2023
RIO GRANDE 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.

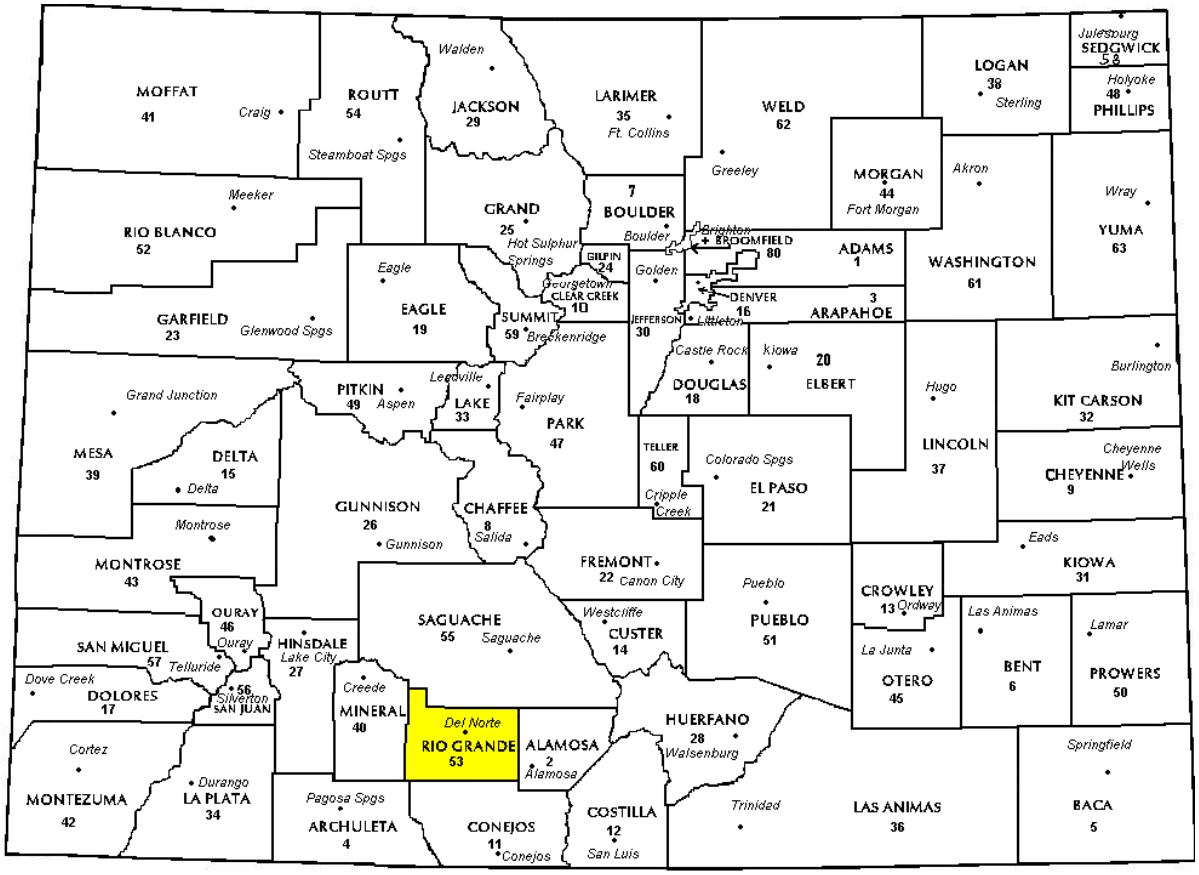
Statistical analysis is performed on vacant land, residential properties, commercial industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

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

Regional / Historical Sketch of Rio Grande County

Regional Information

Rio Grande 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

Rio Grande County has approximately 912 square miles and an estimated population of approximately 11,267 people with 13.1 people per square mile, according to the U.S. Census Bureau's 2020 estimated census data. This represents a -6.0 percent change from April 1, 2010 to July 1, 2019.

The gateway to the San Juan Mountains, Rio Grande County is one of the highlights of the San Luis Valley. The county covers 913 square miles ranging from around 7,000 feet on valley floor to numerous 13,000-foot peaks. The scenic landscape and close community make Rio Grande County a great place to vacation, work and live. There are three municipalities within the county, Monte Vista, Del Norte, and South Fork and all have been historically developed along the rail line that follows the Rio Grande River.

Monte Vista is the county's largest community situated on the valley floor and is the center of the agricultural aspect of the county. There are numerous festivals and events that take place in and around Monte Vista. The Monte Vista National Wildlife Refuge is a stop for migratory Sand Hill Cranes every year.

