



2016

DENVER COUNTY PROPERTY ASSESSMENT STUDY



WILDROSE
APPRAISAL, INCORPORATED
Audit Division



September 15, 2016

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

RE: Final Report for the 2016 Colorado Property Assessment Study

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2016 Colorado Property Assessment Study.

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

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

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

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

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

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

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INTRODUCTION



Colorado

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

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

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

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

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

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

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

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

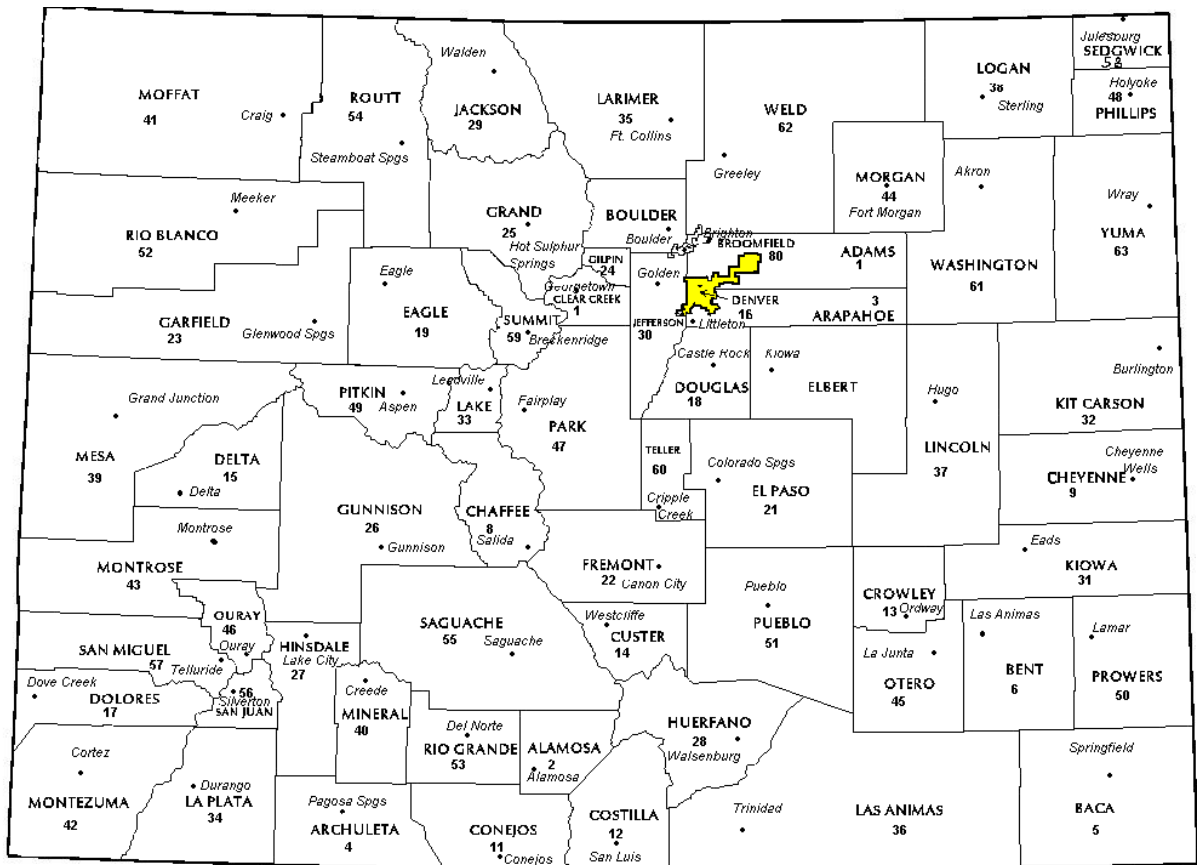
Wildrose Audit has completed the Property Assessment Study for 2016 and is pleased to report its findings for Denver County in the following report.

REGIONAL/HISTORICAL SKETCH OF DENVER COUNTY

Regional Information

Denver 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

Denver County had an estimated population of approximately 663,862 people with 3923 people per square mile, according to the U.S. Census Bureau's 2014 estimated census data. This represents a 10.6 percent change from April 1, 2010 to July 1, 2014.

Denver is the capital and the most populous city of the state of Colorado. Denver is a consolidated city-county located in the South Platte River Valley on the High Plains just east of the Front Range of the Rocky Mountains.

Denver City was founded in November 1858 as a mining town during the Pikes Peak Gold Rush in western Kansas Territory. That summer, a group of gold prospectors from Lawrence, Kansas, arrived and established Montana City on the banks of the South Platte River. This was the first settlement in what was later to become the city of Denver. The site faded quickly, however, and was abandoned in favor of Auraria (named after the gold-mining town of Auraria, Georgia) and St. Charles City by the summer of 1859. The Montana City site is now Grant-Frontier Park and includes mining equipment and a log cabin replica.

On November 22, 1858, General William Larimer, a land speculator from eastern Kansas, placed cottonwood logs to stake a claim on the hill overlooking the confluence of the South Platte River and Cherry Creek, across the creek from the existing mining settlement of Auraria. Larimer named the town site Denver City to curry favor with Kansas Territorial Governor James W. Denver. Larimer hoped that the town's name would help make it the county seat of Arapaho County, but ironically Governor Denver had already resigned from office. The location was accessible to existing trails and was across the South Platte River

from the site of seasonal encampments of the Cheyenne and Arapaho. The site of these first towns is now the site of Confluence Park in downtown Denver. Larimer, along with associates in the St. Charles City Land Company, sold parcels in the town to merchants and miners, with the intention of creating a major city that would cater to new emigrants. Denver City was a frontier town, with an economy based on servicing local miners with gambling, saloons, livestock and goods trading. In the early years, land parcels were often traded for grubstakes or gambled away by miners in Auraria.

The Colorado Territory was created on February 28, 1861. Arapahoe County was formed on November 1, 1861 and Denver City was incorporated on November 7, 1861. Denver City served as the Arapahoe County Seat from 1861 until consolidation in 1902. In 1865, Denver City became the Territorial Capital and became the State Capital when Colorado was admitted to the Union.

