2019
EL PASO COUNTY PROPERTY ASSESSMENT STUDY

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.

Harry J. Fuller

Harry J. Fuller
Project Manager
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 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 El Paso County in the following report.

REGIONAL/HISTORICAL SKETCH OF EL PASO COUNTY

Regional Information

El Paso 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

El Paso County had an estimated population of approximately 688,284 people with 323.6 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 10.6 percent change from April 1, 2010 to July 1, 2016.

In July 1858, gold was discovered along the South Platte River in Arapahoe County, Kansas Territory. 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 Oct 24, 1859. The following month, the Jefferson Territorial Legislature organized 12 counties for the new territory including El Paso County. El Paso County was named for the Spanish language name for Ute Pass north of Pikes Peak. Colorado City served as the county seat of El Paso County.

The Jefferson Territory never received federal sanction, but on Feb. 2, 1861, U.S. President James Buchanan signed an act organizing the Territory of Colorado. El Paso County was one of the original 17 counties created by the Colorado legislature on November 1, 1861. Part of its western territory was broken off to create Teller County in 1899. Originally based in Old Colorado City (now part of Colorado Springs, not today's Colorado City between Pueblo and Walsenburg), El Paso County's county seat was moved to Colorado Springs in 1873.

Colorado Springs was founded in August 1871 by General William Palmer, with the intention of creating a high quality resort community, and was soon nicknamed "Little London" because of the many English tourists who came. Nearby Pikes Peak and the Garden of the Gods made the city's location a natural choice. Colorado Springs covers 194.7 square miles, making it the most extensive municipality in Colorado. Colorado Springs was selected as the No. 1 Best Big City in "Best Places to Live" by Money magazine in 2006 and placed number one in Outside's 2009 list of America's Best Cities. The United States Air Force Academy is located in Colorado Springs.(*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 El Paso County are:

<table>
<tr><th colspan="6">El Paso County Ratio Grid</th></tr>
<tr>
<th>Property Class</th>
<th>Number of Qualified Sales</th>
<th>Unweighted Median Ratio</th>
<th>Price Related Differential</th>
<th>Coefficient of Dispersion</th>
<th>Time Trend Analysis</th>
</tr>
<tr><td>Commercial/Industrial</td><td>389</td><td>0.950</td><td>1.085</td><td>17.3</td><td>Compliant</td></tr>
<tr><td>Condominium</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Single Family</td><td>36,948</td><td>0.969</td><td>1.007</td><td>5.9</td><td>Compliant</td></tr>
<tr><td>Vacant Land</td><td>1,349</td><td>0.987</td><td>1.024</td><td>9.1</td><td>Compliant</td></tr>
</table>

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

El Paso 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.

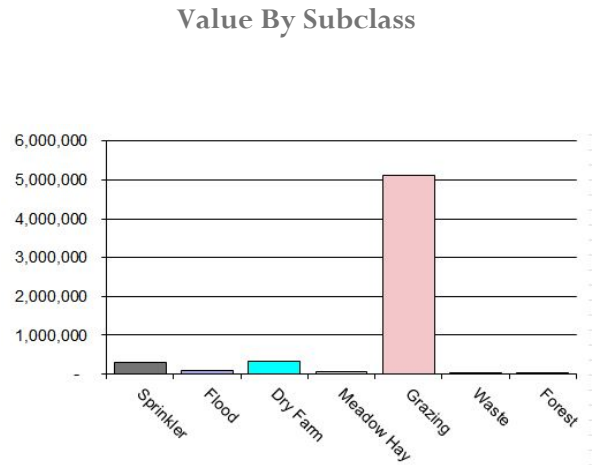| Sold/Unsold Results	
Property Class	**Results**
Commercial/Industrial	Compliant
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

Conclusions

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

Recommendations

None

AGRICULTURAL LAND STUDY

Acres By Subclass	Value By Subclass

Sprinkler	1.04%
Waste	0.16%
Forest	0.40%
Flood	0.28%
Dry Farm	5.20%
Meadow Hay	0.36%
Grazing	92.57%
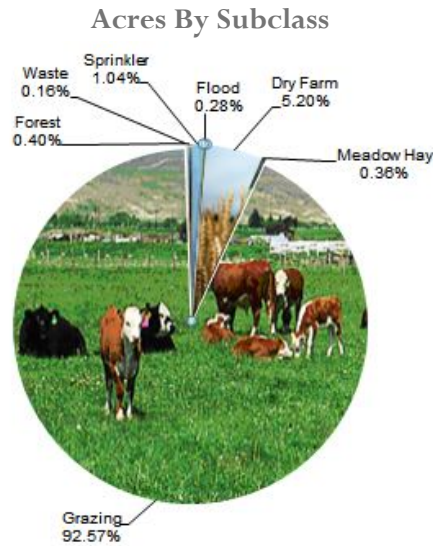
Agricultural Land

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:

El Paso County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4107	Sprinkler	5,722	55.01	314,758	319,316	0.99
4117	Flood	1,518	57.49	87,266	88,281	0.99
4127	Dry Farm	28,660	11.28	323,192	328,897	0.98
4137	Meadow Hay	1,980	30.69	60,766	60,766	1.00
4147	Grazing	510,650	10.04	5,125,557	5,125,557	1.00
4177	Forest	2,224	12.59	28,002	28,002	1.00
4167	Waste	887	2.39	2,116	2,116	1.00
Total/Avg		551,641	10.77	5,941,657	5,952,935	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

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

Recommendations

None

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

El Paso 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
- Phone Interviews
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

El Paso 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.:

- Aerial Photography/Pictometry

El Paso 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 El Paso County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 61 sales listed as unqualified.

All of the sales in the unqualified sales sample had reasons that were clear and supportable.

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.

El Paso County did not qualify for in-depth subclass analysis.

Conclusions

El Paso County appears to be doing a good job of verifying their sales. WRA agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

El Paso County has submitted a written narrative describing the economic areas that make up the county's market areas. El Paso 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 El Paso County has adequately identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

Recommendations

None

NATURAL RESOURCES

Earth and Stone Products

Methodology

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

Conclusions

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

Recommendations

None

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Subdivision Discounting

Subdivisions were reviewed in 2019 in El Paso 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

El Paso 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.

El Paso 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

El Paso 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

El Paso 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.

El Paso 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
- MLS Listing and/or Sold Books
- Chamber of Commerce/Economic Development Contacts
- 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
- CO Secretary of State
- Business Filing
- Volunteer Filing

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.

