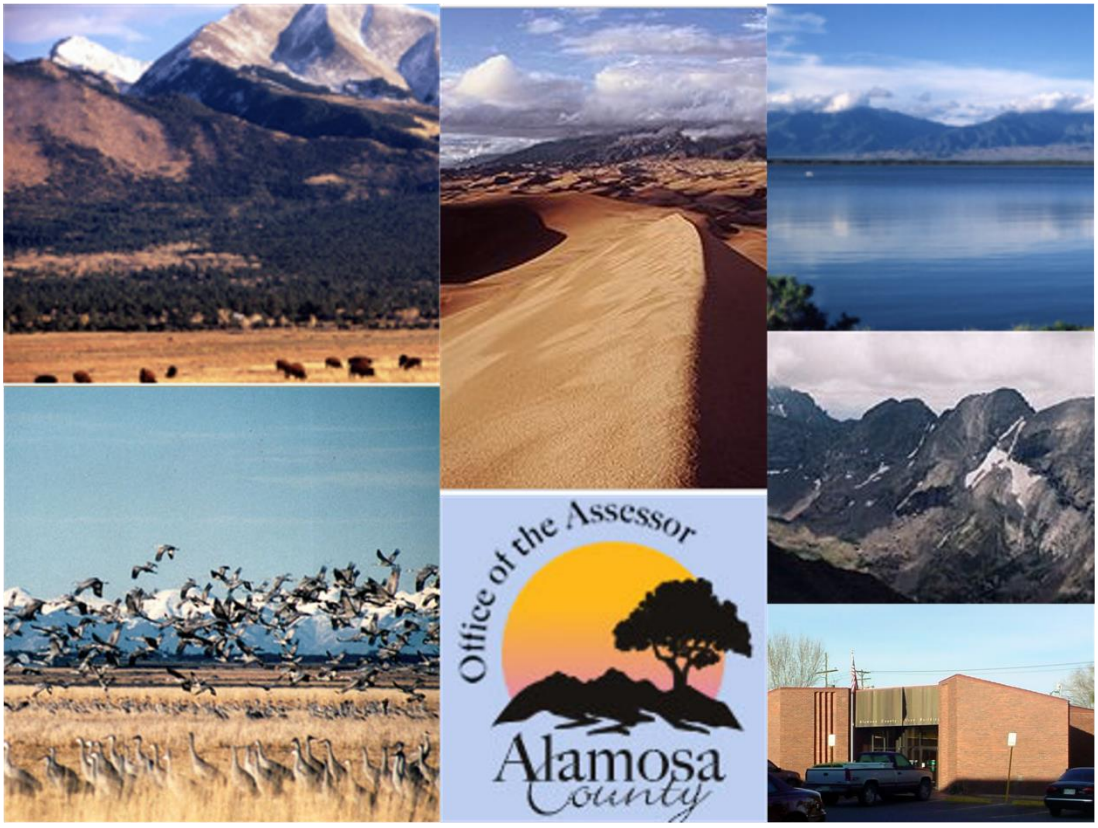
2023
ALAMOSA COUNTY PROPERTY ASSESSMENT STUDY



EastWest ECONOMETRICS

September 15, 2023

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

RE: Final Report for the 2023 Colorado Property Assessment Study

Dear Ms. Castle:

East West Econometrics - Audit Division is pleased to submit the Final Reports for the 2023 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 locally assessed 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.

East West Econometrics – 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
East West Econometrics – 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.

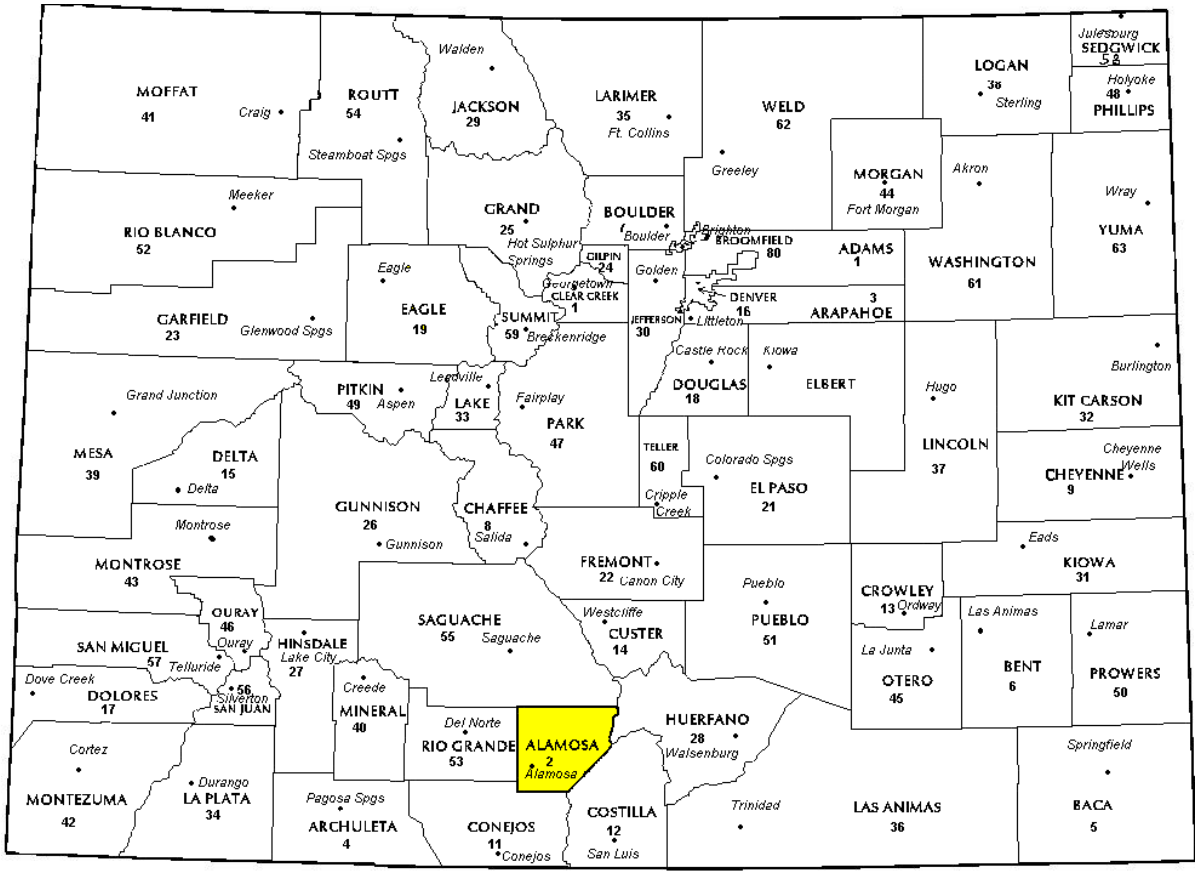
Statistical analysis is performed on vacant land, residential properties, commercial industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

