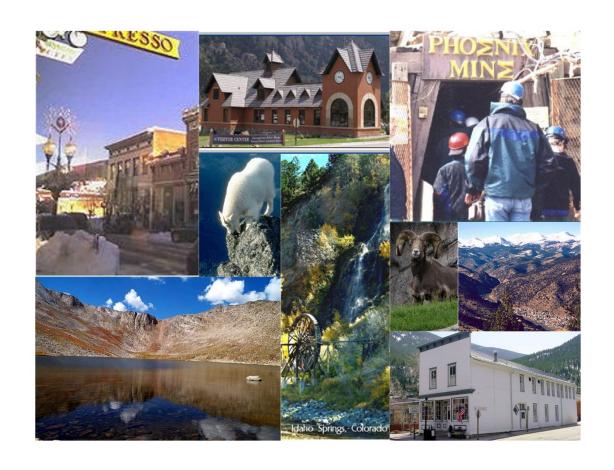


# CLEAR CREEK COUNTY PROPERTY ASSESSMENT STUDY







September 15, 2020

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

RE: Final Report for the 2020 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2020 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.

Harry J. Fuller Project Manager

Harry J. Dulla

Wildrose Appraisal Inc. - Audit Division



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# INTRODUCTION



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 subdivision discounting procedures. Valuation methodology for vacant land, improved residential properties commercial and 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.

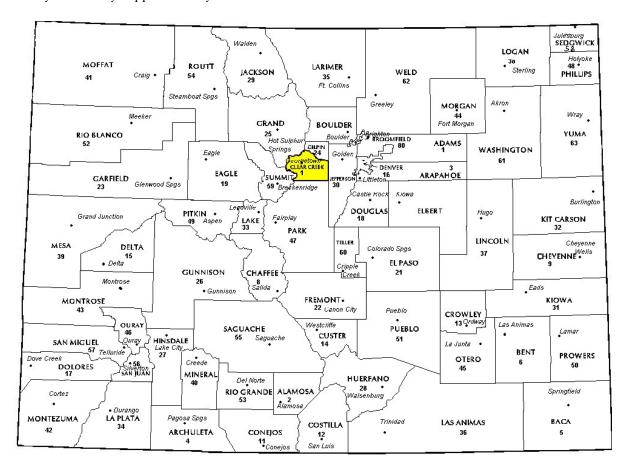
Wildrose Audit has completed the Property Assessment Study for 2020 and is pleased to report its findings for Clear Creek County in the following report.



# 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 23.8 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 hardrock mining, using the hydro-energy from the creek to help with milling operations. Miners continued to venture west, and in 1864 silver discovered in Georgetown. 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 & peaktopeak.com)



# RATIO ANALYSIS

# Methodology

All significant classes of properties were Sales were collected for each analyzed. property class over the appropriate sale period, which was typically defined as the 18-month period between January 1, 2017 and June 30, 2018. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2018 in 6-month increments. If there were still fewer than 30 sales, supplemental appraisals were performed and treated as proxy sales. Residential sales for all counties using this method totaled at least 30 per county. For commercial sales, the total number analyzed was allowed, in some cases, to fall below 30. There were no sale quantity issues for counties requiring vacant land analysis or condominium analysis. Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and pricerelated 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:

Clear Creek County Ratio Grid						
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis	
Commercial/Industrial	30	1.001	0.946	12.9	Compliant	
Condominium	N/A	N/A	N/A	N/A	N/A	
Single Family	460	1.002	1.012	10.4	Compliant	
Vacant Land	153	0.986	1.024	14.5	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



# 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



# 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. 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. 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 nonparametric 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.



Sold/Unsold R	lesults
Property Class	Results
Commercial/Industrial	Compliant
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

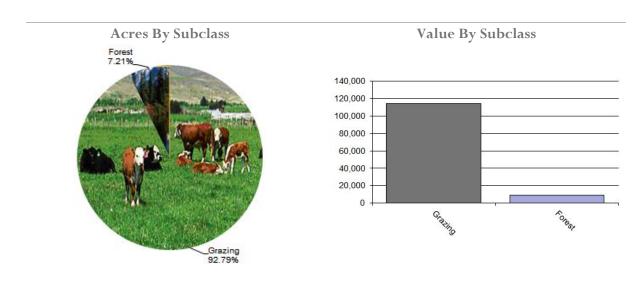
# **Conclusions**

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



# AGRICULTURAL LAND STUDY



# Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other In addition, county records were reviewed in order to determine if: 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 locally developed yields, 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						
	Number County County WRA						
Abstract		Of	Value	Assessed	Total		
Code	Land Class	Acres	Per Acre T	Total Value	Value	Ratio	
4147	Grazing	13,869	8.25	114,442	114,442	1.00	
4177	Forest	1,078	8.25	8,895	8,895	1.00	
Total/Avg		14,947	8.25	123,337	123,337	1.00	

#### 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**

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

Property Taxation for the valuation of agricultural outbuildings.