El Paso 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:

- Businesses in a selected area
- Accounts with obvious discrepancies
- New businesses filing for the first time
- Accounts with greater than 10% change

- Incomplete or inconsistent declarations
- Accounts with omitted property
- Same business type or use
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- Accounts close to the $7,700 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement

El Paso 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

El Paso 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*

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STATISTICAL APPENDIX

WILDROSE
APPRAISAL, INCORPORATED

STATISTICAL COMPLIANCE REPORT
FOR EL PASO COUNTY
2019

I. OVERVIEW

El Paso County is an urban county located along Colorado's Front Range. The county has a total of 251,504 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:
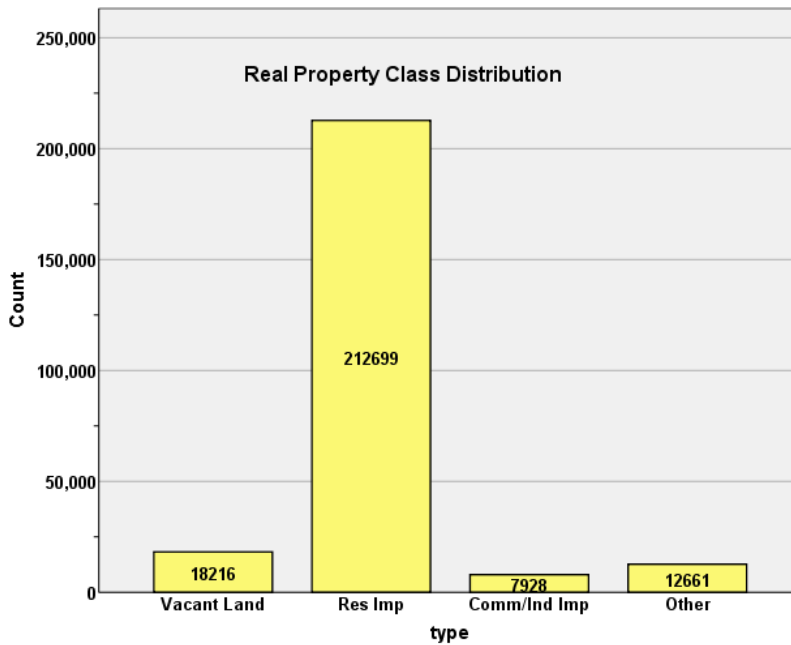
The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1112) accounted for 75.3% of all vacant land parcels.

For residential improved properties, single family properties accounted for 94.0% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3.15% of all such properties in this county.

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

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

Codes

V=Valid Geographic Level – used for modeling

N = Not used as Geographic Level for modeling

Note: Multiple Regression was not used on all Residential areas. Economic areas are divided into neighborhoods for all property types, but these divisions are not used for Comm/ Ind. Residential and vacant land are further divided into Market Areas, which may be similar to Subdivision.

II. DATA FILES

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

III. RESIDENTIAL SALES RESULTS

There were 36,948 qualified residential sales over the 24 month period ending on June 30, 2018. The sales ratio analysis results were as follows:

Median	**0.969**
Price Related Differential	**1.007**
Coefficient of Dispersion	**5.9**

We next stratified the sale ratio analysis by economic area and neighborhood. The minimum count for the neighborhood stratification is 25 sales. The following are the results of this stratification analysis:

Economic Area
Case Processing Summary

		Count	Percent
ECONAREA	1.00	6164	16.7%
	2.00	1205	3.3%
	3.00	648	1.8%
	4.00	3056	8.3%
	5.00	1641	4.4%
	6.00	676	1.8%
	7.00	1296	3.5%
	8.00	850	2.3%
	9.00	788	2.1%
	10.00	856	2.3%
	11.00	1771	4.8%
	12.00	4520	12.2%
	13.00	2116	5.7%
	14.00	3866	10.5%
	15.00	2344	6.3%

	16.00	588	1.6%
	17.00	922	2.5%
	18.00	731	2.0%
	19.00	176	0.5%
	20.00	2734	7.4%
Overall		36948	100.0%
Excluded		0	
Total		36948	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.977	1.002	.039
2.00	.969	.996	.080
3.00	.967	1.017	.112
4.00	.975	1.003	.049
5.00	.967	1.010	.073
6.00	.957	1.007	.096
7.00	.970	1.004	.065
8.00	.960	1.054	.077
9.00	.964	1.003	.070
10.00	.967	1.007	.069
11.00	.960	1.005	.065
12.00	.967	1.001	.052
13.00	.960	1.003	.066
14.00	.967	1.005	.053
15.00	.967	1.006	.061
16.00	.954	1.009	.089
17.00	.968	1.008	.074
18.00	.973	1.010	.072
19.00	.970	1.014	.112
20.00	.967	1.006	.049
Overall	.969	1.007	.059

Neighborhoods with at least 25 sales
Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	.966	1.001	.039
2	.984	1.000	.047
5	.980	1.001	.036
10	.970	1.003	.043
15	.972	1.002	.038
16	.970	1.024	.079
17	.974	1.003	.040
18	.980	1.005	.048
23	.965	1.009	.080
24	.974	1.002	.076
26	.974	1.002	.104
28	.961	1.014	.107
30	.963	1.000	.096
31	.974	1.002	.104
32	.960	1.013	.109
35	.983	1.004	.051
38	.975	1.002	.037

40	.978	1.002	.035
41	.983	1.005	.051
42	.980	1.004	.053
43	.970	1.000	.029
44	.990	1.012	.055
45	.960	1.010	.123
48	.967	1.020	.087
49	.960	1.013	.092
50	.955	1.004	.096
51	.970	1.010	.071
54	.968	1.011	.090
56	.956	1.009	.099
57	.972	1.004	.053
58	.957	1.015	.097
59	**1.005**	**1.118**	**.234**
60	.970	1.004	.057
61	.956	1.006	.074
62	.967	1.006	.065
63	.952	1.005	.081
64	.959	1.001	.050
66	.970	1.003	.059
67	.967	1.003	.057
68	**.945**	**1.005**	**.078**
69	.970	1.004	.052
70	.964	1.002	.083
71	.958	1.004	.069
72	.967	1.005	.054
73	.958	1.007	.072
74	**.946**	**1.010**	**.085**
75	.980	1.006	.082
76	.962	1.004	.068
77	.966	1.003	.057
78	**.945**	**1.002**	**.066**
79	.972	1.003	.043
80	.987	1.000	.034
81	.955	1.027	.137
82	.955	1.005	.074
83	**.922**	**.997**	**.098**
84	.955	1.004	.074
85	.965	1.007	.063
86	.968	1.003	.050
87	.964	1.007	.095
88	.962	1.001	.070
89	.955	1.002	.067
90	.966	1.004	.066
91	.954	1.005	.089
92	.951	1.014	.101
93	.963	1.003	.061
94	.970	1.004	.068
95	.970	1.001	.070
96	.977	1.003	.074
97	.974	1.003	.078
98	.979	1.022	.132
99	.974	1.035	.063
100	.970	1.036	.149
101	.970	.994	.073
103	.971	1.010	.067

104	.970	1.000	.051
105	.960	1.013	.090
106	.964	1.007	.053
107	.952	1.004	.085
211	.982	1.020	.136
213	.972	.984	.126
219	.941	.957	.075
409	.985	1.001	.021
416	**.948**	**1.011**	**.085**
417	.958	1.004	.054
441	.964	1.001	.039
445	.956	1.003	.036
452	.968	1.003	.037
453	.974	1.003	.054
456	.970	1.003	.045
463	.954	1.008	.069
470	.983	1.002	.030
472	**.944**	**1.007**	**.073**
474	.965	1.002	.036
480	.970	1.006	.073
481	.951	1.005	.066
483	.957	1.007	.060
485	.957	1.003	.037
486	**.948**	**1.012**	**.094**
515	**.946**	**.991**	**.080**
526	.964	1.010	.085
529	.993	1.001	.020
546	.950	1.010	.179
547	.976	1.012	.073
548	.954	1.003	.040
553	.968	1.005	.051
566	.962	1.007	.061
570	.956	1.002	.020
589	.959	1.003	.045
605	.956	1.011	.050
631	.962	1.006	.050
635	.965	1.002	.034
653	.971	1.001	.032
672	.959	1.005	.053
676	.968	1.006	.065
677	.978	1.002	.037
685	.973	1.001	.029
712	.962	1.003	.038
718	.964	1.003	.032
723	.976	1.003	.049
727	.959	1.003	.035
729	.961	1.000	.029
730	.975	1.007	.033
731	.959	1.002	.032
734	.974	1.001	.033
742	.975	1.001	.040
743	.968	1.004	.039
747	.995	1.004	.048
751	.972	1.006	.042
754	.978	1.002	.031
756	.965	1.001	.025
757	.984	1.001	.028