East West Econometrics Audit has completed the Property Assessment Study for 2023 and is pleased to report its findings for Alamosa County in the following report.

Regional / Historical Sketch of Alamosa County

Regional Information

Alamosa County is located in the San Luis Valley region of Colorado. The San Luis Valley is a large, broad, alpine valley in the Rio Grande Basin of south-central Colorado. The valley is drained to the south by the Rio Grande River which rises in the San Juan Mountains to the west of the valley. The San Luis Valley includes Alamosa, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.



Historical Information

Alamosa County has approximately 722.6 square miles and an estimated population of approximately 16,233 people with 21.4 people per square mile, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 5.1 percent change from April 1, 2010 to July 1, 2019.

Alamosa offers majestic mountain views, the winding Rio Grande, clear skies, breathing room, abundant agriculture, a thriving economy, and two institutions of higher learning.

Gold and silver discoveries near Summitville in 1870 fueled the mining rush to the San Luis Valley environs. While other mining settlements quickly followed at Creede and Bonzana, the history of the Valley's settlement was greatly influenced by the railroad, farming, ranching, and timber.

Before written history, native American cultures, including Clovis and Folsom, hunted and gathered in the area 11,000 years ago. Spain claimed the area in the 1500's and established land grants to attract settlers. Clashes with Comanches, however, left the valley largely unsettled for many years. Zebulon Pike, exploring the southern part of the Louisiana Purchase and after his discovery of Pike's Peak, was awed by the view of the Sand Dunes (probably from Medano Pass) in 1807. Until Mexico's liberation from Spain in 1821, Spain claimed the San Luis Valley. The 1850's saw the first permanent settlements.

Just two years after Colorado became a state, a narrow-gauge train loaded with expectant settlers and their belongings stopped at a protected bend in the Rio Grande shaded by a grove of cottonwoods. In 1878 Alamosa, Spanish for cottonwood grove, was founded.

Trains delivered lumber and hardware and left with agricultural products. Over the next ten years rails were laid in all four directions and Alamosa became a veritable center of the San Luis Valley.

The easy access to the mountain regions surrounding the San Luis Valley are a major attraction for visitors and locals alike. Not only a provider of recreation, the forests are a key economic resource. The extensive Rio Grande National Forest first came under government control in 1891 with the authorization of the Timber Reserves Act in 1891. Established to conserve the nation's timber, range and water resources, much of this land has remained unspoiled and public. The Great Sand Dunes National Park (first created as a monument in 1932) and The San Luis Lakes State Park offer outdoor recreation on the valley floor. *(Alamosa.org)*

Ratio Analysis

Methodology

All significant classes of property were analyzed. Sales were collected for each property class over the eighteen month period from January 1, 2021 through June 30th, 2022. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either "Q" or "C." The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were "lost" because of trimming.

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

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

Conclusions

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

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

The results for Alamosa County are:

Alamosa County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	50	1.005	1.033	11.5	Compliant
Residential	225	0.982	1.008	4.5	Compliant
Vacant Land	167	1.000	1.047	14.9	Compliant

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

Alamosa 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
Residential	Compliant
Vacant Land	Compliant

Conclusions

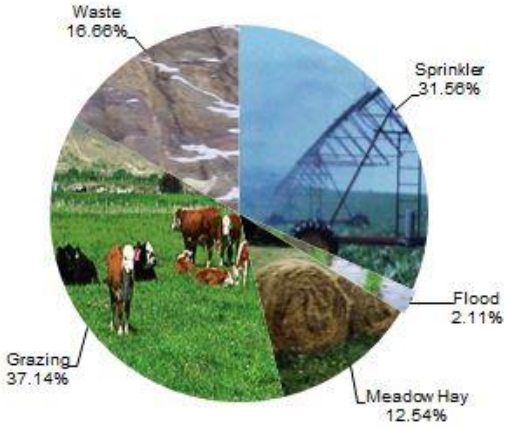
After applying the above described methodologies, it is concluded that Alamosa County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

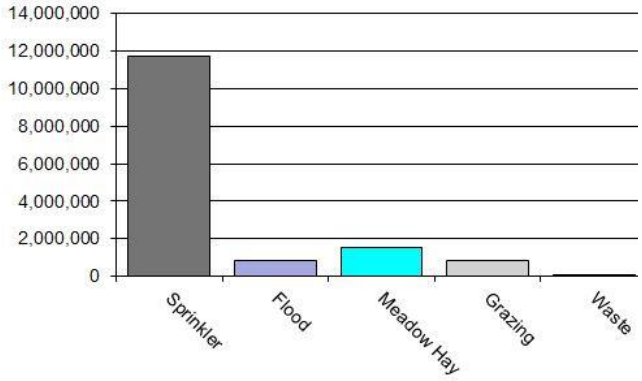
None

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:

Alamosa 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	69,888	173.77	11,700,088	12,096,941	0.97
4117	Flood	4,668	180.02	815,576	836,369	0.98
4137	Meadow Hay	27,765	56.54	1,569,971	1,569,971	1.00
4147	Grazing	82,252	10.49	862,476	862,476	1.00
4167	Waste	36,899	2.19	80,741	80,741	1.00
Total/Avg		**221,472**	**67.86**	**15,028,851**	**15,446,497**	**0.97**

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

Alamosa 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

Alamosa 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
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

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

- Property Record Card Analysis
- Questionnaires
- Field Inspections
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date

Alamosa 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.

EWE reviewed the sales verification procedures in 2023 for Alamosa County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically EWE selected 67 sales listed as unqualified.

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

For residential, commercial, and vacant land sales with considerations over $100,000, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

> The contractor has examined the manner in which sales have been classified as qualified or unqualified, including a listing of each step in the sales verification process, any adjustment procedures, and the county official responsible for making the final decision on qualification.
>
> When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number of properties or by value, from the prior year. The contractor has reviewed with the assessor any analysis indicating that sales data are

inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to determine if the sales included in that code have been assigned appropriately.

If 50 percent or more of the sales are qualified, the contractor has reviewed a statistically significant sample of unqualified sales, excluding sales that were disqualified for obvious reasons.

The following subclasses were analyzed for Alamosa County:

0100 Residential Lots***

Conclusions

Alamosa County appears to be doing an adequate job of verifying their sales. EWE 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

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

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2023 in Alamosa County. The review showed that subdivisions were discounted pursuant to 39-1-103 (14) C.R.S. Discounting procedures were applied to all subdivisions where less than 80 percent of vacant land parcels were sold. An absorption rate was estimated for each discounted subdivision. An appropriate discount rate was developed using the Summation Method, following Division of Property Taxation guidelines.

Conclusions

Alamosa 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.

Alamosa County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural and commercial possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

Conclusions

Alamosa 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

Alamosa 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.

Alamosa County is compliant with the guidelines set forth in ARL Volume 5 regarding discovery procedures, using the following methods to discover personal property accounts in the county:

- Public Record Documents
- Chamber of Commerce/Economic Development Contacts
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Businesses not audited in past 4 years

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.

Alamosa County submitted their personal property written audit plan and was current for the 2023 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
- Non-filing Accounts - Best Information Available
- Accounts protested with substantial disagreement

Conclusions

Alamosa 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

East West Econometrics Auditor Staff

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

Steve Kane, *Audit Statistician*

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

J. Andrew Rodriguez, *Field Analyst*

STATISTICAL APPENDIX

STATISTICAL COMPLIANCE REPORT
FOR ALAMOSA COUNTY
2023

I. OVERVIEW

Alamosa County is located in south central Colorado. The county has a total of 14,576 real property parcels, according to data submitted by the county assessor's office in 2023. 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 72.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for 94.3% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for 3.0% of all such properties in this county.

Based on the Audit questionnaire provided by the assessor, we stratified the sales ratio analysis and sold/unsold analysis by neighborhood.

II. DATA FILES

The following sales analyses were based on the requirements of the 2023 Colorado Property Assessment Study. Information was provided by the Alamosa Assessor's Office in May 2023. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 225 qualified residential sales for the 18 month period ending June 30, 2022, with the following results:

Median	**0.982**
Price Related Differential	**1.008**
Coefficient of Dispersion	**4.5**

We next stratified the sale ratio analysis by neighborhood. The following are the results of this stratification analysis:

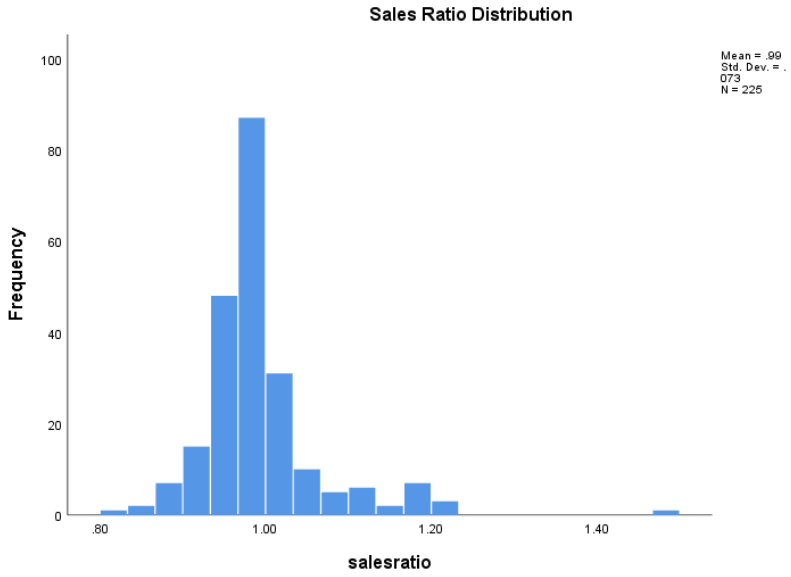
Case Processing Summary

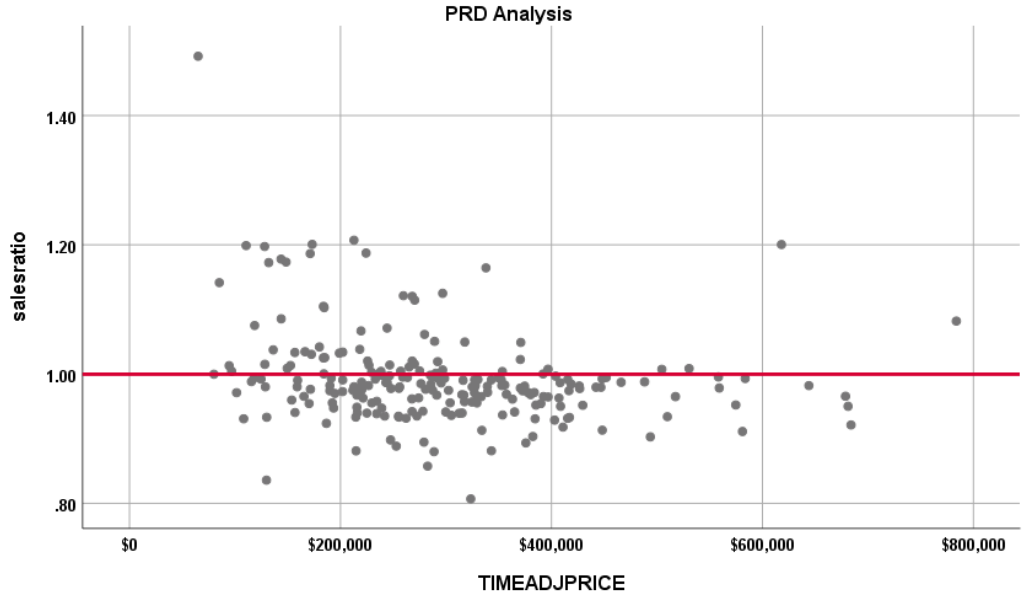
		Count	Percent
NBHD	100	43	19.1%
	200	110	48.9%
	300	9	4.0%
	400	5	2.2%
	500	6	2.7%
	600	3	1.3%
	700	4	1.8%
	800	4	1.8%
	900	2	0.9%
	1000	39	17.3%
Overall		225	100.0%
Excluded		0	
Total		225	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
100	1.000	1.005	.035
200	.982	1.012	.046
1000	.980	.990	.040
Overall	.982	1.008	.045

Overall neighborhoods with sufficient (i.e. more than 20) sales 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:



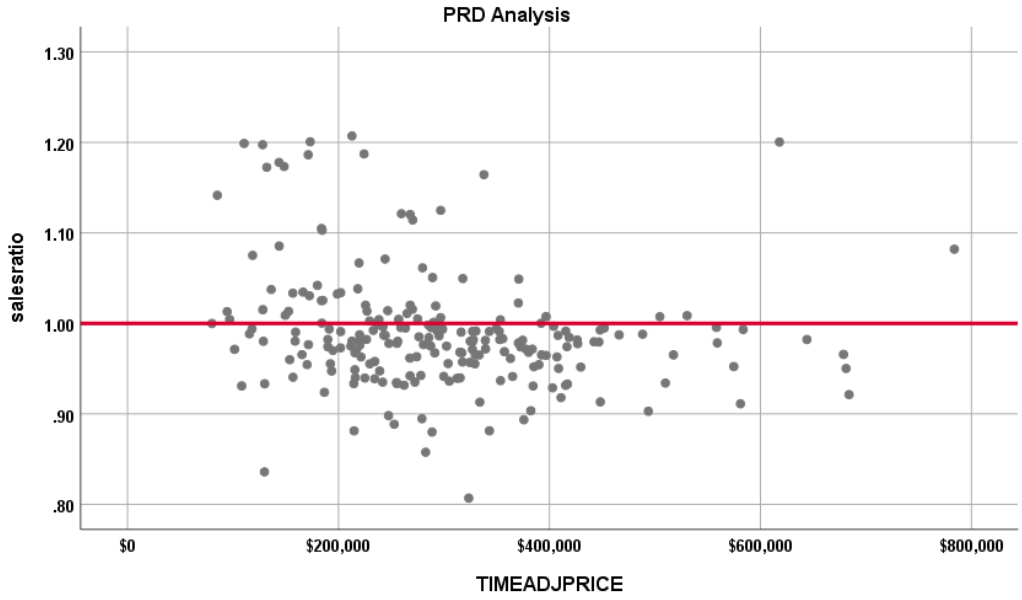


The above graphs indicate that the distribution of the sale ratios was within state mandated limits. No sales were trimmed.

Subclass 1212 PRD Analysis

We next analyzed residential properties identified as 1212 using the state abstract code system (Alamosa County uses the code 11120 for 1212 properties in the sale file). These include single family residences, town homes and purged manufactured homes. The following indicates the distribution of sales ratios across the sale price spectrum:

1212 SALES



NOTE: ONE SALE TRIMMED

The Price-Related Differential (PRD) for 1212 sales is 1.006, which is within IAAO standards for the PRD. We also performed a regression analysis between the sales ratio and the assessor's current value to further test for regressivity or progressivity in the residential sales valuation, as follows:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.003	.011		87.669	.000
	CURRTOT	-.0000000439	.000	-.081	-1.206	.229

a. Dependent Variable: salesratio

The slope of the line at 0.0000000439 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array. This indicates no regressivity or progressivity in the residential values assigned by the assessor.