Del Norte is a quaint town with a focus on its historic past. It is the county seat, home to the Rio Grande County Museum, and maintains a historic façade on its main street. Home to many small shops and boutiques, it is a beautiful place to shop and also provides recreational activity with climbing, hiking, and fishing close by.

The newest town in Rio Grande County is South Fork. South Fork is surrounded by the Rio Grande National Forest and other public lands and has easy access to Wolf Creek Ski Area. Developed as a logging center, it has become a gem of the Valley with a booming housing market, world class 18 hole golf course, and the distinction of being the Gateway to the Silver Thread scenic byway.
(www.riograndecounty.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 Rio Grande County are:

Rio Grande County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	51	1.019	1.055	15.4	Compliant
Residential	324	0.995	1.032	13.6	Compliant
Vacant Land	261	0.972	1.081	19.6	Compliant

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

Rio Grande 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

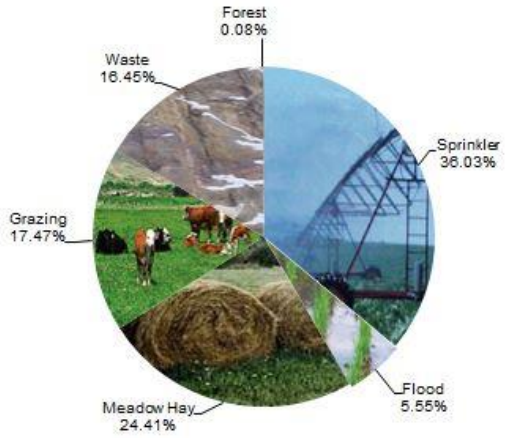
After applying the above described methodologies, it is concluded that Rio Grande County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

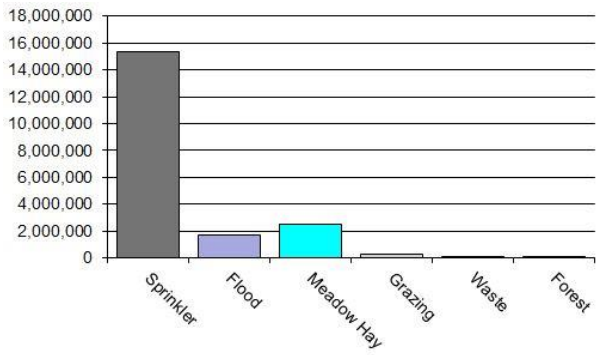
None

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:

Rio Grande 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	67,861	226.05	15,339,876	15,178,428	1.00
4117	Flood	10,459	165.80	1,734,064	1,736,503	0.99
4137	Meadow Hay	45,976	53.67	2,467,687	2,468,964	1.00
4147	Grazing	32,904	8.37	275,282	275,282	1.00
4177	Forest	143	14.95	2,144	2,144	1.00
4167	Waste	30,983	2.19	67,796	67,796	1.00
Total/Avg		**188,326**	**105.60**	**19,886,849**	**19,729,117**	**1.01**

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

Rio Grande 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

Rio Grande 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
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date

Rio Grande 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
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Aerial Photography/Pictometry

Rio Grande 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 Rio Grande 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 Rio Grande County:

0100 Residential Lots

Conclusions

Rio Grande 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

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

Rio Grande 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.

Rio Grande 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

Rio Grande 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

Rio Grande 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.

Rio Grande 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
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

The county uses the Division of Property Taxation (DPT) recommended classification and documentation procedures. The DPT's recommended cost factor tables, depreciation tables and level of value adjustment factor tables are also used.

Rio Grande 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:

- Incomplete or inconsistent declarations
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- Accounts close to the $52,000 actual value exemption status
- Accounts protested with substantial disagreement

Conclusions

Rio Grande 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 RIO GRANDE COUNTY
2023

I. OVERVIEW

Rio Grande County is located in south central Colorado. The county has a total of 12,680 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 71.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for 96.1% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 4.3% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2023 Colorado Property Assessment Study. Information was provided by the Rio Grande 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 325 qualified residential sales for 24-month period ending June 30, 2022. One sale was trimmed using IAAO standards, resulting in a final count of 324 residential sales. The results were as follows:

Median	**0.995**
Price Related Differential	**1.032**
Coefficient of Dispersion	**13.6**

We next stratified the sale ratio analysis by economic area and neighborhoods with at least 10 sales, as follows:

Economic Area

Case Processing Summary

		Count	Percent
ECONAREA	1.00	118	36.4%
	2.00	10	3.1%
	3.00	42	13.0%
	4.00	149	46.0%
	5.00	5	1.5%
Overall		324	100.0%
Excluded		0	
Total		324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	1.008	1.038	.123
2.00	.986	1.028	.098
3.00	1.004	1.046	.145
4.00	.984	1.020	.145
5.00	.911	1.034	.128
Overall	.995	1.032	.136