In 1901 the Colorado General Assembly voted to split Arapahoe County into three parts: a new consolidated City and County of Denver, a new Adams County, and the remainder of the Arapahoe County to be renamed South Arapahoe County. A ruling by the Colorado Supreme Court, subsequent legislation, and a referendum delayed the creation of the City and County of Denver until November 15, 1902.

Denver has hosted the Democratic National Convention twice, during the years of 1908 and again in 2008, taking the opportunity to promote the city's status on the national, political, and socioeconomic stage.

(Wikipedia.org)

RATIO ANALYSIS

Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 2013 and June 2014. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2014 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 price-related differential for each class of property. Counties were not passed or failed by these

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

Conclusions

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

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

The results for Denver County are:

Denver County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	533	0.989	1.146	17	Compliant
Condominium	5,843	1.000	1.006	5.4	Compliant
Single Family	14,926	1.001	1.007	4.8	Compliant
Vacant Land	777	0.959	1.035	12.2	Compliant

**SINGLE FAMILY Ratio Statistics for current / last
N = 14,926**

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.002	1.002	.037
2	.999	1.004	.045
3	.999	1.003	.038
4	1.003	1.006	.048
5	1.001	1.005	.060
6	.999	1.004	.045
7	1.003	1.002	.040
8	1.003	1.005	.044
9	.999	1.005	.044
10	.999	1.002	.036
11	1.002	1.008	.070
12	1.002	1.003	.043
13	.999	1.005	.038
14	.999	1.008	.039
15	1.001	1.011	.056
16	1.002	1.003	.041
17	1.005	1.010	.055
18	1.003	1.005	.053
19	1.001	1.004	.044
20	.999	1.011	.059
21	1.000	1.002	.037
22	1.001	1.002	.039
23	1.001	1.009	.070
24	1.002	1.004	.048
25	.999	1.019	.048
26	.998	1.003	.040
27	1.001	1.005	.041
28	.998	1.003	.041
29	1.001	1.002	.041
30	1.001	1.006	.049
31	1.000	1.014	.072
32	1.002	1.011	.074
33	1.006	1.005	.049
Overall	1.001	1.007	.048



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

Denver 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	Compliant
Single Family	Compliant
Vacant Land	Compliant

Conclusions

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

Recommendations

None

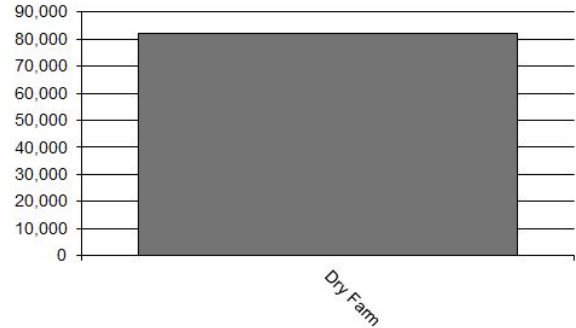
AGRICULTURAL LAND STUDY

Acres By Subclass



Dry Farm
100.00%

Value By Subclass



Agricultural Land

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

(See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

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

Denver County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4127	Dry Farm	1,557	43.92	68,380	68,380	1.00
Total/Avg		1,557	43.92	68,380	68,380	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.

Property Taxation for the valuation of agricultural outbuildings.

Recommendations

None

Conclusions

Denver County has substantially complied with the procedures provided by the Division of



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

Denver 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.:

- Aerial Photography/Pictometry

Denver 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.:

- Denver County had no land area under a residential improvement that is determined to be not integral under 39-1-102, C.R.S.

Denver 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 2016 for Denver County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 60 sales listed as unqualified.

All 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 \$500, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

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

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

Denver 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

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

Denver County is exempt from the Natural Resources Study.

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2016 in Denver 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 was 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

Denver 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.

Denver County has been reviewed for their procedures and adherence to guidelines when

assessing and valuing 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

Denver 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

Denver 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.

Denver 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.

Denver County submitted their personal property written audit plan and was current for the 2016 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Accounts with obvious discrepancies
- New businesses filing for the first time
- Accounts with greater than 10% change
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- As part of Sales Tax audit



Denver County's median ratio is .98. 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

Denver County has employed adequate discovery, classification, documentation,

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

Recommendations

None

WILDROSE AUDITOR STAFF

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

Steve Kane, *Audit Statistician*

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

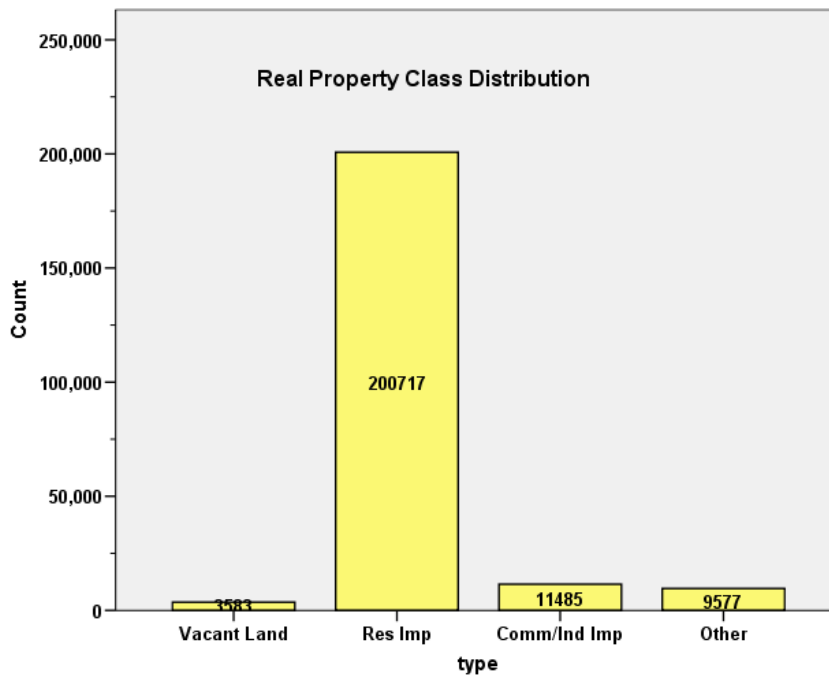
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT FOR DENVER COUNTY 2016