#### Recommendations



# **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.:

• Field Inspections

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.:

- Property Record Card Analysis
- Field Inspections
- Personal Knowledge of Occupants at Assessment Date

Clear Creek County has 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



# 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 2020 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 two of the sales selected in the sample gave reasons that were clear and supportable. Two 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.

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.

#### **Conclusions**

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

#### Recommendations



# 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



# 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



# VACANT LAND

#### **Subdivision Discounting**

Subdivisions were reviewed in 2020 in Clear Creek 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.

In instances where the number of sales within an approved plat was less than the absorption

rate per year calculated for the plat, the absorption period was left unchanged.

#### Conclusions

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

#### Recommendations



# 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 C.R.S. Chapter 39-1-103 (17)(a)(II)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 under lease, permit, concession, contract, or other agreement.

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



# 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 of Equalization Board (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 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
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

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 2020 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
- Non-filing Accounts Best Information Available
- Accounts close to the \$7,700 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



# 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



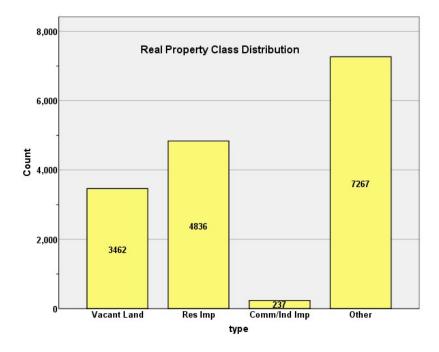
# APPENDICES



#### STATISTICAL COMPLIANCE REPORT FOR CLEAR CREEK COUNTY 2020

#### I. OVERVIEW

Clear Creek County is located in central Colorado. The county has a total of 15,802 real property parcels, according to data submitted by the county assessor's office in 2020. 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 62.5% 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 1.5% 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:



Geo Area	Residential	Comm/Ind	Vacant Land
Economic Area	N	V	N
Neighborhood	V	N	V
Subdivision	N	N	N

Codes

V=Valid Geographic Level – used for modeling

N = Not used as Geographic Level for modeling

The assessor uses appraisal districts for geographic stratification analysis when valuing residential properties. They do not use economic area and neighborhood variables, which were missing in the extract file for Clear Creek County. Given that appraisal district is a county-specific variable and is not part of the extract file, we stratified the residential sales analysis by subdivision.

#### II. DATA FILES

The following sales analyses were based on the requirements of the 2020 Colorado Property Assessment Study. Information was provided by the Clear Creek Assessor's Office in May 2020. The data included all 5 property record files as specified by the Auditor.

#### III. RESIDENTIAL SALES RESULTS

There were 460 qualified residential sales for the 24-month sale period ending June 30, 2018. The sales ratio analysis was analyzed as follows:

Median	1.002
Price Related Differential	1.012
Coefficient of Dispersion	10.4

We next stratified the sale ratio analysis by subdivisions with at least 15 sales. The following are the results of this stratification analysis:

#### Case Processing Summary

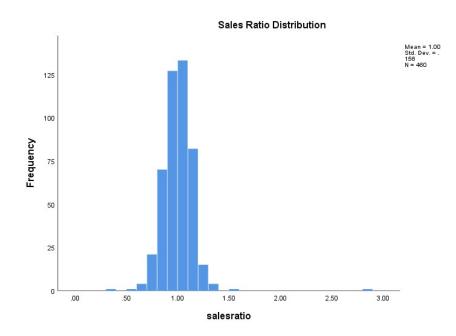
		Count	Percent
SUBDIVNO	190	25	12.5%
	320	23	11.5%
	360	34	17.0%
	450	19	9.5%
	470	38	19.0%
	540	17	8.5%
	650	16	8.0%
	670	28	14.0%
Overall		200	100.0%
Excluded		84	
Total		284	



