



2010  
RIO GRANDE COUNTY  
PROPERTY ASSESSMENT  
STUDY

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WILDROSE  
APPRAISAL, INCORPORATED  
Audit Division



September 15, 2010

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

**RE: Final Report for the 2010 Colorado Property Assessment Study**

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2010 Colorado Property Assessment Study.

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

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

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

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

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

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

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# INTRODUCTION

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## Colorado

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

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

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

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

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

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

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

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

Wildrose Audit has completed the Property Assessment Study for 2010 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 a population of approximately 11,581 people with 13.6 people per square mile, according to the U.S. Census Bureau's 2009 estimated population data.

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](http://www.riograndecounty.org))



# RATIO ANALYSIS

## Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 2007 and June 2008. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2008 in 6-month increments. If there were still fewer than 30 sales, supplemental appraisals were performed and treated as proxy sales. Residential sales for all counties using this method totaled at least 30 per county. For commercial sales, the total number analyzed was allowed, in some cases, to fall below 30. There were no sale quantity issues for counties requiring vacant land analysis or condominium analysis. Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these

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

## Conclusions

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

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

The results for Rio Grande County are:

<b>Rio Grande County Ratio Grid</b>					
<b>Property Class</b>	<b>Number of Qualified Sales</b>	<b>Unweighted Median Ratio</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>	<b>Time Trend Analysis</b>
Commercial/Industrial	56	0.981	1.057	20	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	216	0.968	1.040	15.6	Compliant
Vacant Land	242	0.950	1.028	17.7	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

**Random Deed Analysis**

An additional analysis was performed as part of the Ratio Analysis. Ten randomly selected deeds with documentary fees were obtained from the Clerk and Recorder. These deeds were for sales that occurred from January 1, 2007 through June 30, 2008. These sales were then checked for inclusion on the Assessor’s qualified or unqualified database.

**Conclusions**

After comparing the list of randomly selected deeds with the Assessor’s database, Rio Grande County has accurately transferred sales data from the recorded deeds to the qualified or unqualified database.

**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 methodology 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.

All qualified residential and commercial class properties were examined using the unit value method, where the actual value per square foot was compared between sold and unsold properties. A class was considered qualified if it met the criteria for the ratio analysis. The median value per square foot for both groups was compared from an appraisal and statistical perspective. If no significant difference was indicated, then we concluded that no further testing was warranted and that the county was in compliance in terms of sold/unsold consistency.

If either residential or commercial differences were significant using the unit value method, or if data limitations made the comparison invalid, then the next step was to perform a ratio analysis comparing the 2009 and 2010 actual values for each qualified class of property. All qualified vacant land classes were tested using this method. The sale property ratios were arrayed using a range of 0.8 to 1.5, which theoretically excluded changes between years that were due to other unrelated changes in the property. These ratios were also stratified at the appropriate level of analysis. Once the percent change was determined for each appropriate class and sub-class, the next step was to select the unsold sample. This sample

was at least 1% of the total population of unsold properties and excluded any sale properties. The unsold sample was filtered based on the attributes of the sold dataset to closely correlate both groups. The ratio analysis was then performed on the unsold properties and stratified. The median and mean ratio distribution was then compared between the sold and unsold group. A non-parametric test such as the Mann-Whitney test for differences between independent samples was undertaken to determine whether any observed differential was significant. If this test determined that the unsold properties were treated in a manner similar to the sold properties, it was concluded that no further testing was warranted and that the county was in compliance.

If a class or sub-class of property was determined to be significantly different by this method, the final step was to perform a multi-variate mass appraisal model that developed ratio statistics from the sold properties that were then applied to the unsold sample. This test compared the measures of central tendency and confidence intervals for the sold properties with the unsold property sample. If this comparison was also determined to be significantly different, then the conclusion was that the county had treated the unsold properties in a different manner than sold properties.

These tests were supported by both tabular and chart presentations, along with saved sold and unsold sample files.