Neighborhoods with at least 10 sales

Case Processing Summary

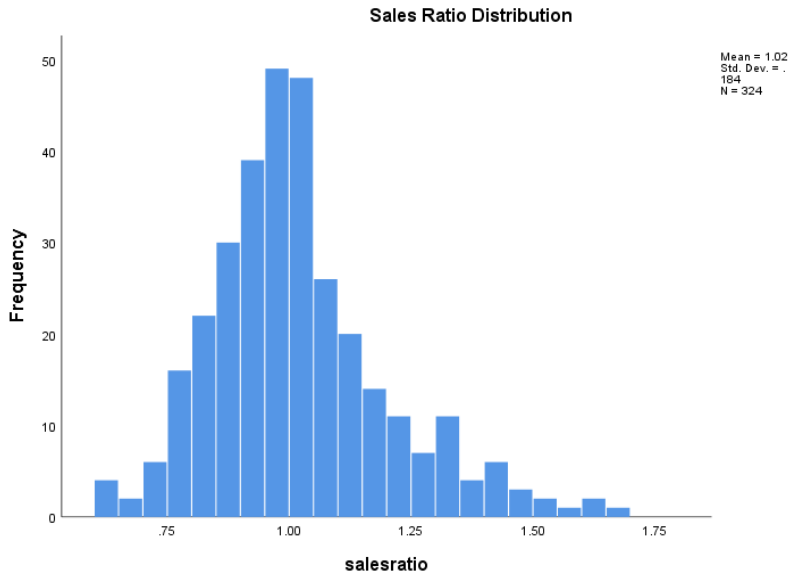
		Count	Percent
NBHD	1100	22	11.9%
	1102	29	15.7%
	1300	12	6.5%
	1400	12	6.5%
	1600	18	9.7%
	3100	12	6.5%
	4100	18	9.7%
	4500	39	21.1%
	4507	13	7.0%
	4900	10	5.4%
Overall		185	100.0%
Excluded		0	
Total		185	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1100	1.010	1.047	.124
1102	.993	1.021	.118
1300	.971	1.021	.110
1400	.963	1.039	.153
1600	1.014	1.067	.146
3100	1.003	1.029	.159
4100	1.033	1.011	.174
4500	.996	1.014	.131
4507	1.021	1.003	.049
4900	.957	1.035	.130
Overall	1.006	1.027	.131

While the sales ratio results were compliant at the class and economic area levels (with sufficient sales), with only one neighborhood (NBHD 4100) with a COD above the 15.99 limit; there were only 18 sales in this neighborhood.

The following graph describes further the sales ratio distribution for these properties:

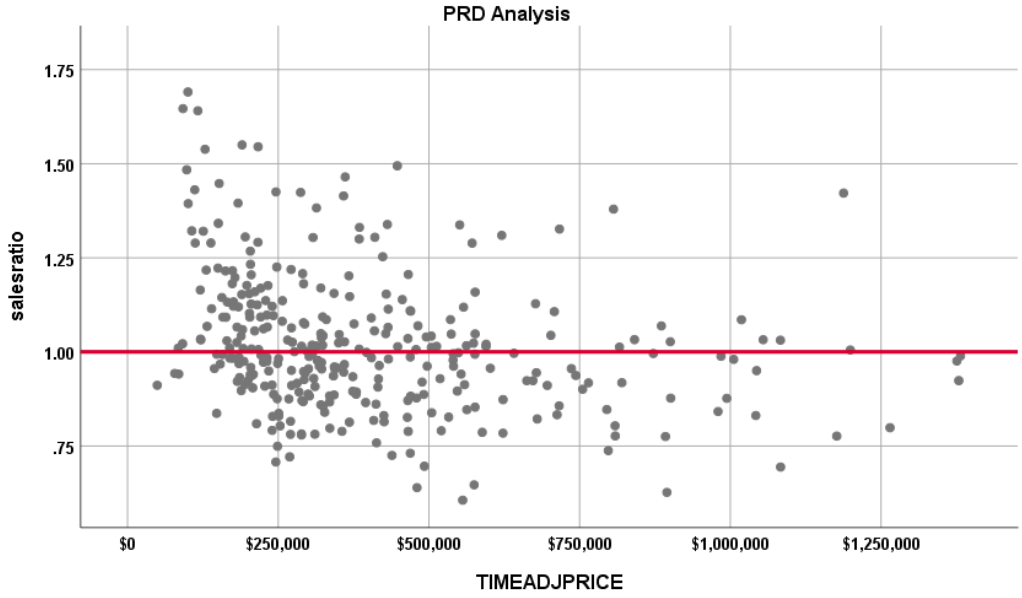


The above graph indicates that the distribution of the sale ratios was within state mandated limits.

