Kiowa County - Colorado

2016
KIOWA COUNTY
PROPERTY ASSESSMENT
STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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.

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

TABLE OF CONTENTS

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.

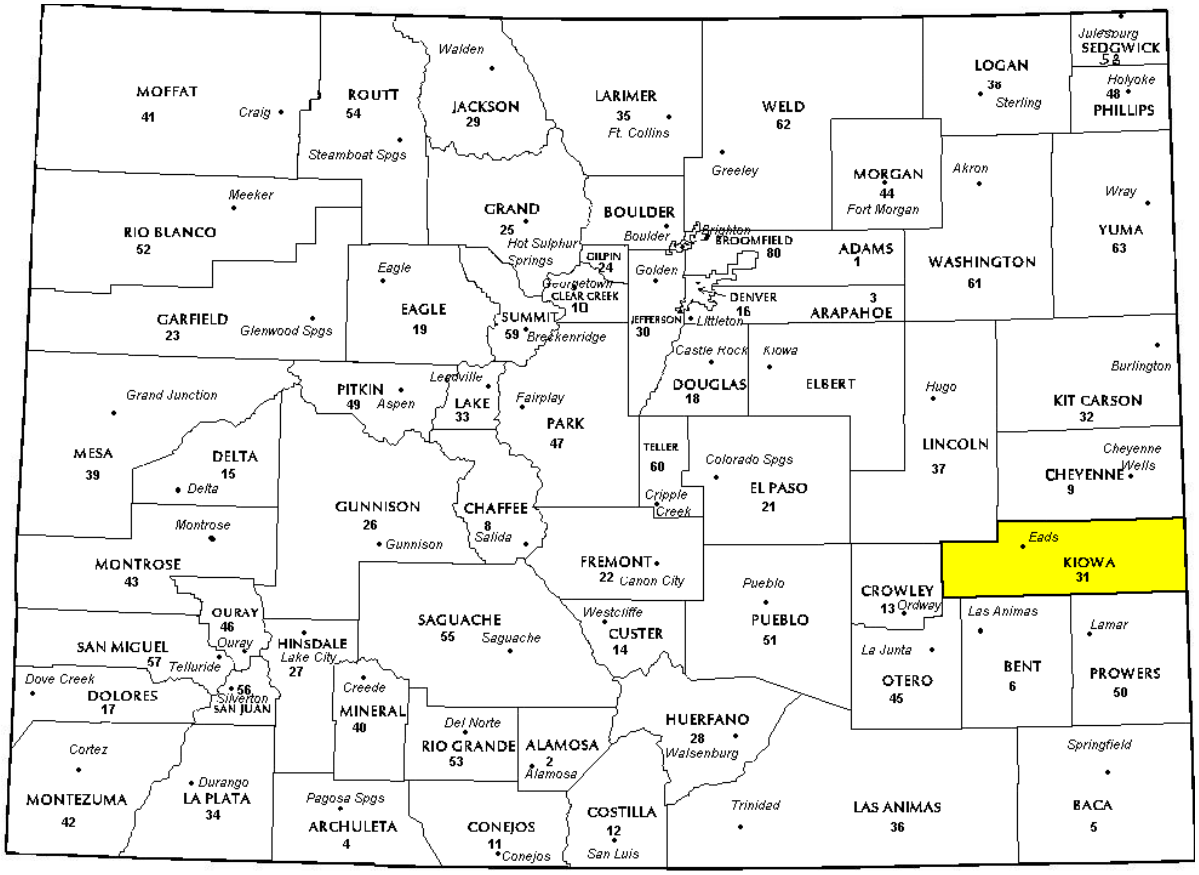
Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

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

REGIONAL / HISTORICAL SKETCH OF KIOWA COUNTY

Regional Information

Kiowa County is located in the Eastern Plains region of Colorado. The Eastern Plains of Colorado refer to the region on the east side of the Rocky Mountain. It is east of the population centers of the Front Range, including Baca, Bent, Cheyenne, Crowley, Elbert, Kiowa, Kit Carson, Lincoln, Logan, Morgan, Otero, Phillips, Prowers, Sedgwick, Washington, and Yuma counties.



Historical Information

Kiowa County had an estimated population of approximately 1,402 people with 0.8 people per square mile, according to the U.S. Census Bureau's 2014 estimated census data. This represents a 0.3 percent change from April 1, 2010 to July 1, 2014.