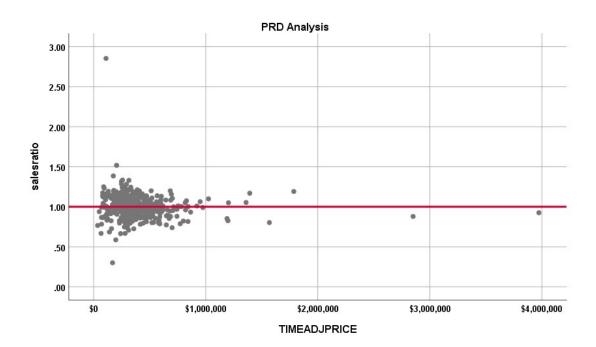
#### **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion
190	.994	.994	.156
320	1.000	1.015	.102
360	.993	1.019	.102
450	1.017	1.008	.075
470	.990	1.036	.147
540	1.031	1.016	.079
650	.976	1.019	.077
670	1.006	1.007	.059
Overall	.999	1.017	.106

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**

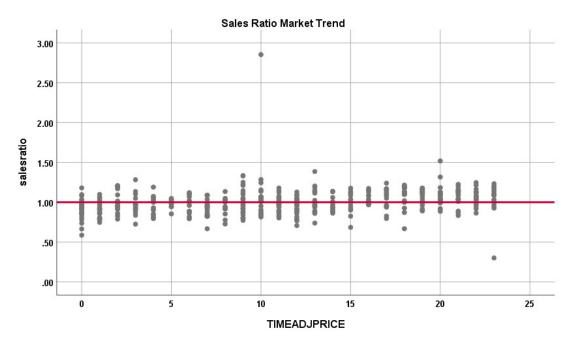
We next analyzed the residential dataset using the 24-month sale period for any residual market trending, with the following results:

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

		Unstandardized		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.932	.013		70.018	.000
	SalePeriod	.006	.001	.280	6.233	.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 slightly less so with the 18-month sale period. While we are passing the county on this test, the assessor needs to address market trending in the residential sale data and has been advised of this issue.

#### **Sold/Unsold Analysis**

In terms of the valuation consistency between sold and unsold residential properties, we compared the median and mean change in actual value from taxable years 2018 and 2020 between sold and unsold residential properties, as follows:

Report DIFF			
sold	N	Median	Mean
UNSOLD	4246	1.2005	1.2322
SOLD	449	1.2283	1.2594

# 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	.005	Retain the null hypothesis.

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

We next stratified this analysis for subdivisions with at least 10 sales, as follows:



#### Report

DIFF

SUBDIVNO	sold	N	Median	Mean
160	UNSOLD	103	1.1475	1.1730
	SOLD	12	1.1601	1.1067
190	UNSOLD	166	1.2060	1.2205
	SOLD	25	1.2441	1.2133
320	UNSOLD	230	1.1182	1.1258
	SOLD	23	1.1206	1.1073
360	UNSOLD	273	1.2520	1.2750
	SOLD	34	1.2677	1.3091
450	UNSOLD	223	1.1104	1.1116
	SOLD	19	1.1237	1.1402
470	UNSOLD	357	1.3183	1.3363
	SOLD	37	1.3177	1.3447
540	UNSOLD	122	1.1585	1.1668
	SOLD	17	1.2246	1.2142
560	UNSOLD	30	1.2673	1.2825
	SOLD	10	1.3432	1.3825
650	UNSOLD	111	1.1053	1.1013
	SOLD	16	1.1205	1.1093
670	UNSOLD	130	1.2399	1.2568
	SOLD	28	1.2430	1.2613
710	UNSOLD	110	1.1299	1.1948
	SOLD	10	1.2558	1.2655

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

#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

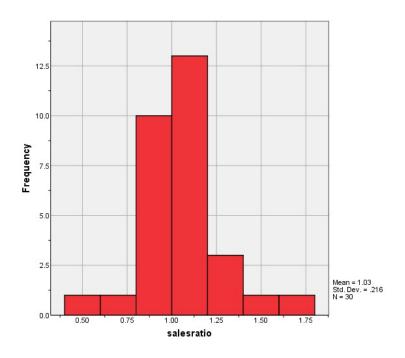
There were 30 qualified commercial and industrial sales for the 60 month sale period ending June 30, 2018.