Subclass 1212 PRD Analysis

We next analyzed residential properties identified as 1212 using the state abstract code system. 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



The Price-Related Differential (PRD) for 1212 sales is 1.032, which is just above the 1,03 upper limit under 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 B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.025	.019		53.123	.000
	CURRTOT	-1.348E-8	.000	-.018	-.325	.745

a. Dependent Variable: salesratio

The slope of the line was not statistically significant with a t value of -0.32. This indicates that there is virtually no slope in the regression line (i.e. the residential sales ratios are similar across the entire sale price array). Based on this result, we concluded that there was no evidence of 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	26	8.0%
	$150K to $200K	37	11.4%
	$200K to $250K	45	13.9%
	$250K to $300K	34	10.5%
	$300K to $400K	58	17.9%
	$400K to $500K	42	13.0%
	Over $500K	82	25.3%

Overall	324	100.0%
Excluded	0	
Total	324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $150K	1.191	1.001	.176	21.1%
$150K to $200K	1.066	1.002	.111	14.9%
$200K to $250K	1.056	1.003	.126	16.0%
$250K to $300K	.946	.999	.124	16.2%
$300K to $400K	.975	.999	.112	16.2%
$400K to $500K	.983	1.002	.144	18.5%
Over $500K	.956	1.003	.122	16.5%
Overall	.995	1.032	.136	18.6%

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

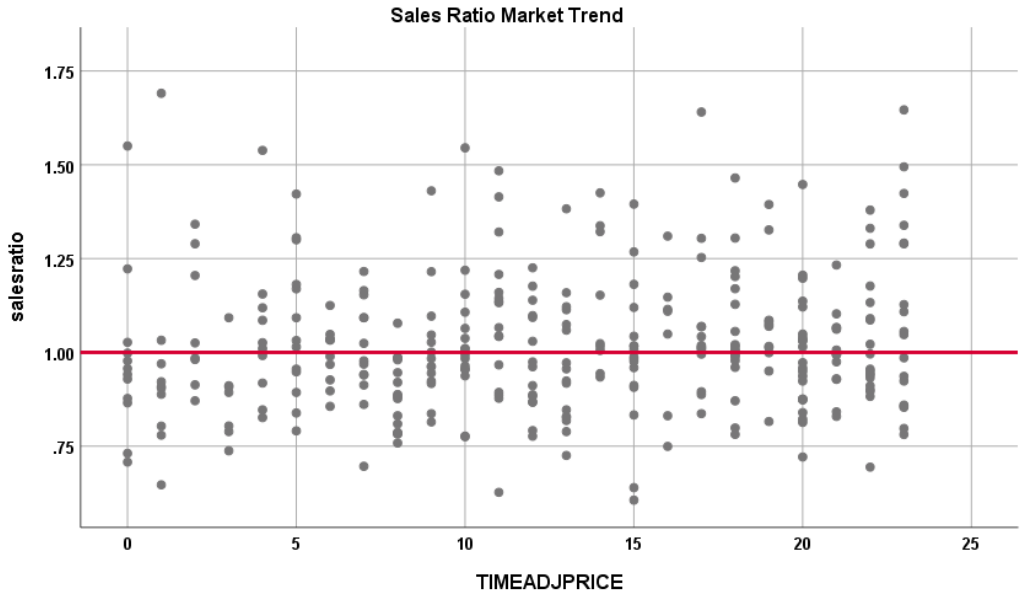
Residential Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.984	.021		45.909	.000
	SalePeriod	.003	.001	.104	1.870	.062

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 for taxable year 2020 and taxable year 2022 between sold and unsold residential properties, as follows:

Report
DIFF

sold	N	Median	Mean
UNSOLD	4717	1.62	2.06
SOLD	324	1.56	1.58

We next stratified this analysis by economic area and by neighborhoods with at least 10 sales, as follows:

Economic Area

Report
DIFF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	2033	1.58	1.84
	SOLD	118	1.51	1.52
2.00	UNSOLD	250	1.31	1.48
	SOLD	10	1.33	1.30
3.00	UNSOLD	873	1.84	2.27
	SOLD	42	1.59	1.72
4.00	UNSOLD	1323	1.60	1.96
	SOLD	149	1.60	1.61
5.00	UNSOLD	110	1.81	2.20
	SOLD	5	1.40	1.39

Neighborhoods with at least 10 Sales

Report
DIFF

NBHD	sold	N	Median	Mean
1100	UNSOLD	370	1.64	1.76
	SOLD	22	1.58	1.56
1102	UNSOLD	314	1.59	1.68
	SOLD	29	1.62	1.61
1600	UNSOLD	247	1.26	1.49
	SOLD	18	1.23	1.39
4100	UNSOLD	167	1.71	1.73
	SOLD	18	1.71	1.72
4500	UNSOLD	132	1.56	2.04
	SOLD	39	1.54	1.51