<b>Sold/Unsold Results</b>	
<b>Property Class</b>	<b>Results</b>
Commercial/Industrial	Compliant
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

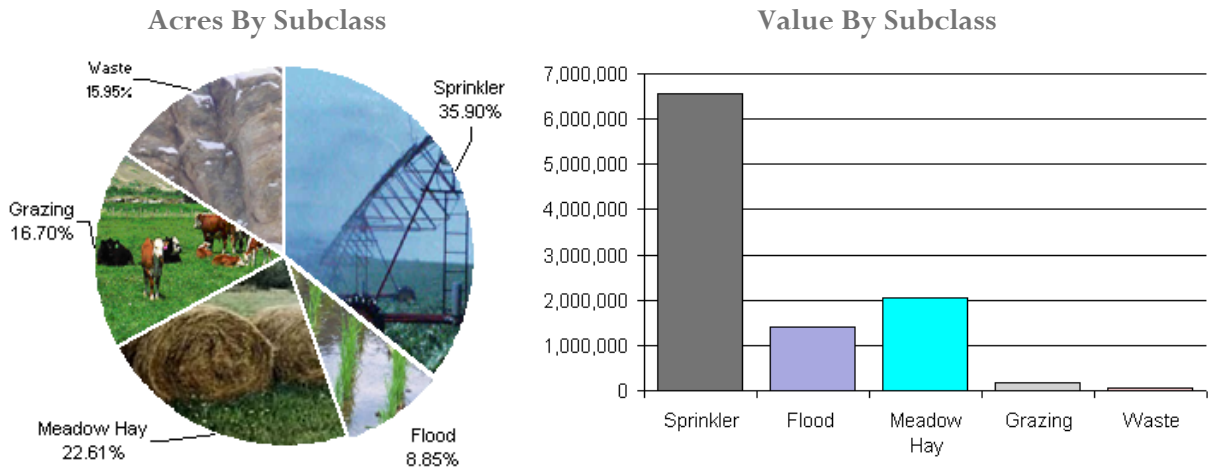
### **Conclusions**

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



## 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:

<b>Rio Grande County Agricultural Land Ratio Grid</b>						
<b>Abstract Code</b>	<b>Land Class</b>	<b>Number Of Acres</b>	<b>County Value Per Acre</b>	<b>County Assessed Total Value</b>	<b>WRA Total Value</b>	<b>Ratio</b>
4107	Sprinkler	72,840	90.00	6,564,744	6,462,782	1.02
4117	Flood	17,946	79.00	1,415,441	1,440,121	0.98
4137	Meadow Hay	45,865	45.00	2,044,693	2,065,008	0.99
4147	Grazing	33,872	6.00	188,745	188,745	1.00
4167	Waste	32,362	2.00	52,267	52,267	1.00
<b>Total/Avg</b>		<b>202,885</b>	<b>51.00</b>	<b>10,265,891</b>	<b>10,208,923</b>	<b>1.01</b>

### Recommendations

None



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## Agricultural Outbuildings

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### **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

## SALES VERIFICATION

According to Colorado Revised Statutes:

*A representative body of sales is required when considering the market approach to appraisal.*

*(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:*

*(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.*

*(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)*

*The assessor is required to use sales of real property only in the valuation process.*

*(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)*

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

WRA reviewed the sales verification procedures in 2010 for Rio Grande County. This study was conducted by checking selected sales from the master sales list for the Jan 1, 2007 - June 30, 2008 valuation period. Specifically WRA selected 33 sales listed as unqualified.

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

### **Conclusions**

Rio Grande County appears to be doing an excellent job of verifying their sales. WRA agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

### **Recommendations**

None



# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

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

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## Earth and Stone Products

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### 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 2010 in Rio Grande County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year was accomplished by reducing the absorption period by one year. In instances where the number of sales within an approved plat was less than the absorption rate per year calculated

for the plat, the absorption period was left unchanged.

### **Conclusions**

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
- MLS Listing and/or Sold Books
- Chamber of Commerce/Economic Development Contacts
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

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 2010 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Businesses in a selected area
- Accounts with obvious discrepancies
- New businesses filing for the first time
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Businesses with no deletions or additions for 2 or more years



- Non-filing Accounts - Best Information Available
- Accounts close to the \$4,000 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