I. OVERVIEW

Denver County is an urban county located along Colorado’s Front Range. The county has a total of 225,362 real property parcels, according to data submitted by the county assessor’s office in 2016. 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) accounted for 46.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for 65.6% of all residential properties, while condominiums accounted for 21.9% of all residential properties. We broke down our residential analysis by both economic area and residential subclass.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 5.1% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2016 Colorado Property Assessment Study. Information was provided by the Denver Assessor’s Office in June 2016. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 24,458 qualified residential sales in the 24-month sale period ending June 30, 2014. We stratified the sales ratio results by residential subclass and economic area, as follows:

SINGLE FAMILY Ratio Statistics for currtot / tasp
N = 14,926

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.002	1.002	.037
2	.999	1.004	.045
3	.999	1.003	.038
4	1.003	1.006	.048
5	1.001	1.005	.060
6	.999	1.004	.045
7	1.003	1.002	.040
8	1.003	1.005	.044
9	.999	1.005	.044
10	.999	1.002	.036
11	1.002	1.008	.070
12	1.002	1.003	.043
13	.999	1.005	.038
14	.999	1.008	.039
15	1.001	1.011	.056
16	1.002	1.003	.041
17	1.005	1.010	.055
18	1.003	1.005	.053
19	1.001	1.004	.044
20	.999	1.011	.059
21	1.000	1.002	.037
22	1.001	1.002	.039
23	1.001	1.009	.070
24	1.002	1.004	.048
25	.999	1.019	.048
26	.998	1.003	.040
27	1.001	1.005	.041
28	.998	1.003	.041
29	1.001	1.002	.041
30	1.001	1.006	.049
31	1.000	1.014	.072
32	1.002	1.011	.074
33	1.006	1.005	.049
Overall	1.001	1.007	.048

ROWHOUSE/TOWN HOMES Ratio Statistics for currtot / tasp
N = 3,083

Group	Median	Price Related Differential	Coefficient of Dispersion
51	1.003	1.004	.051
52	1.004	1.004	.056
53	.998	1.003	.040
54	1.003	1.005	.054
55	1.002	1.004	.049
56	1.002	1.005	.042
Overall	1.001	1.005	.048

DUPLEX/TRIPLEX Ratio Statistics for currtot / tasp
N = 226

Median	Price Related Differential	Coefficient of Dispersion
1.006	1.013	.087

MULTI-FAM UNITS 4-8 Ratio Statistics for currtot / tasp
N = 91

Median	Price Related Differential	Coefficient of Dispersion
1.001	1.012	.089

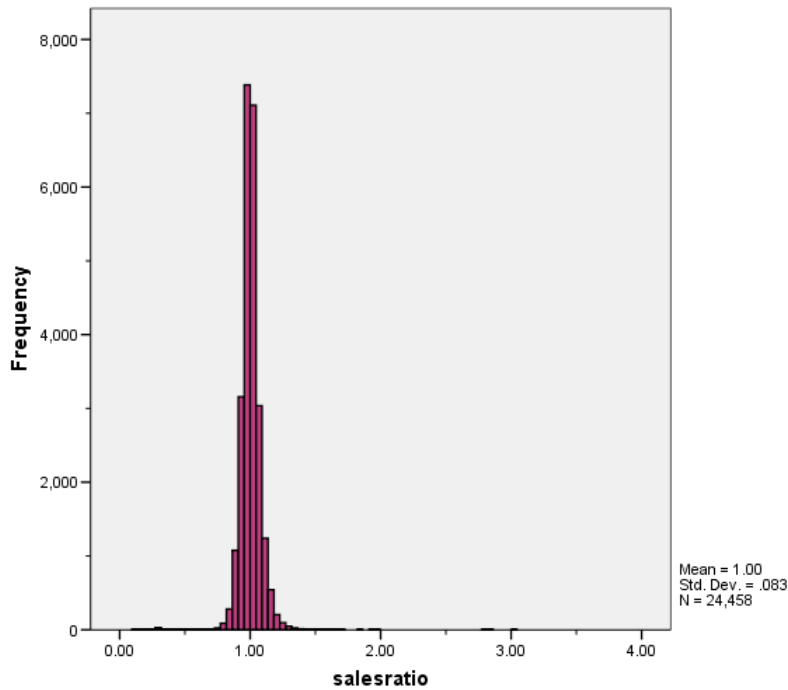
MULTI-FAM UNITS 9 AND UP Ratio Statistics for currtot / tasp
N = 173

Median	Price Related Differential	Coefficient of Dispersion
.995	1.019	.083

CONDOMINIUM Ratio Statistics for currtot / tasp
N = 5,843

Group	Median	Price Related Differential	Coefficient of Dispersion
37	.997	1.004	.050
38	1.000	1.006	.050
39	1.001	1.005	.055
41	.999	1.008	.066
42	1.001	1.007	.054
43	1.001	1.007	.052
44	.999	1.006	.052
45	1.000	1.005	.045
46	.999	1.004	.049
48	1.002	1.009	.079
50	1.002	1.002	.025
Overall	1.000	1.006	.054

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



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

Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending and broken down by subclass and economic area, as follows:

SINGLE FAMILY ANALYSIS

econarea	Model		Unstandardized Coefficients		Standardized	t	Sig.
			B	Std. Error	Coefficients		
			Beta				
1	1	SalePeriod	.001	.000	.155	3.775	.000
2	1	SalePeriod	.003	.000	.282	6.316	.000
3	1	SalePeriod	.001	.000	.130	2.657	.008
4	1	SalePeriod	.001	.001	.046	.988	.324
5	1	SalePeriod	.003	.001	.235	2.384	.019
6	1	SalePeriod	.001	.000	.131	3.768	.000
7	1	SalePeriod	.001	.000	.121	3.045	.002
8	1	SalePeriod	.001	.000	.116	2.657	.008
9	1	SalePeriod	.0000722	.001	.007	.124	.901
10	1	SalePeriod	.000026565	.000	.004	.080	.937
11	1	SalePeriod	.003	.001	.215	4.920	.000
12	1	SalePeriod	.001	.000	.078	1.562	.119
13	1	SalePeriod	.001	.000	.085	2.028	.043
14	1	SalePeriod	.001	.000	.081	1.636	.103
15	1	SalePeriod	.000	.001	.020	.324	.746
16	1	SalePeriod	.002	.000	.287	6.416	.000
17	1	SalePeriod	.002	.001	.133	2.883	.004
18	1	SalePeriod	.001	.001	.081	1.335	.183
19	1	SalePeriod	.001	.000	.118	2.886	.004
20	1	SalePeriod	.001	.001	.093	1.527	.128
21	1	SalePeriod	.000	.001	-.016	-.227	.821
22	1	SalePeriod	.001	.000	.072	2.409	.016
23	1	SalePeriod	.002	.001	.162	3.943	.000
24	1	SalePeriod	.001	.000	.093	2.213	.027
25	1	SalePeriod	.000	.001	-.038	-.764	.445
26	1	SalePeriod	.001	.000	.159	3.209	.001
27	1	SalePeriod	.001	.001	.094	1.921	.055
28	1	SalePeriod	.001	.000	.171	2.888	.004
29	1	SalePeriod	.000	.000	.052	.906	.366
30	1	SalePeriod	.001	.001	.134	2.654	.008
31	1	SalePeriod	.003	.001	.149	2.631	.009
32	1	SalePeriod	.002	.001	.119	3.223	.001
33	1	SalePeriod	.001	.001	.068	1.020	.309

a. Dependent Variable: salesratio

ROWHOUSE/TOWN HOME ANALYSIS

econarea	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
51	1	SalePeriod	.002	.001	.207	3.934	.000
52	1	SalePeriod	.002	.001	.175	2.222	.028
53	1	SalePeriod	.000	.000	-.034	-.806	.420
54	1	SalePeriod	.001	.000	.087	2.476	.013
55	1	SalePeriod	.0000955	.000	.010	.205	.838
56	1	SalePeriod	-.0000079	.000	-.001	-.025	.980

a. Dependent Variable: salesratio

DUPLEX/TRIPLEX ANALYSIS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	SalePeriod	.003	.001	.149	2.248	.026

a. Dependent Variable: salesratio

MULTI-FAM UNITS 4-8 ANALYSIS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	SalePeriod	.002	.002	.122	1.155	.251

a. Dependent Variable: salesratio

MULTI-FAM UNITS 9 AND UP ANALYSIS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	SalePeriod	.001	.001	.091	1.194	.234

a. Dependent Variable: salesratio

CONDOMINIUM ANALYSIS

econarea	Model		Unstandardized Coefficients		Standardized	t	Sig.
			B	Std. Error	Coefficients Beta		
37	1	SalePeriod	.000	.000	.037	.808	.419
38	1	SalePeriod	.001	.000	.093	1.889	.060
39	1	SalePeriod	.000	.001	-.011	-.227	.821
41	1	SalePeriod	.001	.001	.093	2.378	.018
42	1	SalePeriod	.001	.000	.084	2.351	.019
43	1	SalePeriod	.000	.000	.032	.930	.353
44	1	SalePeriod	.000	.000	-.023	-.657	.512
45	1	SalePeriod	.000	.000	.023	.522	.602
46	1	SalePeriod	.002	.001	.216	4.014	.000
48	1	SalePeriod	.003	.001	.199	4.159	.000

a. Dependent Variable: salesratio

The above indicates that market trending was insignificant from either a statistical or a relative magnitude perspective for each subclass and economic area. Based on this analysis, we concluded that Denver County adequately addressed market trending.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the 2016 actual value per square foot for sold and unsold residential properties by subclass, as follows:

Report

ValSF	abstrimp	sold	N	Median	Mean
1112			116,359	\$220.90	\$237.86
		SOLD	14,846	\$248.90	\$263.44
1114			14,648	\$233.51	\$238.67
		SOLD	3,087	\$262.87	\$265.19
1115			3,483	\$174.73	\$190.51
		SOLD	225	\$149.07	\$162.74
1120			905	\$172.32	\$182.68
		SOLD	91	\$154.36	\$160.51
1125			1,335	\$151.49	\$211.08
		SOLD	159	\$172.66	\$176.40
1130			34,481	\$192.70	\$204.56
		SOLD	5,844	\$235.79	\$239.70

Given the difference between sold and unsold properties, we next compared the median and mean change in value from 2014 to 2016 between sold and unsold groups. The data was also broken down by subclass, as follows:

Report

DIFF	abstrimp	sold	N	Median	Mean
1112		UNSOLD	115557	1.29	1.44
		SOLD	14982	1.34	2.04
1114		UNSOLD	12902	1.25	1.50
		SOLD	2849	1.28	2.42
1115		UNSOLD	3469	1.27	1.28
		SOLD	208	1.30	1.34
1120		UNSOLD	894	1.32	1.34
		SOLD	86	1.32	1.40
1125		UNSOLD	1310	1.43	1.86
		SOLD	157	1.50	1.64
1130		UNSOLD	37946	1.30	1.34
		SOLD	5842	1.29	1.34

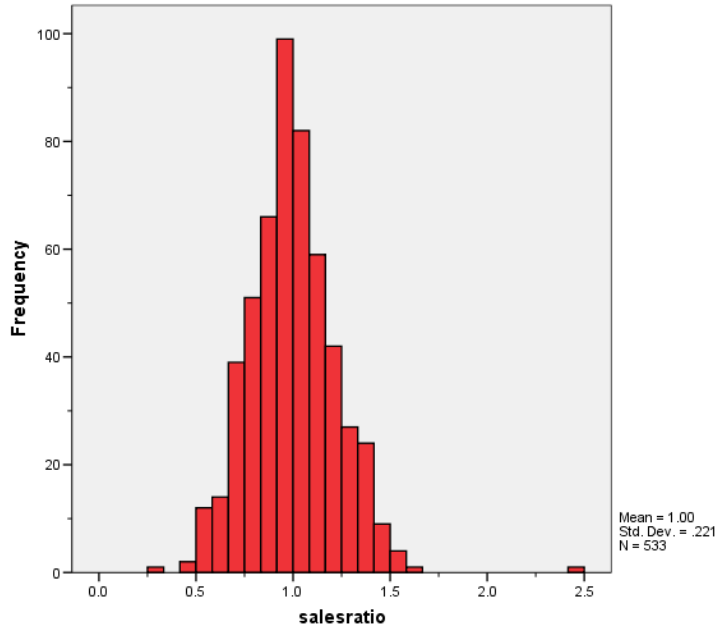
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 533 qualified commercial/industrial sales in the 24-month sale period ending June 30, 2014. We performed the following sales ratio analysis, as follows:

Median	0.989
Price Related Differential	1.146
Coefficient of Dispersion	17.0

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

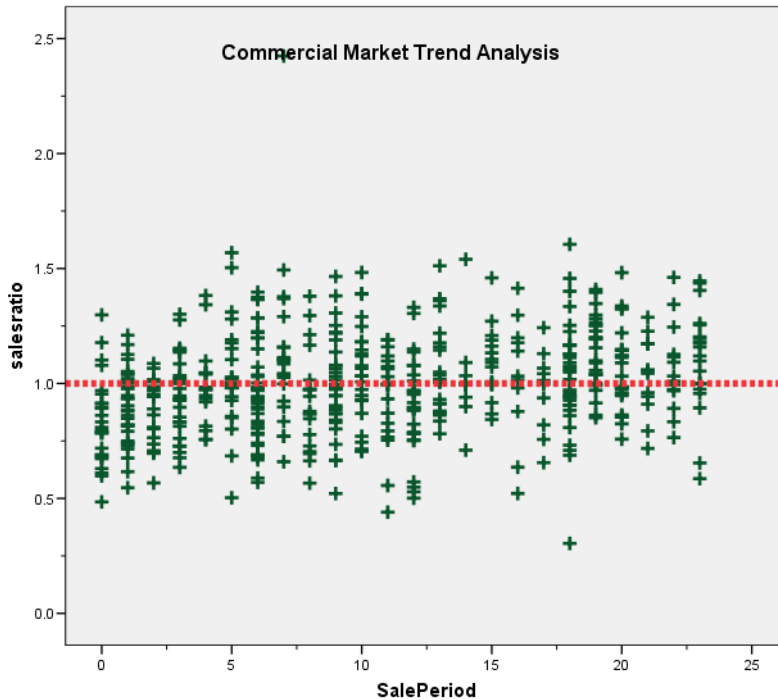


Commercial/Industrial Market Trend Analysis

The 533 commercial/industrial sales were analyzed, examining the sale ratios across the 24-month sale period with the following results:

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.913	.017		53.858	.000
	SalePeriod	.008	.001	.246	5.858	.000

a. Dependent Variable: salesratio



While there was a statistically significant trend, the magnitude of the trend was marginal at best. We concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median value per square foot between sold and unsold commercial/industrial properties by class and major subclass, as follows:

Report

ValSF			
sold	N	Median	Mean
UNSOLD	8523	\$117.96	\$147.03
SOLD	533	\$104.47	\$132.58

Report

ValSF				
abstrimp	sold	N	Median	Mean
2112	UNSOLD	1,577	\$135.14	\$153.10
	SOLD	84	\$125.66	\$142.42
2120	UNSOLD	1,464	\$155.66	\$168.18
	SOLD	134	\$125.16	\$142.41
2125	UNSOLD	148	\$115.78	\$144.45
	SOLD	8	\$121.33	\$151.50
2130	UNSOLD	1,468	\$175.62	\$221.23
	SOLD	57	\$126.83	\$148.17
2135	UNSOLD	2,126	\$67.23	\$74.90
	SOLD	157	\$67.88	\$72.47
2140	UNSOLD	461	\$73.51	\$87.57
	SOLD	2	\$149.45	\$149.45
2230	UNSOLD	896	\$200.00	\$209.00
	SOLD	78	\$192.17	\$223.20
3115	UNSOLD	285	\$66.17	\$72.63
	SOLD	13	\$67.16	\$67.30

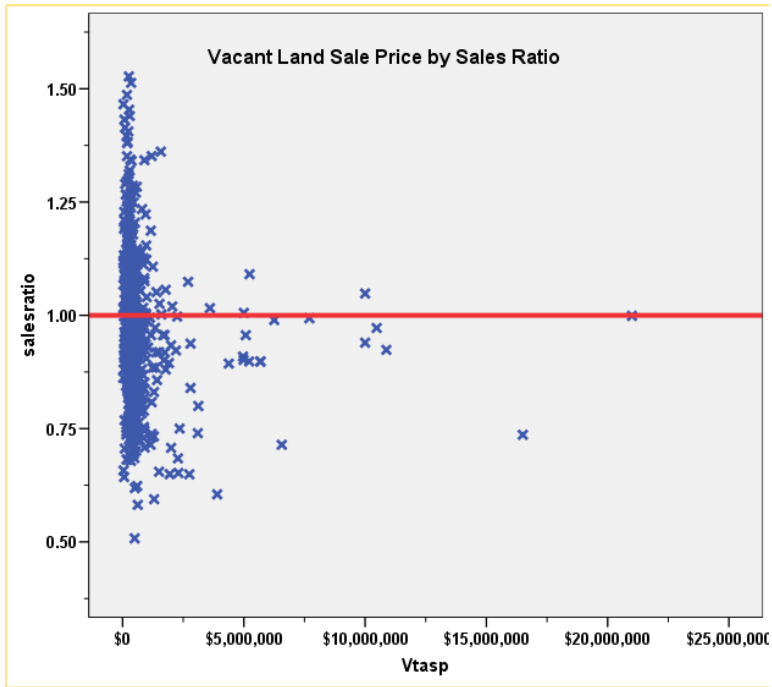
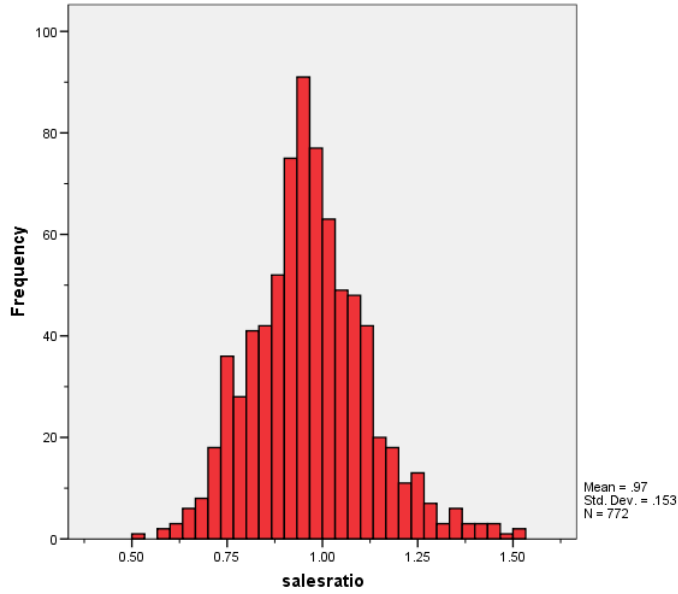
The above results indicated that sold commercial/industrial properties were not valued consistently more than unsold properties.