In the late 1880s, eastern Colorado attracted a lot of attention by farming interests who didn't yet know that long-term agriculture was unsustainable in the arid landscape. At the same time the railroads were snaking west across the plains towards the gold fields of the Rocky Mountains during the Colorado Gold Rush. The Missouri Pacific Railroad crossed into what would soon become Kiowa County, Colorado from Kansas in 1887.

Several small camps for railroad workers were established just over the border from Kansas, and beginning after the town of Sheridan Lake, new towns and camps were sequentially named, alphabetically, starting with "A" and proceeding westward along the railroad line.

Arden, Brandon, Chivington, Diston, Eads, Fergus, Galatea, Haswell, Inman, Joliet, and Kilburn appeared one after another -- some developing into towns, others being only a pipe dream in the eyes of developers. Chivington was intended as a major watering stop for the railroad but the water was too alkaline to use and the trains instead stopped in Kansas to tank up.

Kiowa County was established in 1889, taking its name from the Kiowa Indians who lived in eastern Colorado before the Europeans arrived. Sheridan Lake was the county seat of Kiowa County, and was not at first a stop on the railroad line. It was only after local citizens built a railroad depot and turned it over to the Missouri Pacific that the railroad built a telegraph station and made Sheridan Lake a stop. The county seat moved to rival Eads in 1902.

Wide open spaces makes Kiowa County a perfect place for outdoor activity, from camping and hunting to wildlife watching. The Sand Creek Massacre National Historic Site is located in Kiowa County.
(Wikipedia.org & kiowacounty-colorado.com)

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 Kiowa County are:

Kiowa County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
*Commercial/Industrial	N/A	N/A	N/A	N/A	N/A
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	39	1.023	1.013	7.7	Compliant
Vacant Land	N/A	N/A	N/A	N/A	N/A

**Due to the small number of sales, a procedural audit was performed.*

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

Kiowa 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	N/A
Condominium	N/A
Single Family	Compliant
Vacant Land	N/A

Conclusions

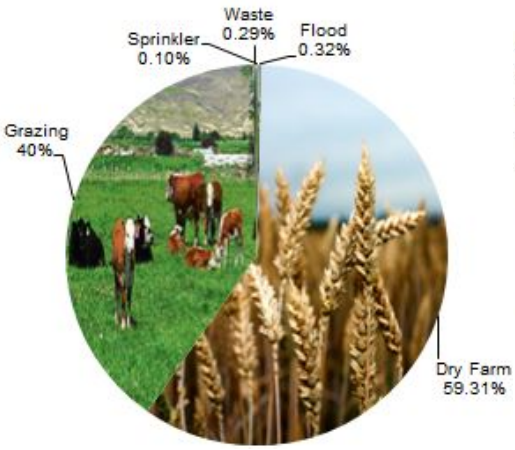
After applying the above described methodologies, it is concluded that Kiowa County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

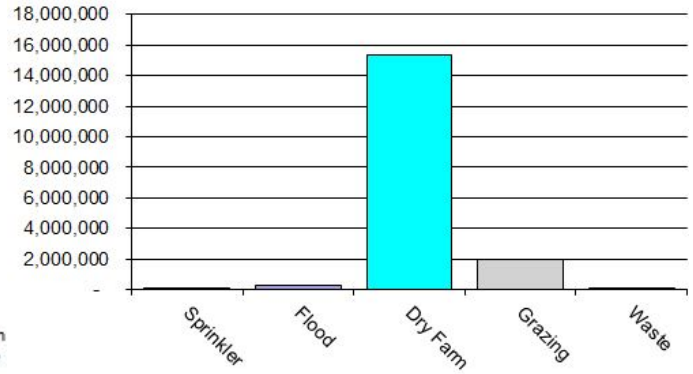
None

AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax Administrator (PTA), were applied properly. (See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

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

Kiowa 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	1,050	66.21	69,519	69,597	1.00
4117	Flood	3,400	85.83	291,816	293,596	0.99
4127	Dry Farm	628,655	22.91	14,403,652	15,342,987	0.94
4147	Grazing	423,754	4.57	1,935,799	1,937,649	1.00
4167	Waste	3,107	1.99	6,172	6,172	1.00
Total/Avg		**1,059,966**	**15.76**	**16,706,958**	**17,650,001**	**0.95**

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

Kiowa 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

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

- Questionnaires
- Field Inspections
- Phone Interviews
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Kiowa 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.:

- Field Inspections
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Kiowa 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 Kiowa County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 32 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

Kiowa 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

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

Recommendations

None

NATURAL RESOURCES

Earth and Stone Products

Methodology

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

Conclusions

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

Recommendations

None

Producing Oil and Gas

Methodology

Assessors Reference Library (ARL) Volume 3, Chapter 6: Valuation of Natural Resources

STATUTORY REFERENCES

Section § 39-1-103, C.R.S., specifies that producing oil or gas leaseholds and lands are valued according to article 7 of title 39, C.R.S.