## WILDROSE AUDITOR STAFF

**Harry J. Fuller**, *Audit Project Manager*

**Suzanne Howard**, *Audit Administrative Manager*

**Steve Kane**, *Audit Statistician / Field Analyst*

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

**J. Andrew Rodriguez**, *Field Analyst*



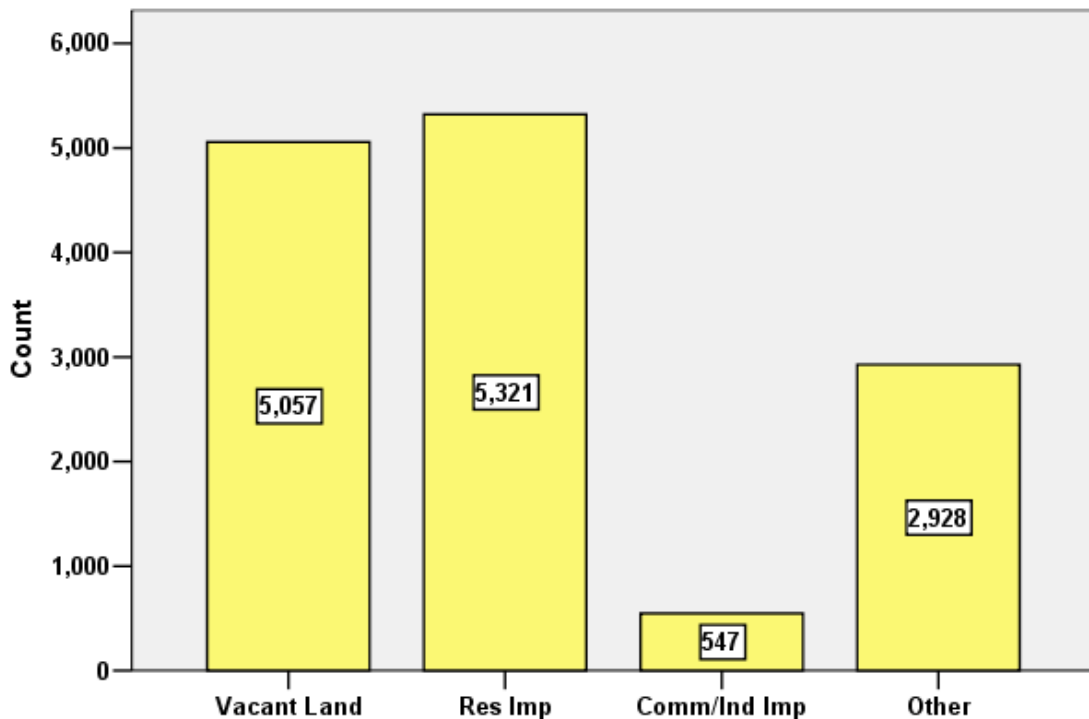
# APPENDICES

## **STATISTICAL RESULTS FOR RIO GRANDE COUNTY 2010**

### I. OVERVIEW

Rio Grande County is located in south central Colorado. The county has a total of 13,853 real property parcels, according to data submitted by the county assessor's office in 2010. The following provides a breakdown of property classes for this county:

**Real Property Class Distribution**



The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1112) accounted for 81% of all vacant land parcels.

For residential improved properties, single family properties accounted for 73% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for 4% of all such properties in this county.

## II. DATA FILES

The following sales analyses were based on the requirements of the 2010 Colorado Property Assessment Study. Information was provided by the Rio Grande Assessor's Office in April 2010. The data included all 5 property record files as specified by the Auditor.

## III. RESIDENTIAL SALES RESULTS

The following steps were taken to analyze the residential sales:

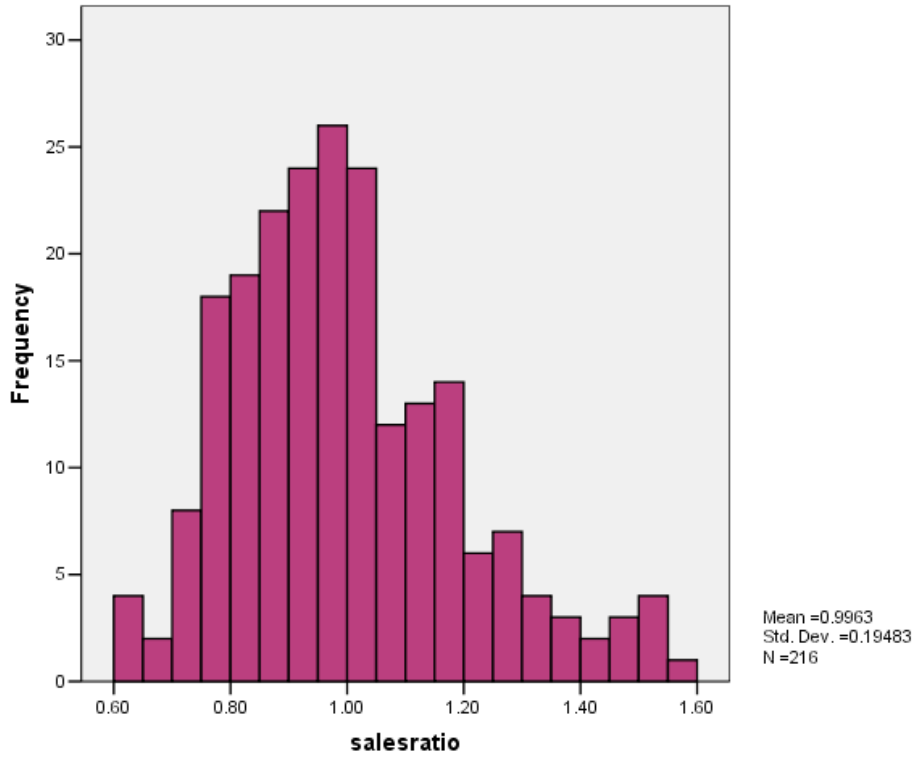
1. Total sales	2,478
2. Selected qualified sales	823
3. Select improved sales	448
4. Non duplicate sales	425
5. Select residential sales only	326
6. Sales between January 1, 2007 and June 30, 2008	227
7. Remove 18 extreme ratios	216

The sales ratio analysis was analyzed as follows:

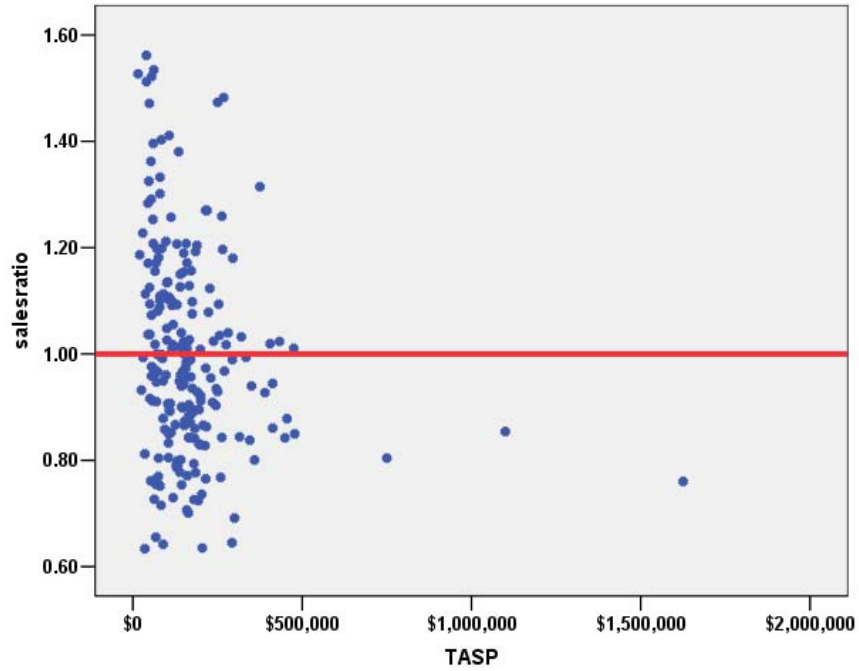
Median	<b>0.968</b>
Price Related Differential	<b>1.040</b>
Coefficient of Dispersion	<b>.156</b>

**The sale trimming exceeded the IAAO standard by several percentage points. The IAAO recommends up to 5% of sale can be trimmed from the analysis; in this instance, we trimmed 7% (18 out of 234 sales) to bring Rio Grande County into compliance in terms of the Coefficient of Dispersion. We recommend that the assessor carefully examine their residential values and monitor the dispersion of the ratios about the median. Please note that the median ratio was within the SBOE acceptable range of 0.95 to 1.05.**

The following graphs describe further the sales ratio distribution for these properties:



**Residential Sale Price by Sales Ratio**



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

### Residential Market Trend Analysis

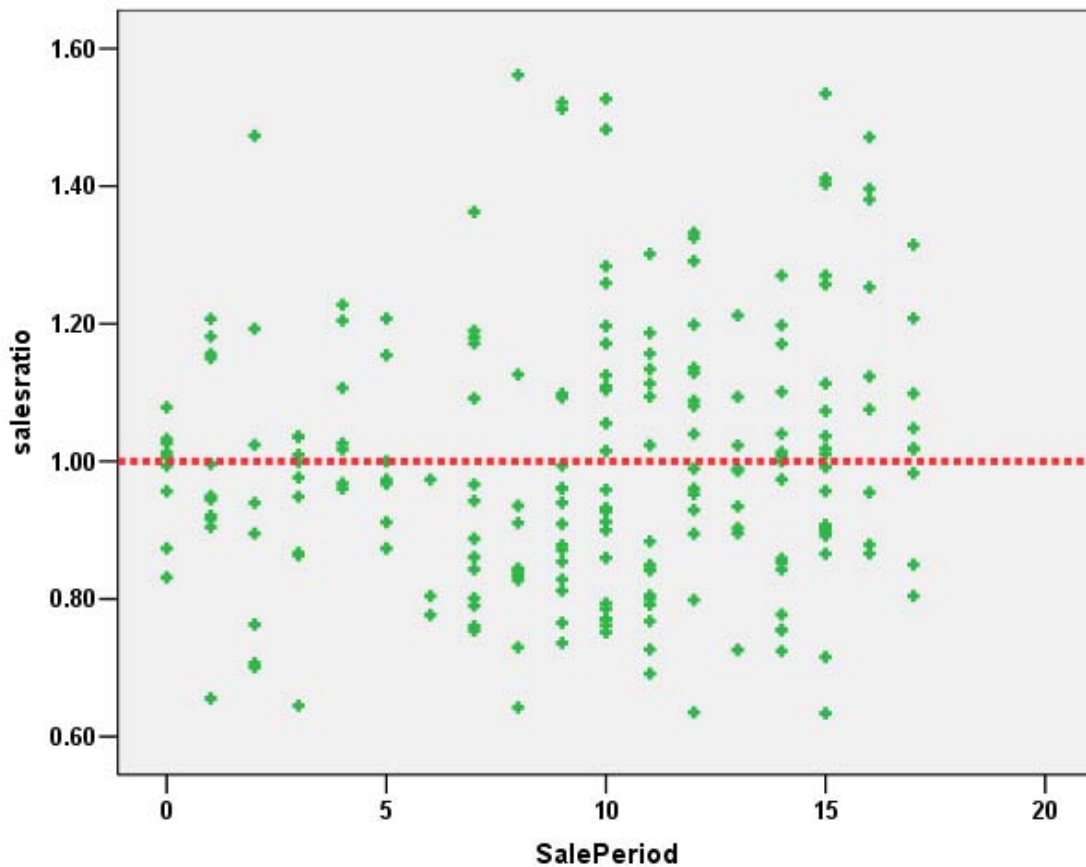
We next analyzed the residential dataset using the 18-month sale period for any residual market trending, with the following results:

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.955	.029		33.258	.000
	SalePeriod	.004	.003	.110	1.616	.108

a. Dependent Variable: salesratio

**Residential Sale Price Market Trend**



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 actual value per square foot for 2010 between each group, as follows:

<b>Group</b>	<b>N</b>	<b>Median</b>	<b>Mean</b>
<b>Unsold</b>	3,658	\$73	\$86
<b>Sold</b>	216	\$80	\$92

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

### **IV. COMMERCIAL/INDUSTRIAL SALE RESULTS**

The following steps were taken to analyze the commercial sales:

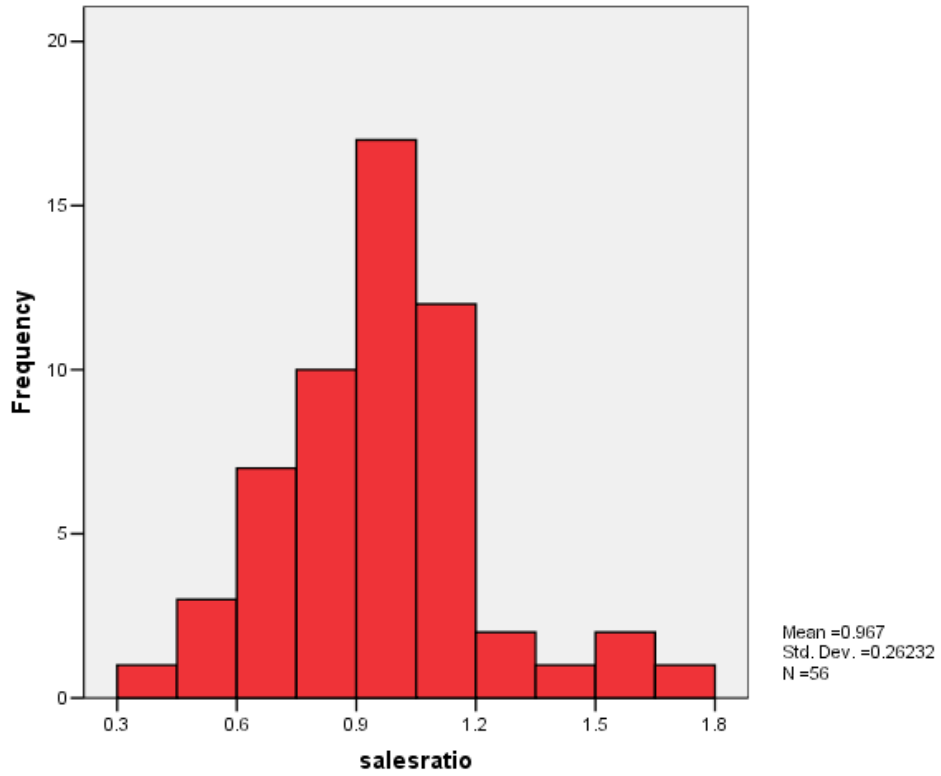
1. Total sales	2,478
2. Selected qualified sales	823
3. Select improved sales	448
4. Non duplicate sales	425
5. Select commercial/industrial sales only	60
6. Trimmed extreme sales ratios	56

**Again, the trimmed total was slightly over the IAAO limit of 5%. These sales were trimmed to bring the COD for commercial/industrial sales into compliance.**

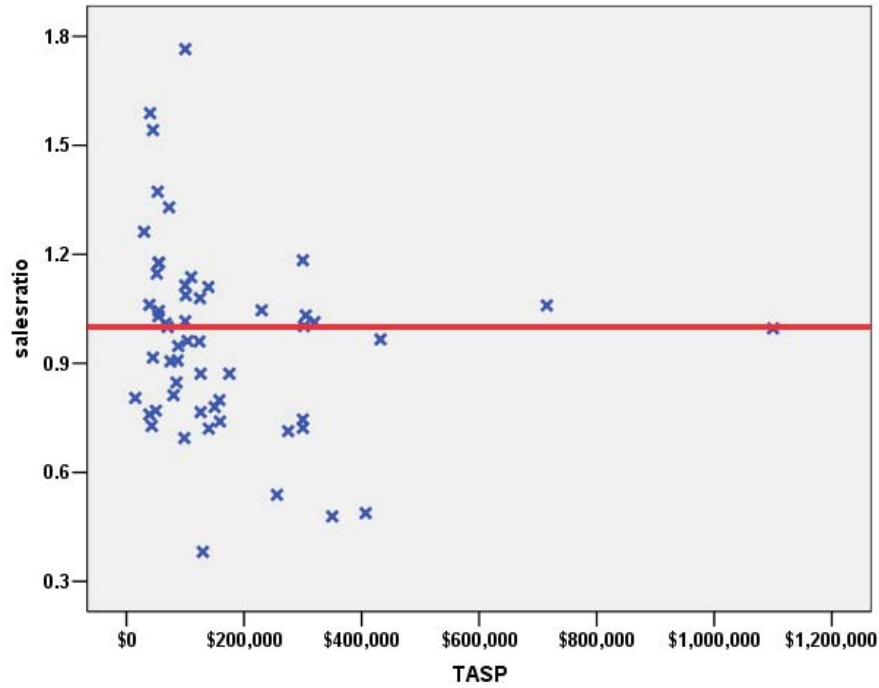
The sales ratio analysis was analyzed as follows:

Median	<b>0.981</b>
Price Related Differential	<b>1.057</b>
Coefficient of Dispersion	<b>.200</b>