We also stratified the sales ratio analysis by the sale price range, as follows:

Case Processing Summary

		Count	Percent
SPRec	LT $150K	21	9.5%
	$150K to $250K	67	30.2%
	$250K to $400K	97	43.7%
	$400K to $500K	22	9.9%
	$500K to $750K	14	6.3%
	Over $750K	1	0.5%
Overall		222	100.0%
Excluded		0	
Total		222	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $150K	1.013	.997	.077	10.4%
$150K to $250K	.987	1.002	.044	6.7%
$250K to $400K	.978	1.001	.036	5.5%
$400K to $500K	.979	1.000	.024	3.4%
$500K to $750K	.972	1.000	.042	7.2%
Over $750K	1.082	1.000	.000	.
Overall	.981	1.006	.043	6.7%

The above table indicates no regressivity in the sales ratios across sale price categories.

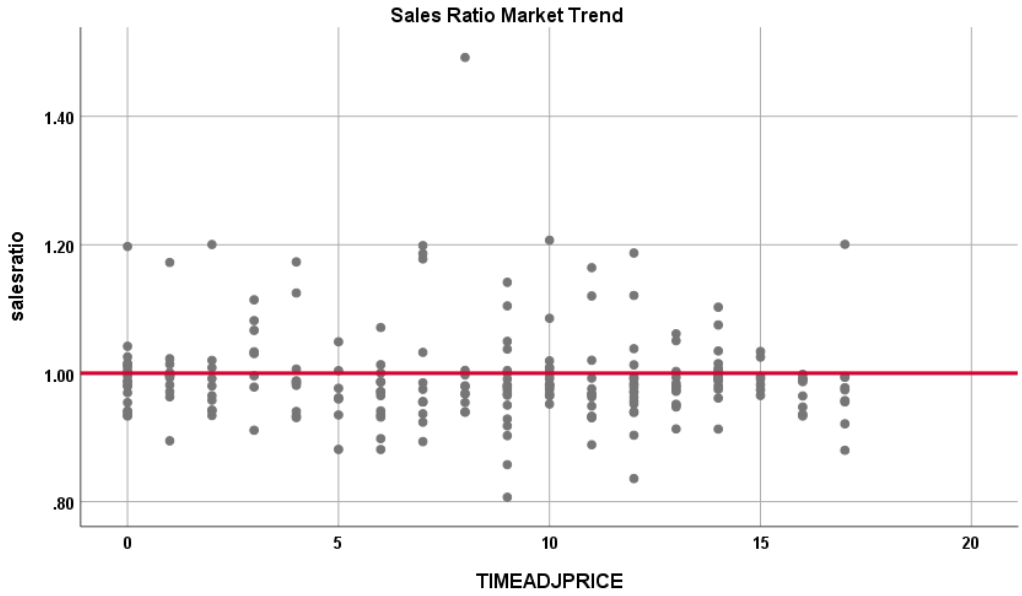
Residential Market Trend Analysis

We next analyzed the residential dataset using the 18-month sale period for any residual market trending, with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.000	.009		105.536	.000
	SalePeriod	-.001	.001	-.059	-.885	.377

a. Dependent Variable: salesratio



The above analysis indicated that the assessor has adequately addressed market trending in the valuation of residential properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median change in actual value between valuation year 2020 and valuation year 2022 for sold and unsold residential properties, both overall and by major neighborhood, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	4292	1.36	1.52
SOLD	225	1.51	1.52

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	.000	Reject the null hypothesis.

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

We next stratified this analysis by neighborhood (with at least 4 sales), as follows:

Report

DIFF

NBHD	sold	N	Median	Mean
100	UNSOLD	1131	1.36	1.50
	SOLD	43	1.52	1.55
200	UNSOLD	1289	1.29	1.35
	SOLD	110	1.45	1.47
300	UNSOLD	220	1.25	1.29
	SOLD	9	1.35	1.47
1000	UNSOLD	945	1.41	1.63
	SOLD	39	1.63	1.61

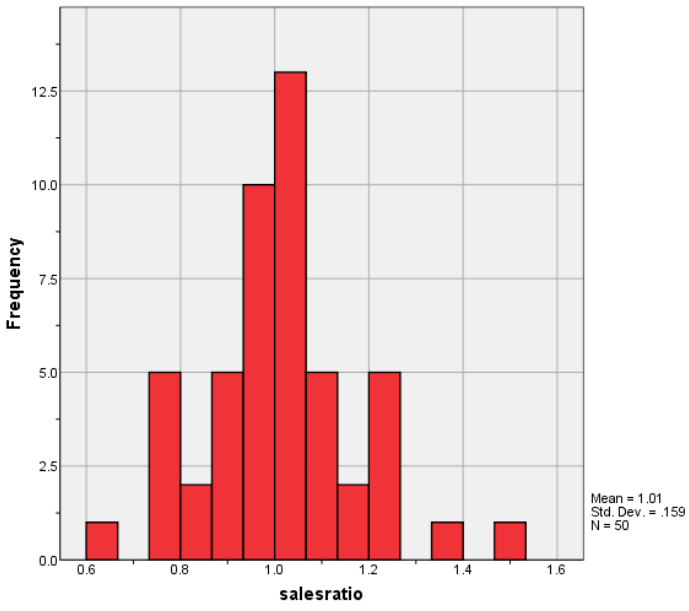
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