759	.959	1.003	.041
771	.972	1.001	.030
778	.972	1.001	.023
780	.968	1.001	.028
784	.982	1.001	.033
786	.982	1.002	.044
787	.990	1.006	.048
789	.972	1.002	.029
797	.990	1.000	.016
798	.952	1.000	.013
957	.960	1.000	.027
Overall	.970	1.006	.060

Out of a total of 142 residential neighborhoods with at least 25 sales, there were 10 neighborhoods with either median sales ratios or CODs out of compliance. Most of these neighborhoods were smaller and most had median sales ratios just below the lower 0.95 SBOE threshold. The assessor was consulted on these outcomes and provided possible reasons for these outliers.

Overall and by economic area, 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 and broken down by economic area. The following graphs describe further the sales ratio distribution for these properties:
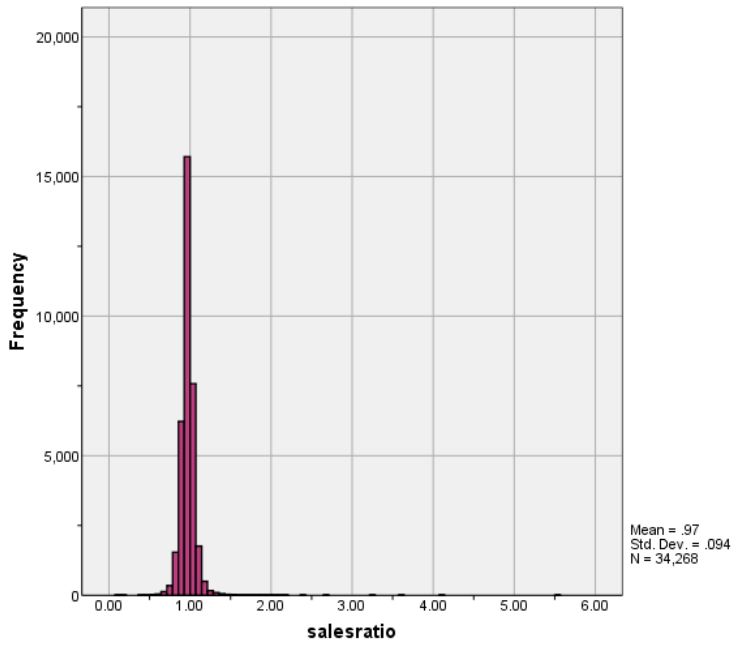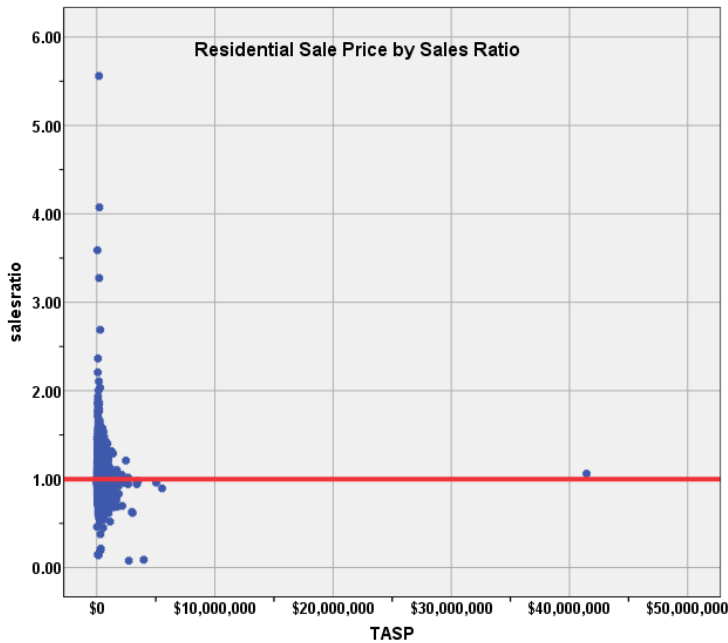
The above graphs indicate that the distribution of the sale ratios was within state mandated limits.

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[a]

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1.00	1	(Constant)	.987	.002		597.782	.000
		SalePeriod	.000	.000	-.035	-2.724	.006
2.00	1	(Constant)	.966	.007		138.014	.000
		SalePeriod	.001	.001	.037	1.135	.256
3.00	1	(Constant)	.976	.012		79.418	.000
		SalePeriod	.000	.001	-.007	-.173	.863
4.00	1	(Constant)	.980	.003		313.822	.000
		SalePeriod	.000	.000	-.012	-.606	.544
5.00	1	(Constant)	.976	.006		170.482	.000
		SalePeriod	.000	.000	-.021	-.789	.430
6.00	1	(Constant)	.941	.010		97.342	.000
		SalePeriod	.001	.001	.062	1.570	.117
7.00	1	(Constant)	.988	.005		200.211	.000
		SalePeriod	-.001	.000	-.084	-2.909	.004
8.00	1	(Constant)	.980	.014		71.819	.000
		SalePeriod	-.001	.001	-.030	-.765	.445
9.00	1	(Constant)	.962	.007		142.250	.000
		SalePeriod	.001	.001	.064	1.699	.090

			B	Std. Error	Beta	t	Sig.
10.00	1	(Constant)	.960	.008		124.593	.000
		SalePeriod	.001	.001	.088	2.235	.026
11.00	1	(Constant)	.954	.005		209.468	.000
		SalePeriod	.001	.000	.070	2.763	.006
12.00	1	(Constant)	.964	.002		477.887	.000
		SalePeriod	.001	.000	.083	5.545	.000
13.00	1	(Constant)	.948	.004		244.630	.000
		SalePeriod	.001	.000	.079	3.477	.001
14.00	1	(Constant)	.970	.002		438.896	.000
		SalePeriod	.000	.000	-.019	-1.109	.267
15.00	1	(Constant)	.964	.003		294.177	.000
		SalePeriod	.001	.000	.048	2.256	.024
16.00	1	(Constant)	.939	.011		82.295	.000
		SalePeriod	.001	.001	.040	.936	.349
17.00	1	(Constant)	.985	.011		90.969	.000
		SalePeriod	-.002	.001	-.064	-1.906	.057
18.00	1	(Constant)	.996	.008		121.042	.000
		SalePeriod	-.002	.001	-.116	-3.145	.002
19.00	1	(Constant)	.984	.028		35.022	.000
		SalePeriod	-.001	.002	-.026	-.339	.735
20.00	1	(Constant)	.971	.002		426.046	.000
		SalePeriod	.000	.000	-.024	-1.271	.204