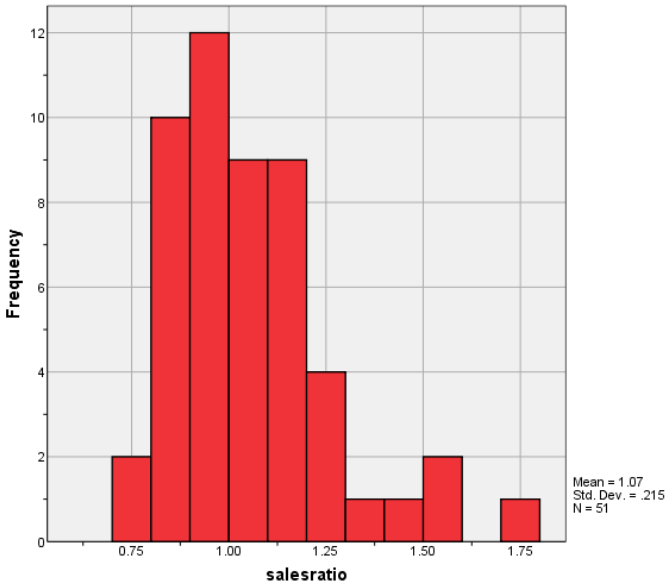
Based on these results, we concluded that the assessor valued sold and unsold residential properties consistently in 2023.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 51 commercial/industrial qualified sales for the 36-month period ending June 30, 2022. The sales ratio analysis results were as follows:

Median	**1.019**
Price Related Differential	**1.055**
Coefficient of Dispersion	**15.4**

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



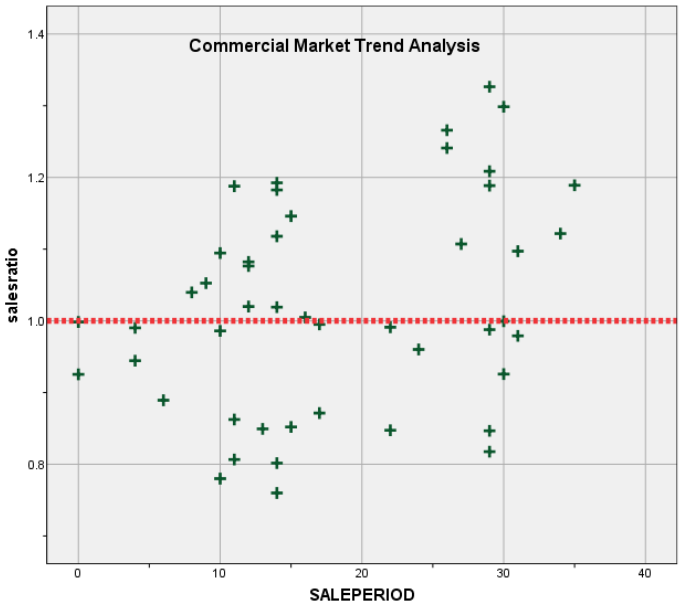
Commercial Market Trend Analysis

The commercial sales were next analyzed, examining the sale ratios across the 3 year sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.929	.044		21.163	.000
	SALEPERIOD	.005	.002	.328	2.332	.024

a. Dependent Variable: salesratio



The above results indicate that there was no significant market trend residual in the commercial/industrial sale ratios.

Sold/Unsold Analysis

We compared the median change in value between taxable year 2020 and taxable year 2022 for sold and unsold commercial/industrial properties to determine if the assessor was valuing each group consistently.

Report

DIFF

sold	N	Median	Mean
UNSOLD	491	1.23	1.31
SOLD	51	1.32	1.52

Report
DIFF

ABSTRIMPMAJOR	sold	N	Median	Mean
1212	UNSOLD	20	1.28	1.35
	SOLD	2	1.54	1.54
2212	UNSOLD	77	1.27	1.37
	SOLD	8	1.64	1.79
2215	UNSOLD	7	1.45	1.64
	SOLD	1	2.31	2.31
2220	UNSOLD	50	1.24	1.31
	SOLD	11	1.28	1.50
2225	UNSOLD	11	1.26	2.20
	SOLD	1	1.38	1.38
2230	UNSOLD	121	1.26	1.33
	SOLD	13	1.38	1.36
2235	UNSOLD	166	1.00	1.15
	SOLD	14	1.33	1.52