V. VACANT LAND SALE RESULTS

There were 777 qualified vacant land sales in the 24-month sale period ending June 30, 2014. The following sales ratio analysis was performed:

Median	0.959
Price Related Differential	1.035
Coefficient of Dispersion	12.2

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



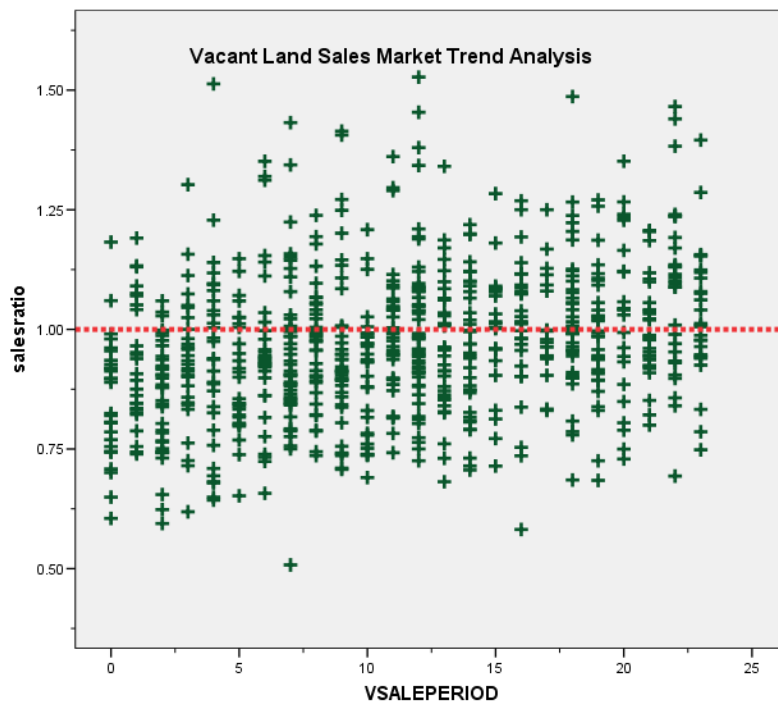
The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

Vacant Land Market Trend Analysis

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.894	.010		85.337	.000
	VSALEPERIOD	.007	.001	.281	8.118	.000

a. Dependent Variable: salesratio



While there was a statistically significant trend, the magnitude of the trend was not significant. We concluded that the assessor has adequately considered market trending adjustments as part of the vacant land valuation.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in value for 2014 and 2016 between each group. We stratified the vacant land properties by neighborhoods with at least 8 sales and found overall consistency. The following results present the overall comparison results:

Report				
DIFF				
nbhd	sold	N	Median	Mean
231	UNSOLD	32	1.15	1.29
	SOLD	11	1.12	1.14
234	UNSOLD	22	1.94	1.57
	SOLD	15	2.00	7.25
235	UNSOLD	23	1.28	1.21
	SOLD	27	1.47	1.71
237	UNSOLD	21	1.33	1.41
	SOLD	12	1.85	2.54
247	UNSOLD	22	2.10	3.28
	SOLD	15	2.10	2.51
250	UNSOLD	35	2.03	1.85
	SOLD	19	1.92	3.60
265	UNSOLD	22	1.53	2.05
	SOLD	6	1.51	2.19
268	UNSOLD	21	1.30	1.37
	SOLD	8	2.00	1.89
513	UNSOLD	6	1.76	2.49
	SOLD	8	1.56	3.58
514	UNSOLD	7	1.49	1.42
	SOLD	11	1.33	2.49
526	UNSOLD	10	1.27	1.36
	SOLD	28	1.19	1.29
530	UNSOLD	15	1.53	1.47
	SOLD	42	1.40	1.43
531	UNSOLD	11	3.19	2.46
	SOLD	10	1.50	1.45
532	UNSOLD	10	1.76	1.85
	SOLD	11	1.95	2.00
545	UNSOLD	13	1.53	1.52
	SOLD	21	1.53	1.52
593	UNSOLD	4	1.23	1.10
	SOLD	8	1.09	1.11
596	UNSOLD	5	1.33	.99
	SOLD	9	1.66	1.68
606	UNSOLD	6	1.22	1.08
	SOLD	10	1.25	1.32
674	UNSOLD	3	2.00	1.37
	SOLD	13	2.00	1.63
681	UNSOLD	16	1.02	1.01
	SOLD	11	1.05	1.12

The same pattern was found when neighborhoods with at least eight sales were also analyzed. Overall, we concluded that the county assessor did not consistently value sold properties more than unsold properties.