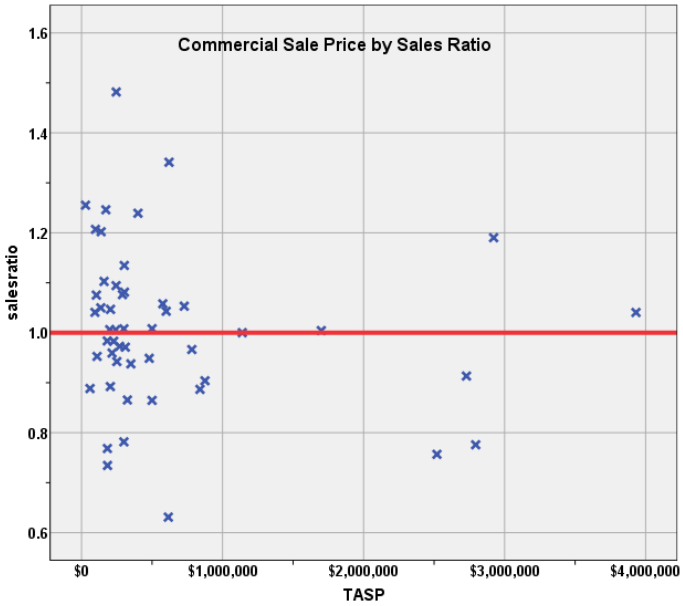
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 51 qualified residential sales for the 60-month sale period ending June 30, 2022. One sale was trimmed using IAAO standards, with the following results:

Median	**1.005**
Price Related Differential	**1.033**
Coefficient of Dispersion	**11.5**

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





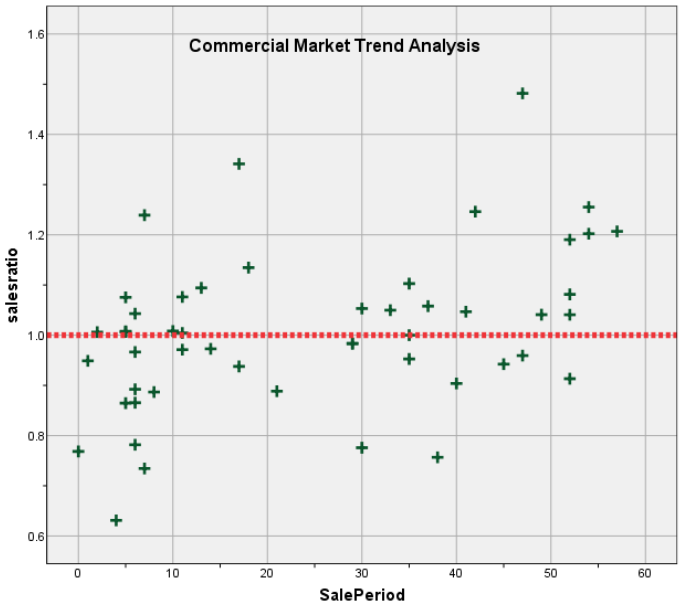
Commercial Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.921	.035		26.382	.000
	SalePeriod	.003	.001	.405	3.069	.004

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concur that no market trend adjustments were warranted for properties in this class for Alamosa County.

Sold/Unsold Analysis

We compared the median and mean change in actual value between valuation year 2020 and valuation year 2022 for sold and unsold commercial properties to determine if the assessor was valuing each group consistently, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	376	1.04	1.25
SOLD	50	1.18	1.39

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	.000	Reject the null hypothesis.

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

We also stratified this analysis by subclass, as follows:

Report

DIFF

ABSTRIMP	sold	N	Median	Mean
2212.00	UNSOLD	65	1.03	1.42
	SOLD	13	1.20	1.44
2215.00	UNSOLD	15	.99	1.16
	SOLD	6	1.05	1.15
2220.00	UNSOLD	57	1.07	1.19
	SOLD	10	1.18	1.30
2230.00	UNSOLD	126	1.04	1.29
	SOLD	14	1.19	1.45

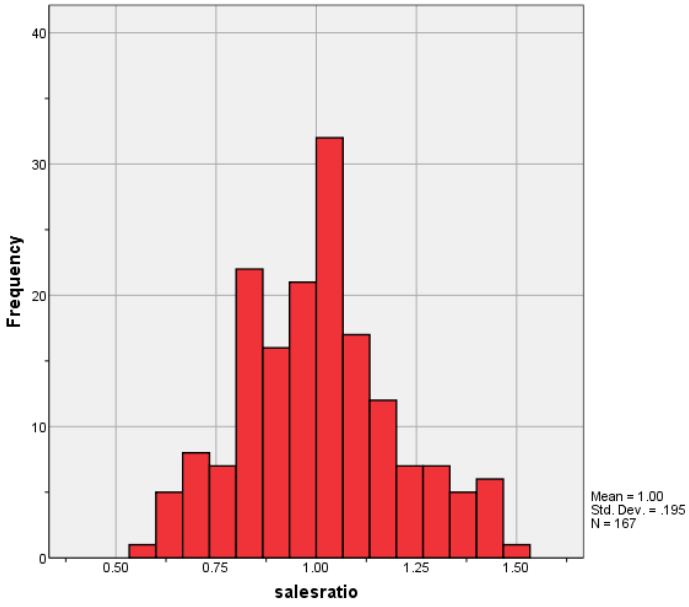
Based on the similarity between sold and unsold commercial properties, we concluded that sold and unsold commercial properties were valued consistently by the assessor.