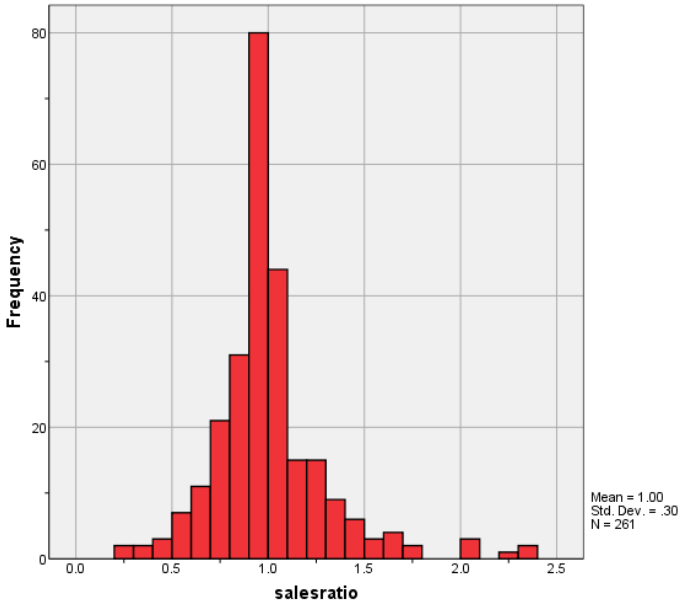
While there are differences in the average change in value between sold and unsold commercial properties, the number of sales and the amount of subclasses made it not possible to draw any conclusions.

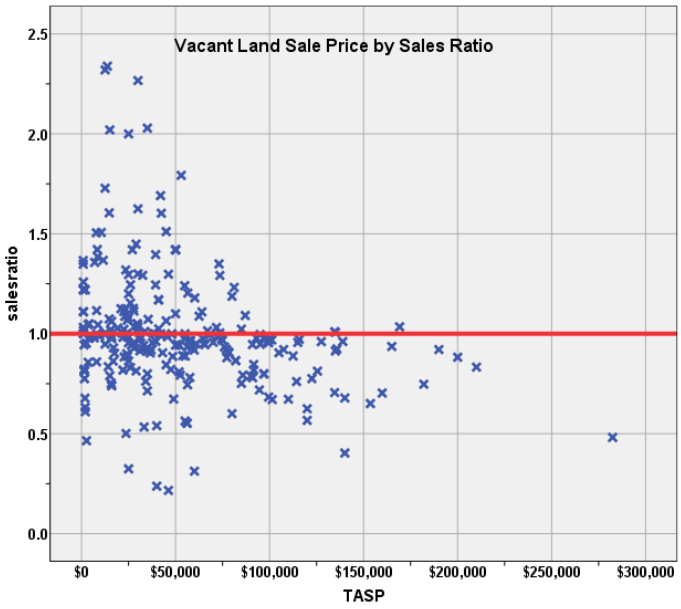
V. VACANT LAND SALE RESULTS

There were 261 qualified vacant land sales for the 24-month period ending June 30, 2022. These sales were analyzed as follows:

Median	**0.972**
Price Related Differential	**1.081**
Coefficient of Dispersion	**19.6**

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





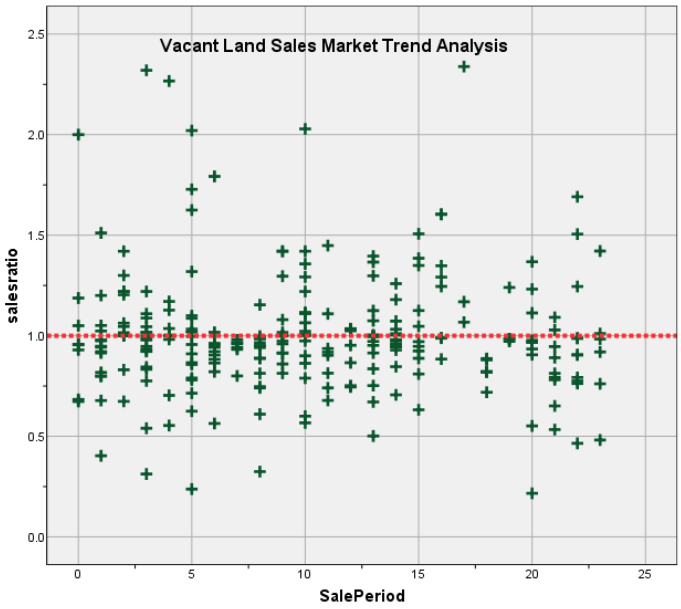
Vacant Land Market Trend Analysis

The vacant land sales were analyzed, examining the sale ratios across the 24 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.016	.034		29.703	.000
	SalePeriod	-.002	.003	-.033	-.533	.595

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 Rio Grande County.