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for most of the economic areas; those with statistical trends were not significant in terms of magnitude. We therefore 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. This analysis was first performed for the entire class and by economic area, as follows:

Report
VALSF

sold	N	Median	Mean
UNSOLD	175483	$174	$180
SOLD	36939	$175	$185

Report
VALSF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	22818	$155	$157
	SOLD	6162	$162	$168
2.00	UNSOLD	7971	$197	$209
	SOLD	1204	$198	$210
3.00	UNSOLD	4020	$177	$179
	SOLD	647	$182	$190
4.00	UNSOLD	13363	$152	$153
	SOLD	3052	$157	$163

5.00	UNSOLD	11859	$198	$201
	SOLD	1641	$207	$215
6.00	UNSOLD	4906	$223	$224
	SOLD	676	$231	$234
7.00	UNSOLD	9736	$184	$180
	SOLD	1296	$192	$189
8.00	UNSOLD	5932	$186	$196
	SOLD	850	$194	$206
9.00	UNSOLD	5129	$176	$185
	SOLD	788	$176	$183
10.00	UNSOLD	4754	$175	$179
	SOLD	856	$155	$165
11.00	UNSOLD	10821	$169	$173
	SOLD	1771	$166	$173
12.00	UNSOLD	16395	$167	$171
	SOLD	4520	$168	$173
13.00	UNSOLD	12128	$173	$180
	SOLD	2116	$172	$180
14.00	UNSOLD	13817	$181	$192
	SOLD	3866	$185	$198
15.00	UNSOLD	9179	$191	$207
	SOLD	2344	$208	$221
16.00	UNSOLD	2678	$197	$206
	SOLD	588	$218	$229
17.00	UNSOLD	7191	$200	$206
	SOLD	922	$219	$224
18.00	UNSOLD	5659	$121	$131
	SOLD	731	$138	$147
19.00	UNSOLD	1189	$92	$109
	SOLD	175	$126	$128
20.00	UNSOLD	5938	$165	$169
	SOLD	2734	$166	$176

Although the overall comparison indicated consistency in the valuation of sold and unsold properties by economic area, we also examined the percent change in actual value for taxable years 2018 and 2019 for sold and unsold residential properties by class and by economic area:

Report
DIFF

sold	N	Median	Mean
0	172403	1.19	1.20
1	36152	1.19	1.23
Total	208555	1.19	1.21

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	.059	Retain the null hypothesis.

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

Report

DIFF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	22336	1.20	1.21
	SOLD	6047	1.21	1.25
2.00	UNSOLD	7931	1.13	1.14
	SOLD	1205	1.13	1.15
3.00	UNSOLD	4068	1.28	1.28
	SOLD	627	1.28	1.30
4.00	UNSOLD	13351	1.29	1.30
	SOLD	3032	1.36	1.37
5.00	UNSOLD	11759	1.19	1.20
	SOLD	1623	1.18	1.23
6.00	UNSOLD	4906	1.16	1.18
	SOLD	675	1.16	1.19
7.00	UNSOLD	9731	1.24	1.25
	SOLD	1294	1.26	1.29
8.00	UNSOLD	5900	1.15	1.16
	SOLD	843	1.15	1.17
9.00	UNSOLD	5106	1.12	1.14
	SOLD	788	1.12	1.16
10.00	UNSOLD	4749	1.24	1.24
	SOLD	856	1.24	1.25
11.00	UNSOLD	10818	1.19	1.21
	SOLD	1771	1.19	1.23
12.00	UNSOLD	16178	1.22	1.23
	SOLD	4451	1.21	1.22
13.00	UNSOLD	12117	1.19	1.18
	SOLD	2116	1.19	1.19
14.00	UNSOLD	13193	1.20	1.19
	SOLD	3678	1.17	1.18
15.00	UNSOLD	8843	1.12	1.13
	SOLD	2238	1.13	1.15
16.00	UNSOLD	2563	1.18	1.19
	SOLD	549	1.15	1.19
17.00	UNSOLD	6981	1.16	1.18
	SOLD	901	1.16	1.23
18.00	UNSOLD	5590	1.21	1.21
	SOLD	717	1.23	1.28

19.00	UNSOLD	1168	1.16	1.18
	SOLD	166	1.16	1.29
20.00	UNSOLD	5115	1.16	1.19
	SOLD	2575	1.14	1.16

We next stratified this analysis by neighborhoods with at least 25 sales. Out of 138 neighborhoods with at least 25 sales, the following 5 neighborhoods had significant differences between sold and unsold residential properties:

NBHD		N	Median	Mean	Med %d	Mean %d	N	Med V/Sf	Mean V/Sf	Med %d	Mean %d
16	UNSOLD	677	1.21	1.21			652	$147	$145		
	SOLD	109	1.38	1.42	14%	17%	107	$182	$187	24%	29%
18	UNSOLD	331	1.22	1.24			331	$129	$132		
	SOLD	73	1.38	1.40	13%	13%	73	$159	$162	23%	23%
44	UNSOLD	696	1.29	1.28			696	$170	$169		
	SOLD	88	1.43	1.47	12%	15%	88	$196	$199	15%	18%
515	UNSOLD	288	1.26	1.30			221	$106	$102		
	SOLD	33	1.43	1.36	13%	5%	30	$107	$107	0%	6%
957	UNSOLD	152	1.27	1.31			152	$63	$65		
	SOLD	44	1.61	1.58	27%	20%	44	$88	$91	40%	39%

The above results by class and by economic area indicate that sold and unsold residential properties were valued in a consistent manner overall. We consulted with the assessor regarding the 5 neighborhoods with significant differences between sold and unsold residential properties.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 390 qualified commercial/industrial sales over the 24 month period ending June 30, 2018. We trimmed 1 sale using IAAO standards, resulting in a final count of 389 qualified commercial sales. The sales ratio analysis results were as follows:

Median	**0.950**
Price Related Differential	**1.085**
Coefficient of Dispersion	**17.3**