Actual value determined - when.

(2) The valuation for assessment of leaseholds and lands producing oil or gas shall be determined as provided in article 7 of this title.

§ 39-1-103, C.R.S.

Article 7 covers the listing, valuation, and assessment of producing oil and gas leaseholds and lands.

Valuation:

Valuation for assessment.

(1) Except as provided in subsection (2) of this section, on the basis of the information contained in such statement, the assessor shall value such oil and gas leaseholds and lands for assessment, as real property, at an amount equal to eighty-seven and one-half percent of:

(a) The selling price of the oil or gas sold there from during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year;

(b) The selling price of oil or gas sold in the same field area for oil or gas transported from the premises which is not sold during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year.

§ 39-7-102, C.R.S.

Conclusions

The county applied approved appraisal procedures in the valuation of oil and gas.

Recommendations

None

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2016 in Kiowa 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

Kiowa 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.

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

Kiowa 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

Kiowa 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.

Kiowa 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
- Personal visit to business

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.

Kiowa 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
- Incomplete or inconsistent declarations
- Businesses with no deletions or additions for 2 or more years
- Accounts close to the $7,300 actual value exemption status

Conclusions

Kiowa 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*

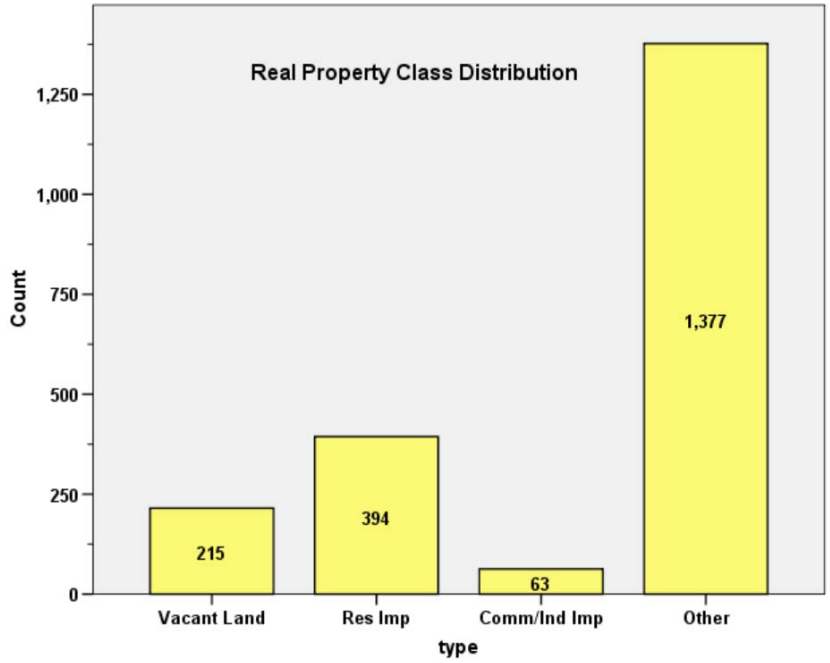
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT
FOR KIOWA COUNTY
2016

I. OVERVIEW

Kiowa County is a rural county located in eastern Colorado. The county has a total of 2,049 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 47.9% of all vacant land parcels. Based on the number of vacant land parcels in Kiowa County, we were not required to analyze this class of property for audit compliance.

For residential improved properties, single family properties accounted for 99.0% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison.