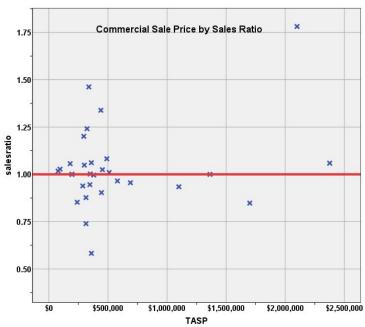
The sales ratio analysis results were as follows:

Median	1.001
Price Related Differential	0.946
Coefficient of Dispersion	12.9

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**

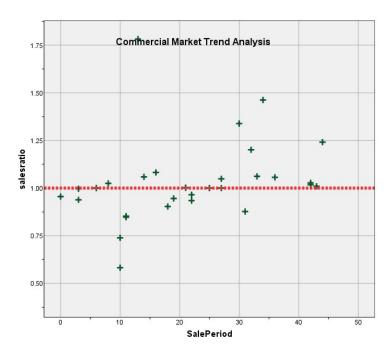
The commercial/industrial sales were analyzed, examining the sale ratios across a 60-month sale period with the following results:



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

		Unstandardized	Coefficients	Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.928	.076		12.197	.000
	SalePeriod	.005	.003	.287	1.586	.124

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 2018 and 2020 between sold and unsold commercial properties to determine if the assessor was valuing each group consistently, as follows

Report DIFF				
sold	N	Median	Mean	
UNSOLD	189	1.1001	1.1452	_
SOLD	27	1 1585	1 2249	_



### **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	.142	Retain the null hypothesis.

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

We also stratified this analysis by subclass, with the following results:

Report DIFF				
<b>ABSTRIMP</b>	sold	N	Median	Mean
2212.00	UNSOLD	55	1.0548	1.1314
	SOLD	14	1.1394	1.1940
2215.00	UNSOLD	12	1.1875	1.2389
	SOLD	4	1.3406	1.3522
	Total	16	1.1875	1.2673
2220.00	UNSOLD	8	1.1525	1.2087
	SOLD	2	1.4942	1.4942
2230.00	UNSOLD	79	1.0725	1.1231
	SOLD	5	1.0000	1.0446

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

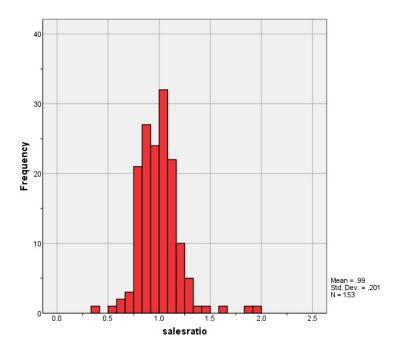
#### V. VACANT LAND SALE RESULTS

There were 155 qualified vacant land sales for the 24-month sale period ending June 30, 2018. Two sales were trimmed using IAAO standards, resulting in a final count of 153 qualified residential sales. The sales ratio analysis results were as follows:

Median	0.986
Price Related Differential	1.024
Coefficient of Dispersion	14.5

The above table indicates 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**

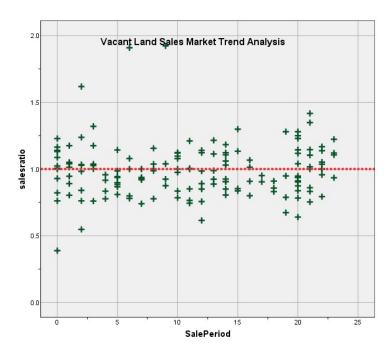
We analyzed the sales ratios for vacant land sales, based on the time adjusted sale price (TASP) and the actual land value to determine if there was any residual time trending in the vacant land valuations. The vacant land sales were analyzed, examining the sales ratios across the 24 month sale period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



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

		Unstandardized	Coefficients	Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.980	.030		33.053	.000
	SalePeriod	.001	.002	.036	.439	.661

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 2018 and 2020 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

Report DIFF			
sold	N	Median	Mean
UNSOLD	2758	1.0000	1.0905
SOLD	123	1.0000	1.0977



# 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	.840	Retain the null hypothesis.

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

We stratified this analysis by subdivisions with at least 5 sales, as follows:

Report DIFF				
SUBDIVNO	sold	N	Median	Mean
190	UNSOLD	44	1.0000	1.0145
	SOLD	5	1.0000	1.1508
530	UNSOLD	67	1.1592	1.1789
	SOLD	6	1.0609	1.0727
540	UNSOLD	26	1.0000	1.0000
	SOLD	7	1.1565	1.1381
650	UNSOLD	21	1.0000	1.0099
	SOLD	6	1.0000	.9714
670	UNSOLD	512	1.0793	1.1160
	SOLD	34	1.0970	1.1283
790	UNSOLD	219	1.0000	1.0766
	SOLD	19	.9498	.9455

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

#### V. CONCLUSION

Based on this statistical analysis, there were no significant compliance issues concluded for Clear Creek County as of the date of this report. As noted, the assessor has been advised of the market trend issue regarding residential sales.



#### STATISTICAL ABSTRACT Residential

#### Ratio Statistics for CURRTOT / TASP

	95% Confiden Me			95% Confidence Interval for Median		95% Confidence Interval for Weighted Mean				Coefficient of Variation		
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.002	.988	1.017	1.002	.990	1.010	95.5%	.991	.978	1.004	1.012	104	15.6%

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

	95% Confiden Me			95% Con	fidence Interval fo	or Median		95% Confiden Weighte	ce Interval for ed Mean			Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.032	.951	1.112	1.001	.956	1.049	95.7%	1.091	.902	1.280	.946	.129	20.9%

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

	95% Confiden Me			95% Confidence Interval for Median				95% Confiden Weighte	ce Interval for d Mean			Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
.991	.959	1.023	.986	.937	1.004	96.5%	.967	.916	1.018	1.024	.145	20.3%

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.



# **Residential Median Ratio Stratification**

#### **Sale Price**

# **Case Processing Summary**

		Count	Percent
SPRec	\$25K to \$50K	2	0.4%
	\$50K to \$100K	15	3.3%
	\$100K to \$150K	21	4.6%
	\$150K to \$200K	33	7.2%
	\$200K to \$300K	133	28.9%
	\$300K to \$500K	164	35.7%
	\$500K to \$750K	68	14.8%
	\$750K to \$1,000K	14	3.0%
	Over \$1,000K	10	2.2%
Overall		460	100.0%
Excluded		0	
Total		460	

#### **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	.853	.983	.101	14.3%
\$50K to \$100K	1.000	.989	.136	17.0%
\$100K to \$150K	.997	1.006	.198	43.8%
\$150K to \$200K	1.012	.998	.117	18.9%
\$200K to \$300K	1.027	1.003	.102	13.4%
\$300K to \$500K	.986	1.001	.094	11.5%
\$500K to \$750K	.965	1.000	.085	10.7%
\$750K to \$1,000K	1.002	.998	.065	10.0%
Over \$1,000K	.988	1.015	.129	14.7%
Overall	1.002	1.012	.104	15.6%

#### **Subclass**

# **Case Processing Summary**

		Count	Percent
ABSTRIMP	1212.00	423	92.0%
	1225.00	1	0.2%
	1230.00	36	7.8%
Overall		460	100.0%
Excluded		0	
Total		460	



# **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	1.003	1.011	.105	15.8%
1225.00	.926	1.000	.000	
1230.00	.990	1.009	.099	13.2%
Overall	1.002	1.012	.104	15.6%

# Age

# **Case Processing Summary**

		Count	Percent
AgeRec	Over 100	72	15.7%
	75 to 100	12	2.6%
	50 to 75	55	12.0%
	25 to 50	203	44.1%
	5 to 25	114	24.8%
	5 or Newer	4	0.9%
Overall		460	100.0%
Excluded		0	
Total		460	

#### **Ratio Statistics for CURRTOT / TASP**

		Price Related	Coefficient of	Coefficient of Variation
Group	Median	Differential	Dispersion	Median Centered
Over 100	.979	1.031	.130	26.2%
75 to 100	.893	1.010	.101	14.7%
50 to 75	.997	.996	.146	19.1%
25 to 50	1.010	1.009	.091	12.0%
5 to 25	1.004	1.009	.087	10.6%
5 or Newer	.864	1.031	.044	6.3%
Overall	1.002	1.012	.104	15.6%