The above table indicates that the El Paso County commercial/industrial sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:
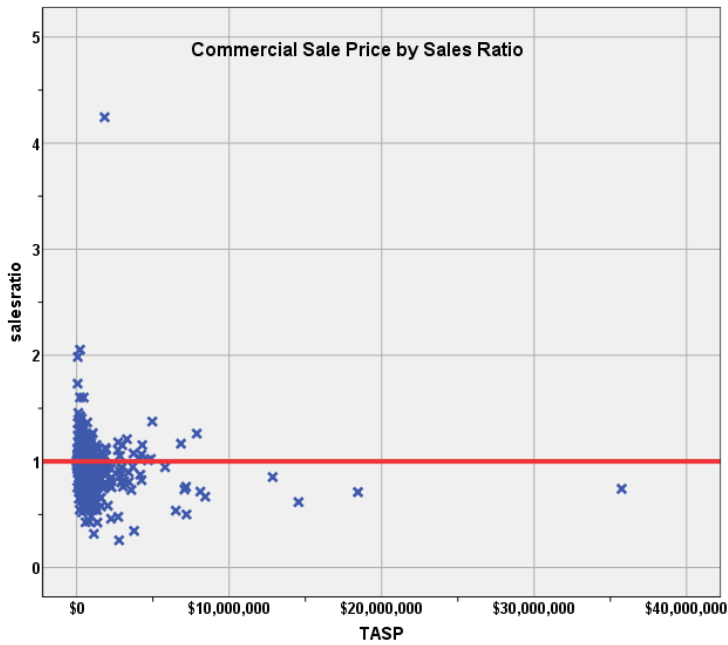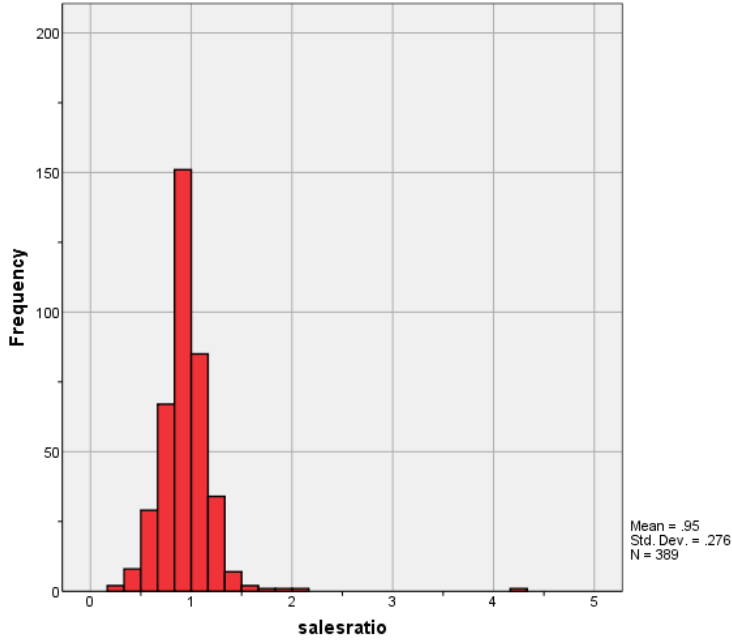
Commercial/Industrial Market Trend Analysis

The commercial/industrial sales were analyzed, examining the sale ratios across the 24 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.951	.028		34.348	.000
	SalePeriod	.000	.002	-.004	-.075	.940

a. Dependent Variable: salesratio
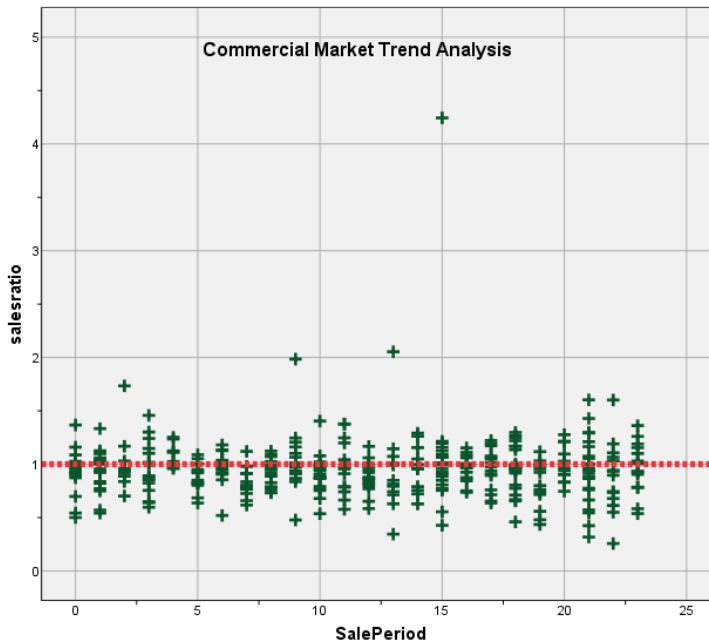
There was no residual market trending present in the commercial sale ratios. We concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the 2019 actual value per square foot between sold and unsold commercial/industrial properties to determine if sold and unsold properties were valued consistently.

Report

VALSF

sold	N	Median	Mean
UNSOLD	7565	$85	$114
SOLD	389	$93	$110

Report
VALSF

ABSTRIMP	sold	N	Median	Mean
2212	UNSOLD	1248	$101	$130
	SOLD	38	$102	$126
2215	UNSOLD	120	$59	$74
	SOLD	3	$70	$58
2220	UNSOLD	792	$93	$102
	SOLD	75	$105	$116
2225	UNSOLD	110	$80	$187
	SOLD	6	$70	$85
2227	UNSOLD	66	$78	$96
	SOLD	4	$83	$110
2230	UNSOLD	1586	$118	$153
	SOLD	68	$115	$145
2235	UNSOLD	1720	$68	$98
	SOLD	87	$78	$78
2245	UNSOLD	765	$87	$101
	SOLD	62	$102	$113
3215	UNSOLD	148	$57	$73
	SOLD	4	$49	$71
3230	UNSOLD	229	$74	$72
	SOLD	5	$85	$82

The above results indicated that sold and unsold commercial/industrial properties were valued consistently.

V. VACANT LAND SALE RESULTS

There were 1,358 qualified commercial/industrial sales over the 24 month period ending June 30, 2018. We trimmed 9 sales due to their extreme sales ratios. The sales ratio analysis was analyzed as follows:

Median	0.987
Price Related Differential	1.024
Coefficient of Dispersion	9.1

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:
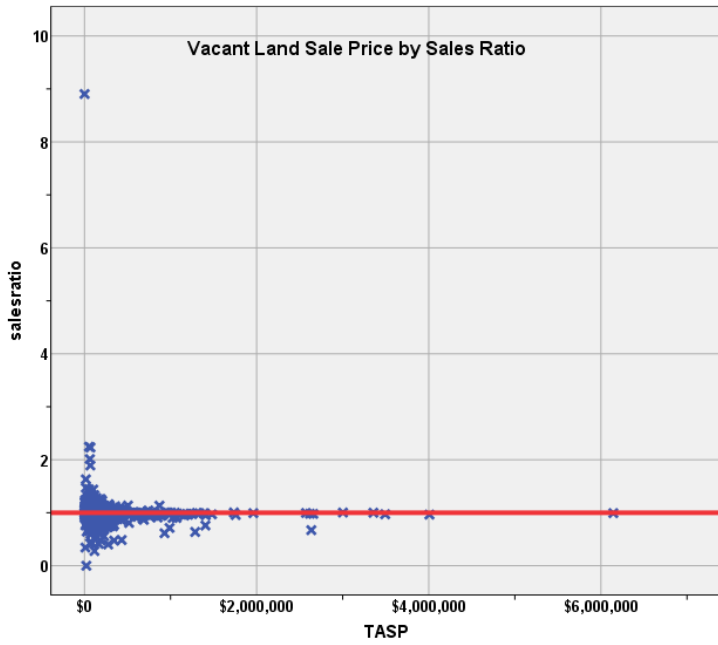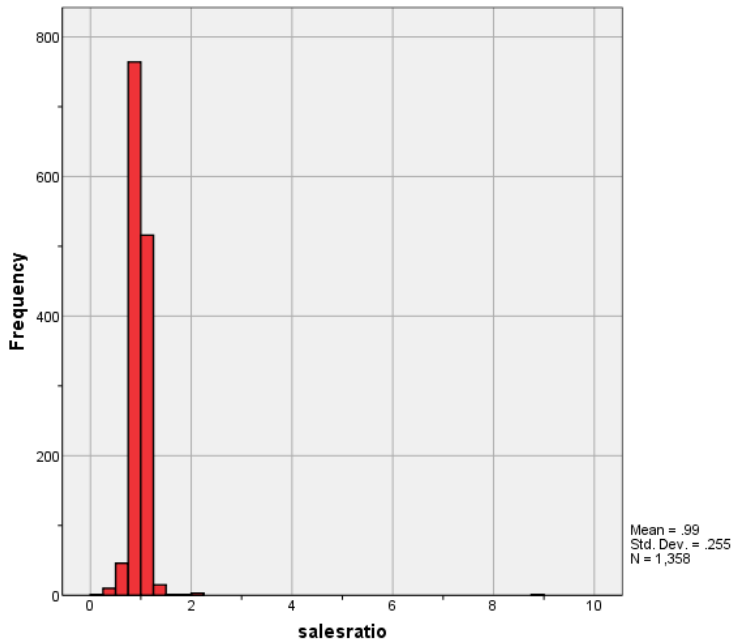
The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits, while the above scatter plot indicated that there was no price related differential issues. No sales were trimmed.