II. DATA FILES

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

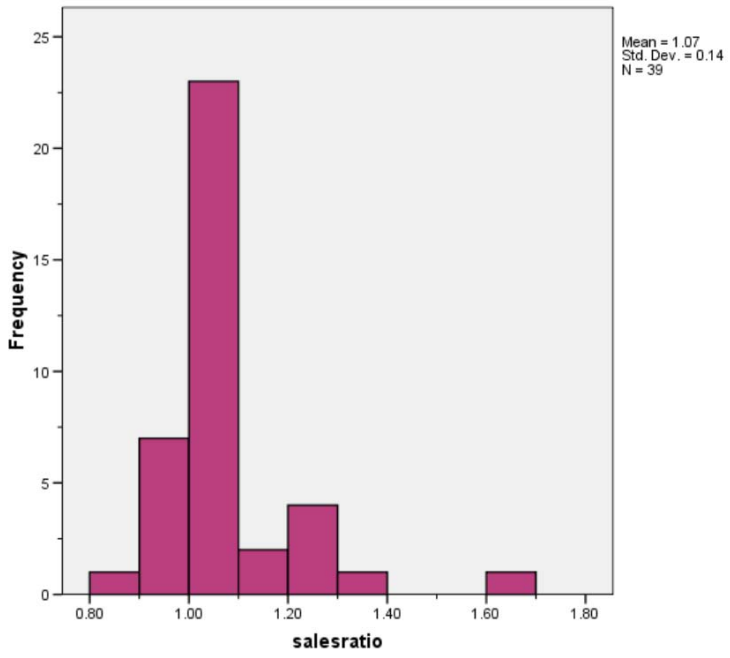
III. RESIDENTIAL SALES RESULTS

For the residential sales ratio analysis, there were 39 residential sales, spanning the period from July 2009 to June 2014. These sales were analyzed with the following results:

Ratio Statistics for CURTOT / TASP

Median	**1.023**
Price Related Differential	**1.013**
Coefficient of Dispersion	**.077**

Please note that two extreme sale ratios were excluded from the above analysis. 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 all of these properties:



The above graphs indicate that the distribution of the sale ratios was within state mandated limits, and that there were no significant price-related differential issues.

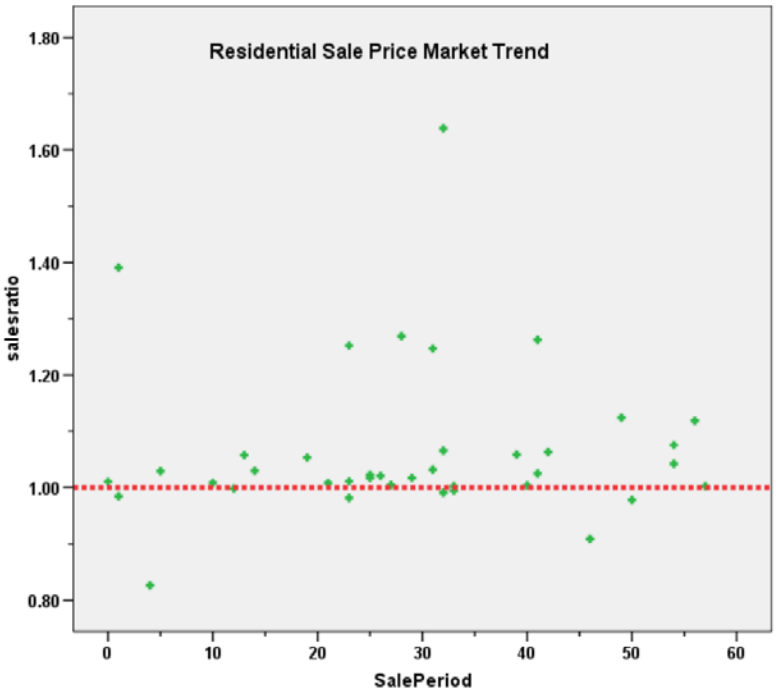
Residential Market Trend Analysis

We next analyzed the residential dataset using the 60-month sale period, with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.057	.047		22.296	.000
	SalePeriod	.000	.001	.042	.256	.799

a. Dependent Variable: salesratio



The above analysis indicated that no residential market trend was present in the sale data. We concur with the assessor that no market trend adjustments were warranted.

Sold/Unsold Analysis

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

Group	No.	Median Val/Sf	Mean Val/SF
Unsold	348	$22	$23
Sold	39	$28	$28

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of ValSF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.006	Reject the null hypothesis.

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

As a second test, we examined the percent change in value between 2014 and 2016 for sold and unsold properties, as follows:

Group	No.	Median Chg Val	Mean Chg Val
Unsold	353	1.04	1.08
Sold	39	1.03	1.11

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	.231	Retain the null hypothesis.

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

The second test indicated that there was no significant difference in the change in value between sold and unsold properties between 2014 and 2016.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

Due to the fact that there were less than 10 commercial/industrial sales in this County between July 2009 and June 2014, this class of properties was not analyzed for sales ratio compliance.