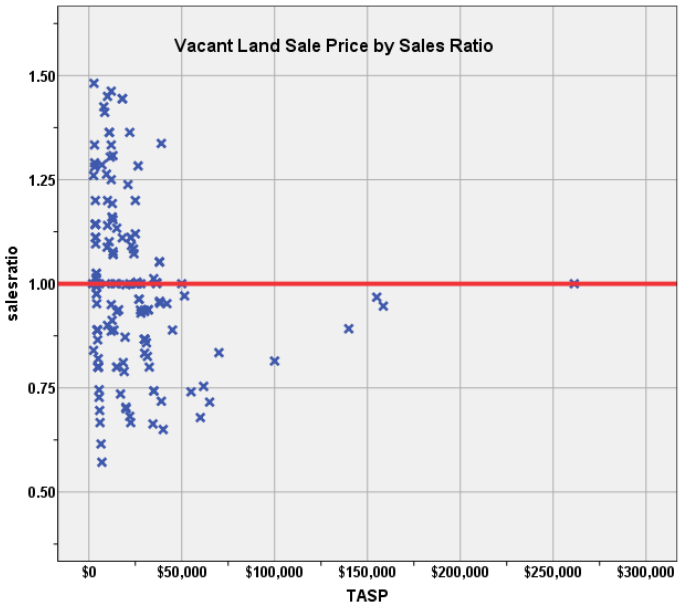
V. VACANT LAND SALE RESULTS

There were 167 qualified residential sales for the 18 month period ending June 30, 2022 used for this analysis, with the following results:

Median	**1.000**
Price Related Differential	**1.047**
Coefficient of Dispersion	**14.9**

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





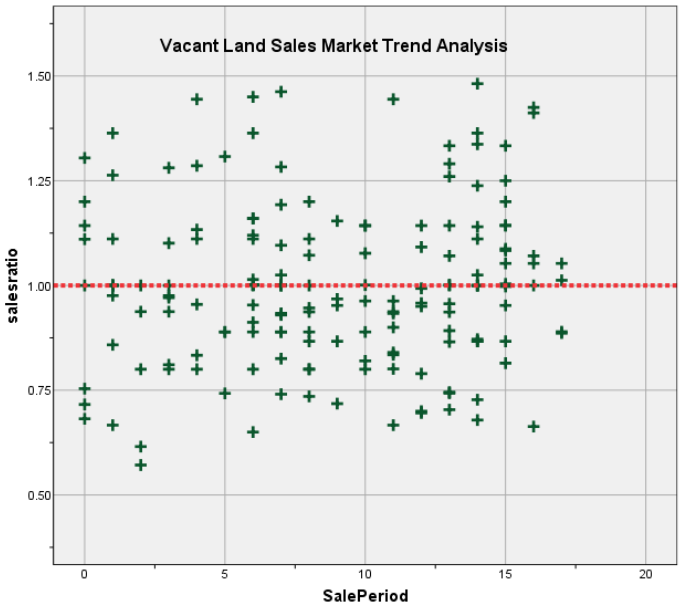
Vacant Land Market Trend Analysis

The assessor did not apply any market trend adjustment to the vacant land dataset. The vacant land sales were analyzed, examining the sale ratios across the 18-month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.973	.031		31.607	.000
	SalePeriod	.003	.003	.074	.951	.343

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concur that no market trend adjustments were warranted for properties in this class for Alamosa County.

Sold/Unsold Analysis

We compared the median change in actual value between valuation year 2020 and valuation year 2022 for vacant land properties to determine if sold and unsold properties were valued consistently. We performed this comparison analysis for the entire class and by subdivisions with at least 5 sales, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	5347	1.17	1.24
SOLD	156	1.18	1.32

Report

DIFF

SUBDIVNO	sold	N	Median	Mean
	UNSOLD	1203	1.18	1.27
	SOLD	44	1.18	1.46
01281	UNSOLD	490	1.11	1.11
	SOLD	9	1.11	1.11
01282	UNSOLD	467	1.11	1.13
	SOLD	12	1.11	1.11
05204	UNSOLD	159	1.11	1.11
	SOLD	6	1.11	1.11
05208	UNSOLD	103	1.11	1.11
	SOLD	5	1.11	1.11
05289	UNSOLD	14	1.20	1.21
	SOLD	9	1.20	1.15
09740	UNSOLD	185	1.20	1.25
	SOLD	8	1.20	1.26
09741	UNSOLD	513	1.50	1.47
	SOLD	14	1.50	1.42

The above results indicated that sold and unsold vacant land properties were valued consistently overall.

VI. CONCLUSIONS

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

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / 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
.992	.983	1.002	.982	.978	.987	95.5%	.985	.976	.993	1.008	.045	7.4%

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

Commercial/Industrial

Ratio Statistics for CURRTOT / TASP												
	95% 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
1.007	.962	1.053	1.005	.959	1.047	96.7%	.975	.903	1.047	1.033	.115	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.

Vacant Land

Ratio Statistics for CURRLND / 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
.998	.969	1.028	1.000	.956	1.001	95.6%	.954	.925	.982	1.047	.149	19.5%

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.