# Improved Area

# **Case Processing Summary**

		Count	Percent
ImpSFRec	.00	1	0.2%
	LE 500 sf	7	1.5%
	500 to 1,000 sf	106	23.0%
	1,000 to 1,500 sf	162	35.2%
	1,500 to 2,000 sf	85	18.5%
	2,000 to 3,000 sf	78	17.0%
	3,000 sf or Higher	21	4.6%
Overall		460	100.0%
Excluded		0	
Total		460	



# **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.926	1.000	.000	
LE 500 sf	.767	1.076	.155	26.6%
500 to 1,000 sf	.998	1.012	.105	13.3%
1,000 to 1,500 sf	1.003	1.008	.098	12.8%
1,500 to 2,000 sf	1.003	1.021	.098	12.0%
2,000 to 3,000 sf	1.002	1.027	.116	24.1%
3,000 sf or Higher	1.018	1.011	.063	8.4%
Overall	1.002	1.012	.104	15.6%

# **Improvement Quality**

# **Case Processing Summary**

		Count	Percent
QUALITY		1	0.2%
	1 - POOR QUALITY	2	0.4%
	2 - FAIR QUALITY	14	3.0%
	3 - AVERAGE QUALITY	162	35.2%
	4 - GOOD QUALITY	15	3.3%
	5 - VERY GOOD QUALITY	7	1.5%
	AVERAGE QUALITY	220	47.8%
	FAIR QUALITY	23	5.0%
	GOOD QUALITY	15	3.3%
	POOR QUALITY	1	0.2%
Overall		460	100.0%
Excluded		0	
Total		460	

#### **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Огоар	.926	1.000	.000	Mcdiair Ochtered
			111	·
1 - POOR QUALITY	.829	1.122	.198	28.0%
2 - FAIR QUALITY	.992	.990	.117	21.8%
3 - AVERAGE QUALITY	1.003	1.010	.095	12.3%
4 - GOOD QUALITY	1.000	1.008	.067	9.6%
5 - VERY GOOD QUALITY	1.050	1.016	.098	13.8%
AVERAGE QUALITY	1.004	1.017	.108	17.4%
FAIR QUALITY	.936	.986	.127	15.4%
GOOD QUALITY	.963	.975	.103	14.8%
POOR QUALITY	1.385	1.000	.000	
Overall	1.002	1.012	.104	15.6%



# **Improvement Condition**

# **Case Processing Summary**

		Count	Percent
CONDITION		404	87.8%
	1 - POOR CONDITION	1	0.2%
	2 - FAIR CONDITION	5	1.1%
	3 - AVERAGE CONDITION	38	8.3%
	4 - GOOD CONDITION	11	2.4%
	AVERAGE	1	0.2%
Overall		460	100.0%
Excluded		0	
Total		460	

#### **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Cioup	1.002	1.011	.104	15.9%
1 - POOR CONDITION	.665	1.000	.000	
2 - FAIR CONDITION	1.064	1.039	.113	15.1%
3 - AVERAGE CONDITION	1.000	.999	.089	12.3%
4 - GOOD CONDITION	1.048	1.028	.101	12.5%
AVERAGE	.926	1.000	.000	
Overall	1.002	1.012	.104	15.6%

# **Commercial Median Ratio Stratification**

#### Sale Price

# **Case Processing Summary**

		Count	Percent
SPRec	\$50K to \$100K	2	6.7%
	\$150K to \$200K	3	10.0%
	\$200K to \$300K	4	13.3%
	\$300K to \$500K	13	43.3%
	\$500K to \$750K	3	10.0%
	Over \$1,000K	5	16.7%
Overall		30	100.0%
Excluded		0	
Total		30	



# **Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$50K to \$100K	1.022	1.000	.005	0.7%
\$150K to \$200K	1.000	1.001	.019	4.0%
\$200K to \$300K	.994	.992	.115	15.3%
\$300K to \$500K	1.002	.995	.166	23.5%
\$500K to \$750K	.965	1.003	.019	3.3%
Over \$1,000K	1.000	.963	.212	40.0%
Overall	1.001	.946	.129	21.8%

#### **Subclass**

# **Case Processing Summary**

		Count	Percent
ABSTRIMP	1212.00	1	3.3%
	1225.00	1	3.3%
	2212.00	14	46.7%
	2215.00	4	13.3%
	2220.00	2	6.7%
	2230.00	5	16.7%
	2235.00	1	3.3%
	2245.00	2	6.7%
Overall		30	100.0%
Excluded		0	
Total		30	