V. CONCLUSIONS

Based on this 2016 audit statistical analysis, residential and vacant land properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT

Residential

PREDUSE	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
		Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
1112	1.002	1.001	1.003	1.000	1.000	1.001	95.2%	.994	.991	.996	1.008	.049	8.3%
1114	1.002	.999	1.005	1.001	.999	1.003	95.1%	.998	.995	1.001	1.004	.051	8.8%
1115	1.011	.996	1.027	1.006	.982	1.021	96.1%	.999	.982	1.015	1.013	.087	11.6%
1120	1.025	.999	1.051	1.001	.983	1.032	96.5%	1.013	.985	1.040	1.012	.089	12.2%
1125	1.009	.993	1.024	.995	.980	1.023	95.2%	.989	.942	1.037	1.019	.083	10.4%
1130	1.006	1.005	1.008	1.000	.999	1.002	95.2%	1.000	.998	1.002	1.006	.054	7.5%

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

Commercial Land

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.996	.977	1.015	.989	.974	1.002	95.4%	.869	.794	.944	1.146	.170	22.2%

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

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.968	.957	.979	.959	.948	.972	95.2%	.935	.915	.955	1.035	.122	15.8%

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

Residential Median Ratio Stratification

Sale Price

		Count	Percent
SPRec	\$25K to \$50K	27	0.1%
	\$50K to \$100K	644	2.6%
	\$100K to \$150K	1742	7.1%
	\$150K to \$200K	3237	13.2%
	\$200K to \$300K	5664	23.2%
	\$300K to \$500K	7975	32.6%
	\$500K to \$750K	3466	14.2%
	\$750K to \$1,000K	897	3.7%
	Over \$1,000K	806	3.3%
Overall	24458	100.0%	
Excluded	0		
Total	24458		

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	1.066	1.004	.087	11.2%
\$50K to \$100K	1.027	1.002	.083	11.3%
\$100K to \$150K	1.018	1.001	.066	9.0%
\$150K to \$200K	1.003	1.000	.053	7.5%
\$200K to \$300K	1.001	1.000	.049	7.1%
\$300K to \$500K	.999	1.000	.046	7.7%
\$500K to \$750K	.997	1.001	.047	8.4%
\$750K to \$1,000K	.995	1.000	.060	12.1%
Over \$1,000K	.992	.999	.063	11.9%
Overall	1.000	1.009	.051	8.3%

Subclass
Case Processing Summary

		Count	Percent
abstrimp	0	14	0.1%
	1112	15003	61.3%
	1114	3121	12.8%
	1115	226	0.9%
	1120	91	0.4%
	1125	159	0.7%
	1130	5844	23.9%
Overall		24458	100.0%
Excluded		0	
Total		24458	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.994	1.058	.096	12.9%
1112	1.000	1.008	.049	8.3%
1114	1.001	1.004	.051	8.9%
1115	1.006	1.013	.087	11.7%
1120	1.001	1.012	.089	12.7%
1125	.995	.997	.082	10.5%
1130	1.000	1.006	.054	7.6%
Overall	1.000	1.009	.051	8.3%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	3789	15.5%
	75 to 100	2772	11.3%
	50 to 75	6312	25.8%
	25 to 50	4266	17.4%
	5 to 25	5129	21.0%
	5 or Newer	2190	9.0%
Overall		24458	100.0%
Excluded		0	
Total		24458	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.999	1.017	.069	13.3%
75 to 100	1.001	1.008	.048	7.4%
50 to 75	1.002	1.005	.053	7.7%
25 to 50	1.000	1.024	.054	7.6%
5 to 25	1.000	1.003	.043	6.0%
5 or Newer	1.000	.998	.036	4.9%
Overall	1.000	1.009	.051	8.3%

Improved Size

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	367	1.5%
	500 to 1,000 sf	6779	27.7%
	1,000 to 1,500 sf	8276	33.8%
	1,500 to 2,000 sf	4499	18.4%
	2,000 to 3,000 sf	3353	13.7%
	3,000 sf or Higher	1184	4.8%
Overall		24458	100.0%
Excluded		0	
Total		24458	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.957	1.263	.251	38.3%
500 to 1,000 sf	1.001	1.006	.053	7.5%
1,000 to 1,500 sf	1.000	1.006	.049	6.9%
1,500 to 2,000 sf	1.001	1.003	.043	6.0%
2,000 to 3,000 sf	1.001	1.004	.044	6.9%
3,000 sf or Higher	1.001	1.013	.050	7.1%
Overall	1.000	1.009	.051	8.3%

Improvement Quality

Case Processing Summary

	Count	Percent
quality	7	0.0%
0	192	0.8%
A	862	3.5%
B	6660	27.2%
C	16469	67.3%
C-	6	0.0%
C+	4	0.0%
D	188	0.8%
X	70	0.3%
Overall	24458	100.0%
Excluded	0	
Total	24458	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.846	1.080	.122	17.1%
0	.794	1.165	.410	55.8%
A	1.000	.996	.045	6.2%
B	1.001	1.006	.042	6.1%
C	1.001	1.009	.051	7.3%
C-	1.081	1.009	.046	6.2%
C+	1.077	1.014	.142	19.4%
D	1.006	1.013	.077	10.7%
X	.998	1.022	.044	7.4%
Overall	1.000	1.009	.051	8.3%

Improvement Condition

Case Processing Summary

	Count	Percent
conditionN	509	2.1%
0	192	0.8%
3	18101	74.0%
4	5085	20.8%
5	571	2.3%
Overall	24458	100.0%
Excluded	0	
Total	24458	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.999	1.020	.088	11.8%
0	.794	1.165	.410	55.8%
3	1.000	1.006	.049	7.0%
4	1.002	1.005	.044	6.7%
5	1.000	1.003	.038	5.1%
Overall	1.000	1.009	.051	8.3%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	\$25K to \$50K	2	0.4%
	\$50K to \$100K	12	2.3%
	\$100K to \$150K	12	2.3%
	\$150K to \$200K	11	2.1%
	\$200K to \$300K	46	8.6%
	\$300K to \$500K	105	19.7%
	\$500K to \$750K	89	16.7%
	\$750K to \$1,000K	68	12.8%
	Over \$1,000K	188	35.3%
Overall	533	100.0%	
Excluded	0		
Total	533		

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	.982	1.001	.012	1.7%
\$50K to \$100K	1.097	.999	.092	11.3%
\$100K to \$150K	1.038	1.005	.102	13.5%
\$150K to \$200K	.943	.996	.173	21.8%
\$200K to \$300K	1.058	.999	.158	19.9%
\$300K to \$500K	1.011	1.006	.168	21.6%
\$500K to \$750K	.974	.998	.157	20.8%
\$750K to \$1,000K	.984	.999	.195	28.3%
Over \$1,000K	.974	1.111	.172	22.3%
Overall	.989	1.146	.170	22.4%