Sold/Unsold Analysis

We compared the median change in actual value between taxable year 2020 and taxable year 2022 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	3936	1.22	1.47
SOLD	261	1.29	1.33

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	.590	Retain the null hypothesis.

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

We also stratified this analysis by subdivisions with at least 3 sales:

Report

DIFF

SUBDIVNO	sold	N	Median	Mean
40	UNSOLD	48	1.17	1.05
	SOLD	12	1.17	1.14
60	UNSOLD	225	1.22	1.29
	SOLD	5	1.22	1.22
70	UNSOLD	429	1.22	1.31
	SOLD	7	1.22	1.40
80	UNSOLD	336	1.64	1.61
	SOLD	3	1.22	1.48
90	UNSOLD	211	1.22	1.36
	SOLD	4	1.22	1.42
100	UNSOLD	413	1.22	1.30
	SOLD	6	1.22	1.36
140	UNSOLD	198	1.22	1.36
	SOLD	5	1.22	1.49
160	UNSOLD	162	1.22	1.39
	SOLD	11	1.64	1.50
240	UNSOLD	16	1.36	1.36
	SOLD	7	1.36	1.45
250	UNSOLD	21	1.32	1.34
	SOLD	11	1.32	1.34
260	UNSOLD	6	1.36	1.35
	SOLD	5	1.36	1.35
270	UNSOLD	6	1.36	1.36
	SOLD	5	1.36	1.36
290	UNSOLD	6	1.29	1.29
	SOLD	4	1.29	1.29
291	UNSOLD	9	1.29	1.23
	SOLD	10	1.29	1.30
292	UNSOLD	18	1.29	1.23
	SOLD	5	1.29	1.19
293	UNSOLD	15	1.21	1.20
	SOLD	3	1.29	1.26
370	UNSOLD	13	.94	.87
	SOLD	5	.77	.81
400	UNSOLD	159	1.07	1.11
	SOLD	22	1.07	1.10
492	UNSOLD	2	1.28	1.28
	SOLD	3	1.28	1.28
550	UNSOLD	11	1.42	1.51

	SOLD	3	1.42	1.57
560	UNSOLD	107	3.06	2.38
	SOLD	4	2.36	2.26
761	UNSOLD	38	1.00	1.01
	SOLD	5	.91	.99
830	UNSOLD	30	3.06	2.35
	SOLD	3	1.67	2.13
990	UNSOLD	6	1.11	1.21
	SOLD	6	1.11	1.32
1040	UNSOLD	22	1.00	.86
	SOLD	4	.69	.65
1045	UNSOLD	22	1.37	1.37
	SOLD	5	1.37	1.29
1420	UNSOLD	5	1.20	1.20
	SOLD	5	1.20	1.20
1875	UNSOLD	15	1.17	1.22
	SOLD	4	1.17	1.34
2067	UNSOLD	22	1.64	1.59
	SOLD	5	1.08	1.32
2070	UNSOLD	8	1.40	1.25
	SOLD	5	1.40	1.32
2071	UNSOLD	37	1.29	1.21
	SOLD	11	1.29	1.24

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

V. CONCLUSIONS

The results from this analysis indicate that residential, commercial, and vacant land properties in Rio Grande County were compliant with Colorado State Audit guidelines.

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
1.020	1.000	1.040	.995	.977	1.014	96.0%	.988	.966	1.010	1.032	.136	18.0%

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

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
1.066	1.005	1.126	1.019	.988	1.097	95.1%	1.010	.969	1.050	1.055	.154	20.2%

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

Vacant Land

Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
1.001	.964	1.037	.972	.952	.986	95.3%	.926	.888	.963	1.081	.196	29.9%