Vacant Land Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.997	.012		85.405	.000
	SalePeriod	-.001	.001	-.031	-1.136	.256

a. Dependent Variable: salesratio
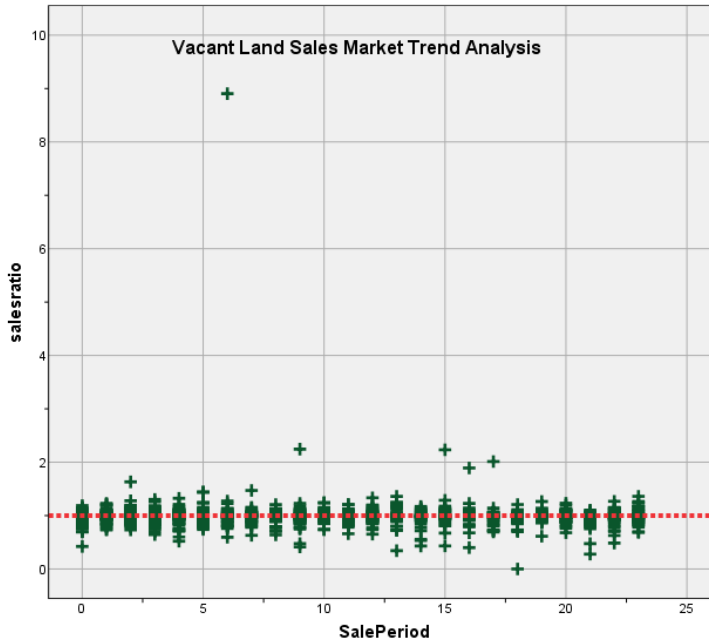
There was no significant trend. We therefore concluded that the assessor has adequately dealt with market trending for vacant land properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median and mean change in actual value for taxable years 2018 and 2019 for each group. The following results present the comparison results for sold and unsold properties:

Report
DIFF

sold	N	Median	Mean
UNSOLD	15949	1.05	2.16
SOLD	1358	1.18	4.53

Given the difference in the overall comparison analysis, we next examined sold and unsold properties by subdivision with at least 10 sales, as follows:

Report

DIFF

SUBDIVNO	sold	N	Median	Mean
0	UNSOLD	2201	1.09	1.03
	SOLD	160	1.15	1.20
1447	UNSOLD	72	1.18	1.32
	SOLD	8	1.71	1.40
10454	UNSOLD	11	1.13	1.13
	SOLD	5	1.18	1.16
10511	UNSOLD	13	1.02	1.05
	SOLD	10	1.04	1.02
10783	UNSOLD	13	1.02	.98
	SOLD	10	1.04	1.17
11901	UNSOLD	5	.99	.62
	SOLD	10	.99	1.11
12407	UNSOLD	4	1.03	1.07
	SOLD	14	1.23	1.26
13539	UNSOLD	4	.91	.96
	SOLD	14	.90	.94
13789	UNSOLD	27	1.13	.92
	SOLD	12	1.65	1.43
13831	UNSOLD	5	.91	.96
	SOLD	16	.91	.94
13852	UNSOLD	5	1.32	1.32
	SOLD	5	1.32	1.32
13891	UNSOLD	32	1.22	1.22
	SOLD	5	1.22	1.22
13931	UNSOLD	16	.91	.65
	SOLD	8	1.07	1.07
13937	UNSOLD	2	1.13	1.13
	SOLD	16	1.75	1.56
13946	UNSOLD	10	.61	.60
	SOLD	11	.90	.91
14004	UNSOLD	4	1.25	1.25
	SOLD	3	1.25	1.25
14011	UNSOLD	5	1.09	1.03
	SOLD	16	1.06	1.03
14016	UNSOLD	22	1.44	1.44
	SOLD	13	1.14	1.14
Total	UNSOLD	2473	1.10	1.03
	SOLD	356	1.14	1.19

Overall, while we concluded that the county assessor valued sold and unsold vacant land properties consistently. We met with the assessor to address the subdivision in the above table with significant differences in the median change in value between sold and unsold vacant land properties.

V. CONCLUSIONS

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

STATISTICAL ABSTRACT
Residential

		95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
EA	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
1.00	.983	.981	.985	.977	.975	.980	95.3%	.982	.980	.983	1.002	.039	6.9%
2.00	.972	.965	.980	.970	.965	.975	95.6%	.970	.962	.978	1.003	.087	12.2%
3.00	.974	.961	.987	.970	.960	.975	95.3%	.965	.952	.977	1.010	.109	16.4%
4.00	.979	.976	.982	.977	.975	.980	95.4%	.977	.974	.979	1.002	.047	8.8%
5.00	.972	.966	.978	.969	.963	.970	95.0%	.963	.957	.969	1.010	.077	11.6%
6.00	.954	.944	.964	.958	.950	.965	95.7%	.948	.937	.958	1.006	.098	13.6%
7.00	.976	.971	.981	.970	.970	.970	95.1%	.972	.965	.979	1.004	.063	9.5%
8.00	.972	.957	.986	.960	.953	.967	95.8%	.961	.945	.977	1.011	.086	19.3%
9.00	.972	.965	.979	.963	.957	.969	95.2%	.969	.960	.978	1.003	.073	9.9%
10.00	.975	.967	.982	.969	.961	.975	95.6%	.970	.960	.979	1.005	.074	10.2%
11.00	.965	.960	.969	.960	.956	.963	95.6%	.960	.956	.965	1.005	.070	9.5%
12.00	.974	.972	.976	.968	.966	.970	95.2%	.973	.967	.979	1.001	.051	7.2%
13.00	.960	.956	.964	.958	.955	.962	95.0%	.956	.952	.961	1.004	.068	9.1%
14.00	.968	.966	.970	.967	.965	.970	95.4%	.963	.960	.966	1.005	.055	7.4%
15.00	.970	.967	.974	.967	.965	.970	95.1%	.965	.961	.969	1.006	.062	8.3%
16.00	.948	.936	.960	.953	.943	.959	95.2%	.939	.929	.950	1.009	.095	15.3%
17.00	.968	.956	.980	.970	.960	.970	95.2%	.961	.953	.968	1.007	.076	18.9%
18.00	.974	.966	.982	.973	.970	.977	95.4%	.964	.944	.984	1.010	.072	11.8%
19.00	.976	.946	1.006	.970	.965	.976	95.8%	.963	.939	.986	1.014	.112	20.3%
20.00	.968	.966	.971	.967	.965	.970	95.4%	.963	.956	.970	1.006	.049	6.6%

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 Land

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound			Lower Bound	Upper Bound			Mean Centered
.949	.921	.976	.950	.932	.965	95.8%	.875	.823	.926	1.085	.173	29.1%

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

Vacant Land

Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound			Lower Bound	Upper Bound			Mean Centered
.986	.972	1.000	.987	.983	.991	95.2%	.963	.953	.972	1.024	.091	25.9%

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.