V. AGRICULTURAL IMPROVEMENTS ANALYSIS

The final verification concerned the assigned actual values for agricultural residential improvements. We compared the median actual improved value per square foot for this subclass with the median actual improved value per square foot for single family residential properties in Kiowa County.

The following indicates that both groups were valued in essentially the same manner:

Descriptives

ABSTRIMP				Statistic	Std. Error
ImpValSF	SFR	Mean		$20.91	$.563
		95% Confidence Interval for Mean	Lower Bound	$19.80	
			Upper Bound	$22.02	
		5% Trimmed Mean		$20.24	
		Median		$19.38	
		Variance		120.832	
		Std. Deviation		$10. 992	
		Minimum		$1	
		Maximum		$67	
		Range		$67	
		Interquartile Range		$14	
		Skewness		.954	.125
		Kurtosis		1.610	.249
	Ag Res	Mean		$21.14	$2.137
		95% Confidence Interval for Mean	Lower Bound	$16.84	
			Upper Bound	$25.43	
		5% Trimmed Mean		$19.86	
		Median		$20.41	
		Variance		228.298	
		Std. Deviation		$15.110	
		Minimum		$2	
		Maximum		$84	
		Range		$82	
		Interquartile Range		$23	
		Skewness		1.558	.337
		Kurtosis		4.825	.662

VI. CONCLUSIONS

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

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURR TOTAL / TASP

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.067	1.022	1.113	1.023	1.008	1.058	97.6%	1.054	1.015	1.093	1.013	.077	13.2%

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.

Commercial/Industrial

Not applicable

Vacant Land

Not applicable

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	12	30.8%
	$25K to $50K	13	33.3%
	$50K to $100K	11	28.2%
	$100K to $150K	2	5.1%
	$150K to $200K	1	2.6%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation: Median Centered
LT $25K	1.055	.992	.118	20.1%
$25K to $50K	1.030	.997	.073	12.8%
$50K to $100K	1.011	1.000	.014	1.9%
$100K to $150K	1.139	.999	.115	16.2%
$150K to $200K	.978	1.000	.000	.%
Overall	1.023	1.013	.077	14.4%

Sub Class

Case Processing Summary

		Count	Percent
ABSTRIMP	1212	37	94.9%
	2746	1	2.6%
	3257	1	2.6%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1212	1.023	1.020	.074	14.3%
2746	1.004	1.000	.000	.%
3257	1.269	1.000	.000	.%
Overall	1.023	1.013	.077	14.4%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	5	12.8%
	75 to 100	10	25.6%
	50 to 75	14	35.9%
	25 to 50	6	15.4%
	5 to 25	4	10.3%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	1.002	.986	.026	4.8%
75 to 100	1.010	1.046	.116	23.1%
50 to 75	1.044	1.019	.045	6.7%
25 to 50	1.086	.995	.108	15.4%
5 to 25	1.027	1.013	.064	13.3%
Overall	1.023	1.013	.077	14.4%

Living Area

Case Processing Summary

		Count	Percent
ImpSFRec	500 to 1,000 sf	5	12.8%
	1,000 to 1,500 sf	14	35.9%
	1,500 to 2,000 sf	5	12.8%
	2,000 to 3,000 sf	10	25.6%
	3,000 sf or Higher	5	12.8%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
500 to 1,000 sf	1.053	1.005	.052	9.8%
1,000 to 1,500 sf	1.019	1.011	.101	19.3%
1,500 to 2,000 sf	1.017	1.006	.021	3.4%
2,000 to 3,000 sf	1.042	1.035	.083	13.8%
3,000 sf or Higher	1.008	.993	.059	13.0%
Overall	1.023	1.013	.077	14.4%

Quality

Case Processing Summary

		Count	Percent
QUALITY	AVERAGE	2	5.1%
	FAIR	27	69.2%
	LOW	10	25.6%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
AVERAGE	1.040	1.000	.022	3.1%
FAIR	1.030	1.027	.082	15.7%
LOW	1.008	.979	.070	11.5%
Overall	1.023	1.013	.077	14.4%

Condition

Case Processing Summary

		Count	Percent
CONDITION	FAIR	30	76.9%
	POOR	9	23.1%
Overall		39	100.0%
Excluded		0	
Total		39	

Ratio Statistics for CURR TOTAL / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation: Median Centered
FAIR	1.019	1.012	.052	12.6%
POOR	1.075	.963	.140	17.7%
Overall	1.023	1.013	.077	14.4%

Commercial Median Ratio Stratification

Not applicable

Vacant Land Median Ratio Stratification

Not applicable