Subclass

Case Processing Summary

		Count	Percent
abstrimp	2112	84	15.8%
	2120	134	25.1%
	2125	8	1.5%
	2130	57	10.7%
	2135	157	29.5%
	2140	2	0.4%
	2230	78	14.6%
	3115	13	2.4%
Overall		533	100.0%
Excluded		0	
Total		533	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2112	.976	1.046	.159	20.7%
2120	.984	1.183	.175	25.0%
2125	1.113	1.318	.193	25.8%
2130	.981	1.095	.190	24.2%
2135	1.011	1.030	.174	21.1%
2140	.762	.937	.069	9.7%
2230	.975	1.178	.141	21.1%
3115	1.032	1.020	.107	13.0%
Overall	.989	1.146	.170	22.4%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	373	70.0%
	75 to 100	29	5.4%
	50 to 75	35	6.6%
	25 to 50	46	8.6%
	5 to 25	45	8.4%
	5 or Newer	5	0.9%
Overall		533	100.0%
Excluded		0	
Total		533	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.997	1.068	.174	22.9%
75 to 100	1.054	.969	.150	20.4%
50 to 75	.999	1.000	.169	22.3%
25 to 50	.948	1.198	.162	22.0%
5 to 25	.952	.997	.133	17.0%
5 or Newer	.833	1.014	.025	4.3%
Overall	.989	1.146	.170	22.4%

Improved Size

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	6	1.1%
	500 to 1,000 sf	17	3.2%
	1,000 to 1,500 sf	39	7.3%
	1,500 to 2,000 sf	26	4.9%
	2,000 to 3,000 sf	44	8.3%
	3,000 sf or Higher	401	75.2%
Overall		533	100.0%
Excluded		0	
Total		533	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.067	.983	.081	9.1%
500 to 1,000 sf	.956	1.054	.126	18.5%
1,000 to 1,500 sf	.937	1.025	.148	18.9%
1,500 to 2,000 sf	1.007	1.013	.131	19.4%
2,000 to 3,000 sf	.915	1.024	.188	25.2%
3,000 sf or Higher	.997	1.161	.174	22.9%
Overall	.989	1.146	.170	22.4%

Improvement Quality

Case Processing Summary

		Count	Percent
quality	A	24	4.5%
	A-	2	0.4%
	A+	1	0.2%
	B	70	13.1%
	B-	13	2.4%
	B+	5	0.9%
	C	387	72.6%
	C-	4	0.8%
	C+	12	2.3%
	D	2	0.4%
	X	6	1.1%
	X+	7	1.3%
Overall		533	100.0%
Excluded		0	
Total		533	

Ratio Statistics for currtot / tasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
A	.973	1.126	.127	19.8%
A-	.884	.892	.146	20.7%
A+	.903	1.000	.000	.
B	.964	1.085	.187	28.3%
B-	.974	1.070	.142	20.0%
B+	.916	1.130	.136	19.9%
C	.998	1.034	.166	21.0%
C-	.991	.887	.316	41.7%
C+	.951	1.451	.168	26.2%
D	1.279	.956	.075	10.6%
X	.972	.972	.126	20.3%
X+	1.128	.928	.216	31.8%
Overall	.989	1.146	.170	22.4%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT \$25K	1	0.1%
	\$25K to \$50K	9	1.2%
	\$50K to \$100K	21	2.7%
	\$100K to \$150K	20	2.6%
	\$150K to \$200K	65	8.4%
	\$200K to \$300K	175	22.7%
	\$300K to \$500K	260	33.7%
	\$500K to \$750K	107	13.9%
	\$750K to \$1,000K	47	6.1%
	Over \$1,000K	67	8.7%
Overall		772	100.0%
Excluded		0	
Total		772	

Ratio Statistics for currInd / Vtasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	.862	1.000	.000	.
\$25K to \$50K	1.018	1.011	.133	21.2%
\$50K to \$100K	1.034	.993	.155	19.8%
\$100K to \$150K	1.070	1.003	.089	11.3%
\$150K to \$200K	1.033	.999	.123	16.0%
\$200K to \$300K	.985	1.001	.123	16.1%
\$300K to \$500K	.948	1.002	.108	14.2%
\$500K to \$750K	.929	1.001	.107	14.2%
\$750K to \$1,000K	.944	.997	.124	15.5%
Over \$1,000K	.918	.994	.125	17.0%
Overall	.959	1.035	.122	16.0%

Subclass

Case Processing Summary

		Count	Percent
abstrInd	100	64	8.3%
	101	15	1.9%
	200	23	3.0%
	300	7	0.9%
	510	9	1.2%
	1112	439	56.9%
	1114	130	16.8%
	1115	11	1.4%
	1120	1	0.1%
	1125	5	0.6%
	1130	1	0.1%
	2112	7	0.9%
	2115	2	0.3%
	2120	3	0.4%
	2125	1	0.1%
	2130	38	4.9%
	2135	10	1.3%
	2140	5	0.6%
	2150	1	0.1%
Overall		772	100.0%
Excluded		0	
Total		772	

Ratio Statistics for currInd / Vtasp

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	.925	1.045	.138	18.3%
101	.912	.993	.148	19.8%
200	.938	1.001	.163	21.3%
300	.902	1.065	.185	25.6%
510	1.016	1.037	.117	15.4%
1112	.970	1.029	.114	15.2%
1114	.965	.996	.136	16.4%
1115	.922	1.012	.098	13.2%
1120	.986	1.000	.000	.
1125	.997	1.116	.095	15.0%
1130	.725	1.000	.000	.
2112	.957	1.000	.100	16.7%
2115	.911	.995	.014	2.0%
2120	.918	1.008	.015	2.2%
2125	.806	1.000	.000	.
2130	.943	1.057	.082	12.6%
2135	.983	1.011	.138	19.8%
2140	.994	.922	.091	15.6%
2150	.808	1.000	.000	.
Overall	.959	1.035	.122	16.0%