#### **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	
1225.00	1.339	1.000	.000	
2212.00	1.001	1.006	.068	10.6%
2215.00	.997	1.083	.185	28.8%
2220.00	.803	.969	.275	38.9%
2230.00	1.000	1.006	.057	7.4%
2235.00	1.781	1.000	.000	
2245.00	.839	1.005	.119	16.8%
Overall	1.001	.946	.129	21.8%



# Age

# **Case Processing Summary**

		Count	Percent
AgeRec	Over 100	13	43.3%
	75 to 100	2	6.7%
	50 to 75	7	23.3%
	25 to 50	4	13.3%
	5 to 25	3	10.0%
	5 or Newer	1	3.3%
Overall		30	100.0%
Excluded		0	
Total		30	

#### **Ratio Statistics for CURRTOT / TASP**

		Dries Deleted	Operfficient of	Coefficient of
		Price Related	Coefficient of	Variation
Group	Median	Differential	Dispersion	Median Centered
Over 100	1.000	1.000	.082	11.6%
75 to 100	.902	1.026	.060	8.5%
50 to 75	1.025	1.021	.183	28.0%
25 to 50	1.034	.986	.035	4.6%
5 to 25	.939	.734	.370	65.2%
5 or Newer	1.000	1.000	.000	
Overall	1.001	.946	.129	21.8%

# **Improvement Condition**

# **Case Processing Summary**

		Count	Percent
CONDITION		1	3.3%
	AVERAGE	13	43.3%
	FAIR	7	23.3%
	GOOD	6	20.0%
	POOR	2	6.7%
	VERY GOOD	1	3.3%
Overall		30	100.0%
Excluded		0	
Total		30	

#### **Ratio Statistics for CURRTOT / TASP**

i tatio otatio		011110171710	, .	
Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	1.462	1.000	.000	
AVERAGE	1.000	.874	.156	27.5%
FAIR	.965	.975	.127	19.4%
GOOD	1.024	1.022	.074	10.1%
POOR	1.022	1.000	.005	0.7%
VERY GOOD	1.000	1.000	.000	
Overall	1.001	.946	.129	21.8%



# **Vacant Land Median Ratio Stratification**

#### **Sale Price**

# **Case Processing Summary**

		Count	Percent
SPRec	LT \$25K	95	62.1%
	\$25K to \$50K	21	13.7%
	\$50K to \$100K	24	15.7%
	\$100K to \$150K	3	2.0%
	\$150K to \$200K	6	3.9%
	\$200K to \$300K	3	2.0%
	\$300K to \$500K	1	0.7%
Overall		153	100.0%
Excluded		0	
Total		153	

# **Ratio Statistics for CURRLND / TASP**

				Coefficient of
		Price Related	Coefficient of	Variation
Group	Median	Differential	Dispersion	Median Centered
LT \$25K	1.000	1.001	.156	20.9%
\$25K to \$50K	.948	.995	.098	12.5%
\$50K to \$100K	.988	1.008	.149	26.0%
\$100K to \$150K	.924	.997	.050	9.7%
\$150K to \$200K	.979	.996	.085	12.2%
\$200K to \$300K	.939	.987	.128	22.5%
\$300K to \$500K	.762	1.000	.000	
Overall	.986	1.024	.145	20.4%

#### **Subclass**

# **Case Processing Summary**

		Count	Percent
ABSTRLND	100.00	103	67.3%
	520.00	18	11.8%
	530.00	9	5.9%
	540.00	1	0.7%
	550.00	8	5.2%
	560.00	1	0.7%
	1112.00	12	7.8%
	1135.00	1	0.7%
Overall		153	100.0%
Excluded		0	
Total		153	



# Ratio Statistics for CURRLND / TASP

		Price Related	Coefficient of	Coefficient of Variation
Group	Median	Differential	Dispersion	Median Centered
100.00	.975	1.022	.142	18.3%
520.00	.995	1.061	.121	14.9%
530.00	.947	1.001	.072	9.9%
540.00	.924	1.000	.000	
550.00	.992	1.058	.084	11.4%
560.00	1.040	1.000	.000	
1112.00	1.058	.974	.238	33.5%
1135.00	1.909	1.000	.000	
Overall	.986	1.024	.145	20.4%