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	3	0.0%
	$25K to $50K	4	0.0%
	$50K to $100K	178	0.5%
	$100K to $150K	584	1.7%
	$150K to $200K	2548	7.4%
	$200K to $300K	13577	39.6%
	$300K to $500K	13711	40.0%
	$500K to $750K	3024	8.8%
	$750K to $1,000K	467	1.4%
	Over $1,000K	172	0.5%
Overall		34268	100.0%
Excluded		0	
Total		34268	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	.960	1.132	.186	36.9%
$25K to $50K	.970	.986	.134	29.2%
$50K to $100K	.988	1.008	.114	26.3%
$100K to $150K	.996	1.000	.120	21.1%
$150K to $200K	.981	1.000	.073	14.7%
$200K to $300K	.970	1.001	.051	8.3%
$300K to $500K	.970	1.001	.056	7.9%
$500K to $750K	.952	1.001	.074	10.1%
$750K to $1,000K	.954	1.000	.099	13.4%
Over $1,000K	.960	.991	.093	15.8%
Overall	.970	1.006	.060	9.7%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	0	3	0.0%
	1212	33151	96.7%
	1213	1	0.0%
	1213	4	0.0%
	1214	11	0.0%
	1214	1	0.0%
	1215	187	0.5%
	1216	3	0.0%
	1220	96	0.3%
	1225	11	0.0%
	1230	779	2.3%
	1545	1	0.0%

	1668	1	0.0%
	1714	1	0.0%
	1716	2	0.0%
	1718	1	0.0%
	1724	1	0.0%
	2029	1	0.0%
	2234	1	0.0%
	2746	9	0.0%
	3257	1	0.0%
	3512	1	0.0%
	9240	1	0.0%
Overall		34268	100.0%
Excluded		0	
Total		34268	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.450	1.137	.540	84.4%
1212	.970	1.006	.059	9.6%
1213	.974	1.000	.000	.
1213	1.075	1.026	.094	12.7%
1214	.987	1.019	.113	18.6%
1214	.871	1.000	.000	.
1215	.970	1.015	.099	15.2%
1216	1.113	.993	.085	12.8%
1220	.970	1.020	.128	19.4%
1225	.944	.945	.070	9.9%
1230	.962	1.002	.056	8.2%
1545	.713	1.000	.000	.
1668	.869	1.000	.000	.
1714	.698	1.000	.000	.
1716	.895	.955	.135	19.1%
1718	.901	1.000	.000	.
1724	.874	1.000	.000	.
2029	1.227	1.000	.000	.
2234	.930	1.000	.000	.
2746	.975	1.003	.045	6.5%
3257	.975	1.000	.000	.
3512	1.024	1.000	.000	.
9240	1.210	1.000	.000	.
Overall	.970	1.006	.060	9.7%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	3	0.0%
	Over 100	801	2.3%
	75 to 100	411	1.2%
	50 to 75	3367	9.8%
	25 to 50	8625	25.2%
	5 to 25	12681	37.0%
	5 or Newer	8380	24.5%
Overall		34268	100.0%
Excluded		0	
Total		34268	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.450	1.137	.540	84.4%
Over 100	.970	1.012	.097	14.3%
75 to 100	.968	1.015	.097	13.9%
50 to 75	.970	1.011	.073	11.7%
25 to 50	.967	1.005	.066	10.2%
5 to 25	.969	1.002	.054	7.8%
5 or Newer	.974	1.009	.050	10.1%
Overall	.970	1.006	.060	9.7%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	3	0.0%
	LE 500 sf	21	0.1%
	500 to 1,000 sf	3235	9.4%
	1,000 to 1,500 sf	9425	27.5%
	1,500 to 2,000 sf	10740	31.3%
	2,000 to 3,000 sf	8715	25.4%
	3,000 sf or Higher	2129	6.2%
Overall		34268	100.0%
Excluded		0	
Total		34268	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.450	1.137	.540	84.4%
LE 500 sf	.924	1.041	.180	26.9%
500 to 1,000 sf	.967	1.007	.069	11.2%
1,000 to 1,500 sf	.966	1.006	.056	9.1%
1,500 to 2,000 sf	.969	1.005	.054	8.1%
2,000 to 3,000 sf	.974	1.007	.060	9.5%
3,000 sf or Higher	.976	1.010	.083	15.7%
Overall	.970	1.006	.060	9.7%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		3	0.0%
	0.0	1	0.0%
	1.0	207	0.6%
	1.2	2	0.0%
	1.3	3	0.0%
	1.4	1	0.0%
	1.5	44	0.1%
	1.8	1	0.0%
	1.9	1	0.0%
	2.0	25463	74.3%
	2.2	2	0.0%
	2.5	8	0.0%
	3.0	7922	23.1%
	4.0	546	1.6%
	5.0	64	0.2%
Overall		34268	100.0%
Excluded		0	
Total		34268	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.450	1.137	.540	84.4%
0.0	.960	1.000	.000	.
1.0	.958	1.052	.111	17.6%
1.2	1.094	1.000	.074	10.4%
1.3	.967	1.037	.047	9.4%
1.4	.841	1.000	.000	.
1.5	.971	1.009	.096	12.5%
1.8	.937	1.000	.000	.
1.9	.999	1.000	.000	.
2.0	.970	1.004	.056	8.8%
2.2	.907	1.000	.000	0.0%
2.5	.914	1.004	.048	6.7%
3.0	.967	1.007	.067	10.0%
4.0	.976	1.017	.102	16.8%
5.0	.970	1.064	.096	59.8%
Overall	.970	1.006	.060	9.7%