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

Residential Median Ratio Stratification

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	57	17.6%
	75 to 100	18	5.6%
	50 to 75	37	11.4%
	25 to 50	70	21.6%
	5 to 25	136	42.0%
	5 or Newer	6	1.9%
Overall		324	100.0%
Excluded		0	
Total		324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.010	1.023	.126	17.1%
75 to 100	1.049	1.065	.201	29.0%
50 to 75	.949	1.014	.114	14.3%
25 to 50	.977	1.027	.161	21.7%
5 to 25	1.006	1.024	.120	16.3%
5 or Newer	.886	1.029	.080	10.0%
Overall	.995	1.032	.136	18.6%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	4	1.2%
	500 to 1,000 sf	28	8.6%
	1,000 to 1,500 sf	79	24.4%
	1,500 to 2,000 sf	91	28.1%
	2,000 to 3,000 sf	92	28.4%
	3,000 sf or Higher	30	9.3%
Overall		324	100.0%
Excluded		0	
Total		324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.025	1.037	.141	20.4%
500 to 1,000 sf	.949	1.073	.172	28.1%
1,000 to 1,500 sf	1.022	1.027	.129	16.9%
1,500 to 2,000 sf	.986	1.051	.151	20.2%
2,000 to 3,000 sf	.987	1.018	.117	15.9%
3,000 sf or Higher	1.009	1.019	.118	17.8%
Overall	.995	1.032	.136	18.6%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	0 - 0	9	2.8%
	44927	129	39.8%
	44959	127	39.2%
	44988	50	15.4%
	45020	9	2.8%
Overall		324	100.0%
Excluded		0	
Total		324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0 - 0	1.120	1.023	.230	29.4%
44927	.986	1.047	.147	20.0%
44959	.995	1.021	.121	16.4%
44988	.995	1.022	.127	17.0%
45020	.989	1.003	.094	17.6%
Overall	.995	1.032	.136	18.6%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION		2	0.6%
	02 - Below average	1	0.3%
	03 - Average	315	97.2%
	04 - Above average	6	1.9%
Overall		324	100.0%
Excluded		0	
Total		324	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.825	.956	.092	13.0%
02 - Below average	.941	1.000	.000	.
03 - Average	.995	1.036	.135	18.5%
04 - Above average	1.011	.984	.180	25.2%
Overall	.995	1.032	.136	18.6%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	3	5.9%
	$25K to $50K	1	2.0%
	$50K to $100K	11	21.6%
	$100K to $150K	8	15.7%
	$150K to $200K	5	9.8%
	$200K to $300K	5	9.8%
	$300K to $500K	11	21.6%
	$500K to $750K	4	7.8%
	Over $1,000K	3	5.9%
Overall		51	100.0%
Excluded		0	
Total		51	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.189	.984	.141	21.7%
$25K to $50K	1.209	1.000	.000	.
$50K to $100K	1.076	1.004	.174	25.6%
$100K to $150K	1.057	1.000	.233	30.6%
$150K to $200K	.991	.990	.105	15.1%
$200K to $300K	1.097	.998	.095	13.9%
$300K to $500K	.926	1.002	.094	11.4%
$500K to $750K	1.071	1.004	.083	9.9%
Over $1,000K	.944	.992	.026	4.3%
Overall	1.019	1.055	.154	21.6%

Sub-Class

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	1	2.0%
	1716.00	1	2.0%
	1969.25	1	2.0%
	2212.00	8	15.7%
	2215.00	1	2.0%
	2220.00	11	21.6%
	2225.00	1	2.0%
	2230.00	13	25.5%
	2235.00	14	27.5%
Overall		51	100.0%
Excluded		0	
Total		51	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	1.040	1.000	.000	.
1716.00	1.326	1.000	.000	.
1969.25	1.146	1.000	.000	.
2212.00	1.057	1.105	.153	20.7%
2215.00	1.193	1.000	.000	.
2220.00	1.122	1.017	.142	19.8%
2225.00	1.097	1.000	.000	.
2230.00	.986	1.082	.168	30.1%
2235.00	.989	1.030	.113	15.1%
Overall	1.019	1.055	.154	21.6%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	91	34.9%
	$25K to $50K	69	26.4%
	$50K to $100K	70	26.8%
	$100K to $150K	22	8.4%
	$150K to $200K	7	2.7%
	$200K to $300K	2	0.8%
Overall		261	100.0%
Excluded		0	
Total		261	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.002	.995	.209	34.0%
$25K to $50K	1.000	1.004	.221	34.0%
$50K to $100K	.947	1.004	.138	21.5%
$100K to $150K	.897	1.001	.149	20.4%
$150K to $200K	.883	.995	.128	16.8%
$200K to $300K	.657	1.041	.268	37.8%
Overall	.972	1.081	.196	31.0%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	214	82.0%
	200.00	2	0.8%
	510.00	1	0.4%
	520.00	4	1.5%
	530.00	2	0.8%
	540.00	3	1.1%
	550.00	5	1.9%
	560.00	1	0.4%
	1112.00	22	8.4%
	1135.00	6	2.3%
	2120.00	1	0.4%
Overall		261	100.0%
Excluded		0	
Total		261	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	.974	1.088	.193	30.9%
200.00	1.483	1.350	.362	51.2%
510.00	.533	1.000	.000	.
520.00	.930	1.657	.280	46.2%
530.00	.892	1.067	.105	14.8%
540.00	.924	1.001	.047	8.3%
550.00	.904	1.015	.152	20.2%
560.00	.921	1.000	.000	.
1112.00	.965	.992	.209	30.1%
1135.00	1.110	1.019	.110	16.6%
2120.00	.943	1.000	.000	.
Overall	.972	1.081	.196	31.0%