Residential Median Ratio Stratification

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	222	98.7%
	1215.00	2	0.9%
	1716.00	1	0.4%
Overall		225	100.0%
Excluded		0	
Total		225	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.981	1.006	.043	6.7%
1215.00	.995	.999	.003	0.4%
1716.00	1.492	1.000	.000	.
Overall	.982	1.008	.045	7.5%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	22	9.8%
	75 to 100	36	16.0%
	50 to 75	38	16.9%
	25 to 50	47	20.9%
	5 to 25	62	27.6%
	5 or Newer	20	8.9%
Overall		225	100.0%
Excluded		0	
Total		225	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.999	1.014	.067	12.4%
75 to 100	.980	1.010	.051	8.5%
50 to 75	.994	1.008	.047	7.1%
25 to 50	.978	1.002	.038	6.4%
5 to 25	.983	1.002	.040	6.1%
5 or Newer	.973	1.003	.027	3.6%
Overall	.982	1.008	.045	7.5%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	500 to 1,000 sf	22	9.8%
	1,000 to 1,500 sf	84	37.3%
	1,500 to 2,000 sf	62	27.6%
	2,000 to 3,000 sf	50	22.2%
	3,000 sf or Higher	7	3.1%
Overall		225	100.0%
Excluded		0	
Total		225	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
500 to 1,000 sf	.992	1.011	.046	7.6%
1,000 to 1,500 sf	.982	1.007	.046	6.9%
1,500 to 2,000 sf	.976	1.006	.042	6.7%
2,000 to 3,000 sf	.984	1.013	.042	9.0%
3,000 sf or Higher	.987	.999	.066	10.2%
Overall	.982	1.008	.045	7.5%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	03	3	1.3%
	04	101	44.9%
	05	115	51.1%
	06	6	2.7%
Overall		225	100.0%
Excluded		0	
Total		225	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
03	1.141	1.003	.020	3.0%
04	1.000	1.006	.055	9.1%
05	.971	1.000	.027	3.7%
06	.962	1.003	.029	3.9%
Overall	.982	1.008	.045	7.5%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$25K to $50K	1	2.0%
	$50K to $100K	3	6.0%
	$100K to $150K	4	8.0%
	$150K to $200K	6	12.0%
	$200K to $300K	12	24.0%
	$300K to $500K	9	18.0%
	$500K to $750K	5	10.0%
	$750K to $1,000K	3	6.0%
	Over $1,000K	7	14.0%
Overall		50	100.0%
Excluded		0	
Total		50	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$25K to $50K	1.255	1.000	.000	.
$50K to $100K	1.041	.978	.102	15.3%
$100K to $150K	1.063	.994	.065	9.7%
$150K to $200K	.995	1.005	.145	19.8%
$200K to $300K	.995	1.002	.099	17.1%
$300K to $500K	.971	1.006	.097	13.4%
$500K to $750K	1.053	.999	.138	24.3%
$750K to $1,000K	.904	1.001	.029	5.1%
Over $1,000K	1.000	.997	.113	16.1%
Overall	1.005	1.033	.115	15.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	2212.00	13	26.0%
	2215.00	6	12.0%
	2220.00	10	20.0%
	2230.00	14	28.0%
	2235.00	4	8.0%
	2245.00	2	4.0%
	3215.00	1	2.0%
Overall		50	100.0%
Excluded		0	
Total		50	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2212.00	1.043	.980	.080	10.6%
2215.00	.961	1.015	.092	11.9%
2220.00	1.030	1.032	.138	19.3%
2230.00	.992	1.084	.095	14.6%
2235.00	.970	.934	.130	18.0%
2245.00	.751	1.000	.023	3.2%
3215.00	.631	1.000	.000	.
Overall	1.005	1.033	.115	15.9%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	8	16.0%
	75 to 100	7	14.0%
	50 to 75	5	10.0%
	25 to 50	14	28.0%
	5 to 25	15	30.0%
	5 or Newer	1	2.0%
Overall		50	100.0%
Excluded		0	
Total		50	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.085	1.020	.057	7.6%
75 to 100	1.006	1.003	.048	6.9%
50 to 75	.953	1.113	.155	23.8%
25 to 50	1.027	1.095	.160	20.8%
5 to 25	.959	.960	.096	12.8%
5 or Newer	1.000	1.000	.000	.
Overall	1.005	1.033	.115	15.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	500 to 1,000 sf	2	4.0%
	1,000 to 1,500 sf	4	8.0%
	1,500 to 2,000 sf	4	8.0%
	2,000 to 3,000 sf	8	16.0%
	3,000 sf or Higher	32	64.0%
Overall		50	100.0%
Excluded		0	
Total		50	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
500 to 1,000 sf	.751	1.000	.023	3.2%
1,000 to 1,500 sf	1.141	1.022	.076	9.0%
1,500 to 2,000 sf	.980	.964	.062	8.1%
2,000 to 3,000 sf	1.004	.992	.137	18.6%
3,000 sf or Higher	.994	1.038	.107	15.6%
Overall	1.005	1.033	.115	15.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	03	1	2.0%
	04	44	88.0%
	05	2	4.0%
	06	2	4.0%
	07	1	2.0%
Overall		50	100.0%
Excluded		0	
Total		50	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
03	1.008	1.000	.000	.
04	1.005	1.030	.116	15.7%
05	.969	.983	.032	4.5%
06	1.191	1.101	.126	17.8%
07	.776	1.000	.000	.
Overall	1.005	1.033	.115	15.9%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	112	67.1%
	$25K to $50K	44	26.3%
	$50K to $100K	7	4.2%
	$100K to $150K	1	0.6%
	$150K to $200K	2	1.2%
	$200K to $300K	1	0.6%
Overall		167	100.0%
Excluded		0	
Total		167	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.008	.998	.166	20.9%
$25K to $50K	.953	1.000	.094	13.8%
$50K to $100K	.754	1.000	.092	13.8%
$100K to $150K	.892	1.000	.000	.
$150K to $200K	.957	1.000	.011	1.6%
$200K to $300K	1.000	1.000	.000	.
Overall	1.000	1.047	.149	19.5%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	98	58.7%
	200.00	1	0.6%
	520.00	5	3.0%
	530.00	5	3.0%
	540.00	2	1.2%
	550.00	36	21.6%
	560.00	2	1.2%
	1112.00	17	10.2%
	1122.50	1	0.6%
Overall		167	100.0%
Excluded		0	
Total		167	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	1.000	1.072	.158	19.8%
200.00	1.337	1.000	.000	.
520.00	1.160	1.054	.141	20.8%
530.00	.938	1.075	.210	33.0%
540.00	.868	.981	.153	21.6%
550.00	.963	1.046	.150	20.8%
560.00	.863	.989	.033	4.7%
1112.00	1.002	1.004	.050	9.5%
1122.50	1.000	1.000	.000	.
Overall	1.000	1.047	.149	19.5%