Commercial Median Ratio Stratification

Sale Price
Case Processing Summary

		Count	Percent
SPRec	$25K to $50K	16	4.1%
	$50K to $100K	15	3.9%
	$100K to $150K	11	2.8%
	$150K to $200K	23	5.9%
	$200K to $300K	49	12.6%
	$300K to $500K	74	19.0%
	$500K to $750K	61	15.7%
	$750K to $1,000K	27	6.9%
	Over $1,000K	113	29.0%
Overall		389	100.0%
Excluded		0	
Total		389	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$25K to $50K	.970	1.000	.036	6.4%
$50K to $100K	1.060	1.011	.182	31.1%
$100K to $150K	.991	1.010	.155	22.6%
$150K to $200K	.982	1.001	.101	13.2%
$200K to $300K	.923	1.008	.191	29.5%
$300K to $500K	.995	1.004	.145	19.4%
$500K to $750K	.924	1.002	.151	20.3%
$750K to $1,000K	.905	.999	.183	23.6%
Over $1,000K	.866	1.040	.220	44.0%
Overall	.950	1.085	.173	29.0%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1220	1	0.3%
	1554	1	0.3%
	1712	3	0.8%
	1716	7	1.8%
	1720	2	0.5%
	1721	1	0.3%
	1725	3	0.8%
	1728	1	0.3%
	1968	1	0.3%
	2032	1	0.3%
	2108	1	0.3%
	2143	1	0.3%
	2149	1	0.3%
	2212	38	9.8%
	2215	3	0.8%
	2219	1	0.3%
	2220	75	19.3%
	2224	1	0.3%
	2225	6	1.5%
	2228	4	1.0%
	2230	68	17.5%
	2233	1	0.3%
	2235	87	22.4%
	2245	62	15.9%
	2333	1	0.3%
	2348	1	0.3%
	2725	1	0.3%
	2888	1	0.3%
	3215	4	1.0%
	3230	5	1.3%
	4585	1	0.3%
	5740	1	0.3%
	5752	1	0.3%
	5760	1	0.3%
	9249	1	0.3%
	9259	1	0.3%
Overall		389	100.0%
Excluded		0	
Total		389	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1220	1.221	1.000	.000	.
1554	.998	1.000	.000	.
1712	.956	1.039	.172	34.9%
1716	.902	1.049	.166	23.0%
1720	.882	1.019	.122	17.2%
1721	.833	1.000	.000	.
1725	1.016	1.021	.111	18.2%
1728	.826	1.000	.000	.
1968	.257	1.000	.000	.
2032	1.025	1.000	.000	.
2108	.897	1.000	.000	.
2143	1.127	1.000	.000	.
2149	.807	1.000	.000	.
2212	.915	1.096	.189	24.1%
2215	.814	1.058	.116	17.4%
2219	.866	1.000	.000	.
2220	.923	1.154	.195	26.1%
2224	1.030	1.000	.000	.
2225	1.091	.916	.711	134.1%
2228	1.250	1.082	.129	15.4%
2230	.912	1.138	.218	30.2%
2233	1.031	1.000	.000	.
2235	.946	1.032	.118	16.4%
2245	.974	1.051	.105	17.8%
2333	1.167	1.000	.000	.
2348	1.263	1.000	.000	.
2725	1.003	1.000	.000	.
2888	.907	1.000	.000	.
3215	.894	1.169	.231	28.4%
3230	1.000	.993	.055	8.3%
4585	1.210	1.000	.000	.
5740	1.078	1.000	.000	.
5752	1.153	1.000	.000	.
5760	1.013	1.000	.000	.
9249	.679	1.000	.000	.
9259	.541	1.000	.000	.
Overall	.950	1.085	.173	29.0%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	28	7.2%
	75 to 100	6	1.5%
	50 to 75	46	11.8%
	25 to 50	173	44.5%
	5 to 25	117	30.1%
	5 or Newer	19	4.9%
Overall		389	100.0%
Excluded		0	
Total		389	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.937	1.065	.196	24.4%
75 to 100	.839	1.035	.291	39.5%
50 to 75	.962	1.066	.188	23.1%
25 to 50	.956	1.103	.167	23.7%
5 to 25	.943	1.065	.166	38.6%
5 or Newer	.975	1.209	.155	23.8%
Overall	.950	1.085	.173	29.0%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	2	0.5%
	500 to 1,000 sf	21	5.4%
	1,000 to 1,500 sf	43	11.1%
	1,500 to 2,000 sf	26	6.7%
	2,000 to 3,000 sf	53	13.6%
	3,000 sf or Higher	244	62.7%
Overall		389	100.0%
Excluded		0	
Total		389	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.182	1.000	.093	13.1%
500 to 1,000 sf	.960	1.086	.148	24.1%
1,000 to 1,500 sf	.968	1.147	.157	26.3%
1,500 to 2,000 sf	.889	1.115	.147	20.0%
2,000 to 3,000 sf	.973	1.068	.137	19.9%
3,000 sf or Higher	.941	1.082	.188	32.5%
Overall	.950	1.085	.173	29.0%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1.0	19	4.9%
	1.5	51	13.1%
	2.0	276	71.0%
	2.5	37	9.5%
	3.0	6	1.5%
Overall		389	100.0%
Excluded		0	
Total		389	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1.0	.963	.988	.151	20.3%
1.5	.891	1.053	.162	21.8%
2.0	.960	1.097	.168	24.1%
2.5	.912	1.110	.237	63.8%
3.0	.968	1.034	.124	16.1%
Overall	.950	1.085	.173	29.0%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	71	5.2%
	$25K to $50K	112	8.2%
	$50K to $100K	401	29.5%
	$100K to $150K	275	20.3%
	$150K to $200K	203	14.9%
	$200K to $300K	154	11.3%
	$300K to $500K	67	4.9%
	$500K to $750K	28	2.1%
	$750K to $1,000K	18	1.3%
	Over $1,000K	29	2.1%
Overall		1358	100.0%
Excluded		0	
Total		1358	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	.993	1.117	.218	97.2%
$25K to $50K	1.026	.994	.089	11.9%
$50K to $100K	1.000	1.001	.091	16.6%
$100K to $150K	.980	1.001	.076	11.4%
$150K to $200K	.966	1.000	.090	12.3%
$200K to $300K	.967	1.002	.079	11.5%
$300K to $500K	.976	.999	.061	11.1%
$500K to $750K	.992	1.001	.036	6.1%
$750K to $1,000K	.965	1.003	.066	12.1%
Over $1,000K	.978	.993	.048	10.2%
Overall	.987	1.024	.091	25.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100	448	33.0%
	200	88	6.5%
	300	13	1.0%
	510	6	0.4%
	520	14	1.0%
	530	13	1.0%
	540	20	1.5%
	550	76	5.6%
	560	3	0.2%
	1112	627	46.2%
	1115	2	0.1%
	1135	15	1.1%
	2112	4	0.3%
	2115	3	0.2%
	2120	1	0.1%
	2130	16	1.2%
	2135	9	0.7%
Overall		1358	100.0%
Excluded		0	
Total		1358	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	.979	1.008	.084	12.4%
200	.989	1.006	.066	15.1%
300	.992	1.006	.026	5.3%
510	.973	1.000	.027	4.2%
520	.988	1.035	.196	41.4%
530	.989	.999	.069	9.3%
540	.977	.972	.087	12.1%
550	.983	1.171	.221	94.3%
560	.850	1.032	.050	8.0%
1112	.996	1.018	.085	14.0%
1115	.916	1.000	.005	0.7%
1135	.951	1.037	.133	17.3%
2112	.911	1.076	.116	16.7%
2115	.974	1.000	.014	2.1%
2120	.999	1.000	.000	.
2130	.981	1.006	.041	7.6%
2135	.989	1.007	.008	1.2%
Overall	.987	1.024	.091	25.9%