The above tables indicate that the Rio Grande County commercial/industrial sale ratios were in compliance with the SBOE standards after trimming 4 sales. The following histogram and scatter plot describe the sales ratio distribution further:



Commercial Sale Price by Sales Ratio





### Commercial Market Trend Analysis

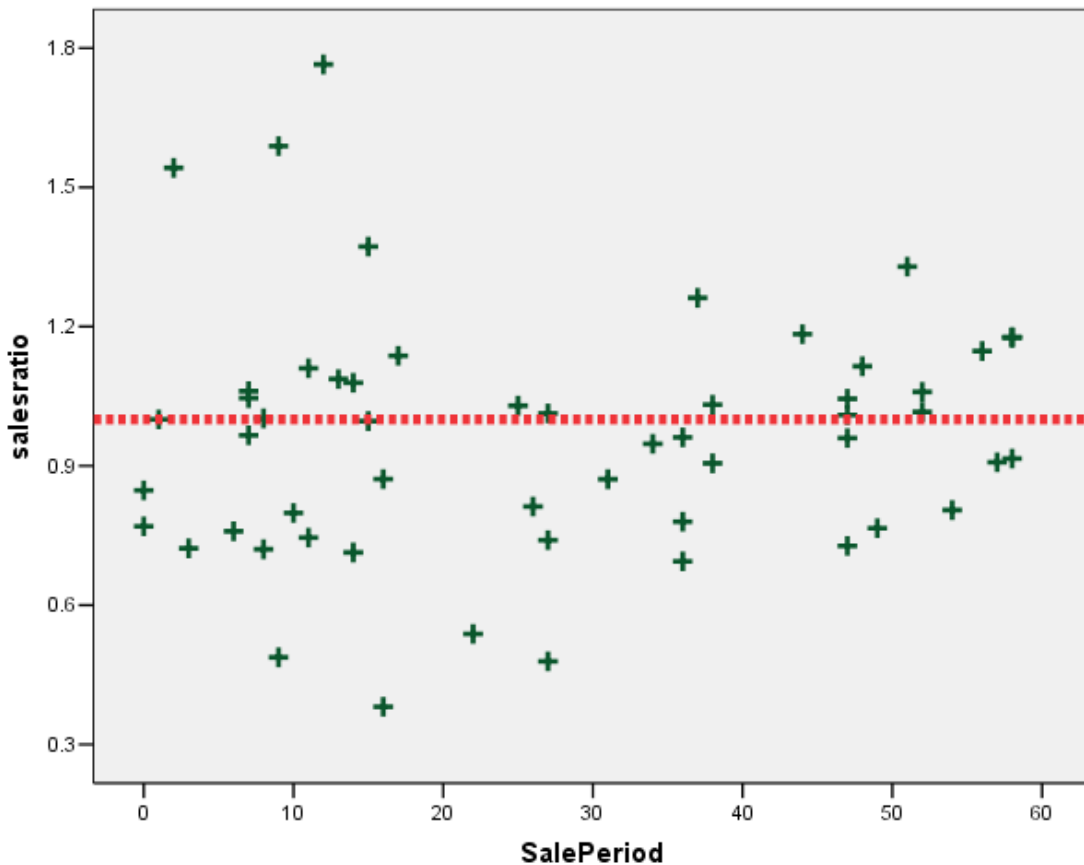
The assessor did not apply any market trend adjustment to the commercial dataset. The 56 commercial/industrial sales were analyzed, examining the sale ratios across the sale period with the following results:

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.934	.062		14.952	.000
	SalePeriod	.001	.002	.087	.640	.525

a. Dependent Variable: salesratio

### Commercial Market Trend Analysis



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 actual value per square foot between sold and unsold commercial properties to determine if the assessor was valuing each group consistently, as follows:

Group	No.	Median	Mean
Unsold	498	\$25	\$49
Sold	55	\$39	\$56

The above table indicated some significant differences between sold and unsold properties. We therefore used the second test to compare the differences between sold and unsold commercial properties, this time comparing the change in value between 2008 and 2010 between sold and unsold commercial properties, as follows:

Group	No.	Median	Mean
Unsold	487	1.01	1.04
Sold	55	1.00	1.08

**The above second analysis indicated that sold and unsold commercial properties were similar when comparing the median change in value between 2008 and 2010.**

### V. VACANT LAND SALE RESULTS

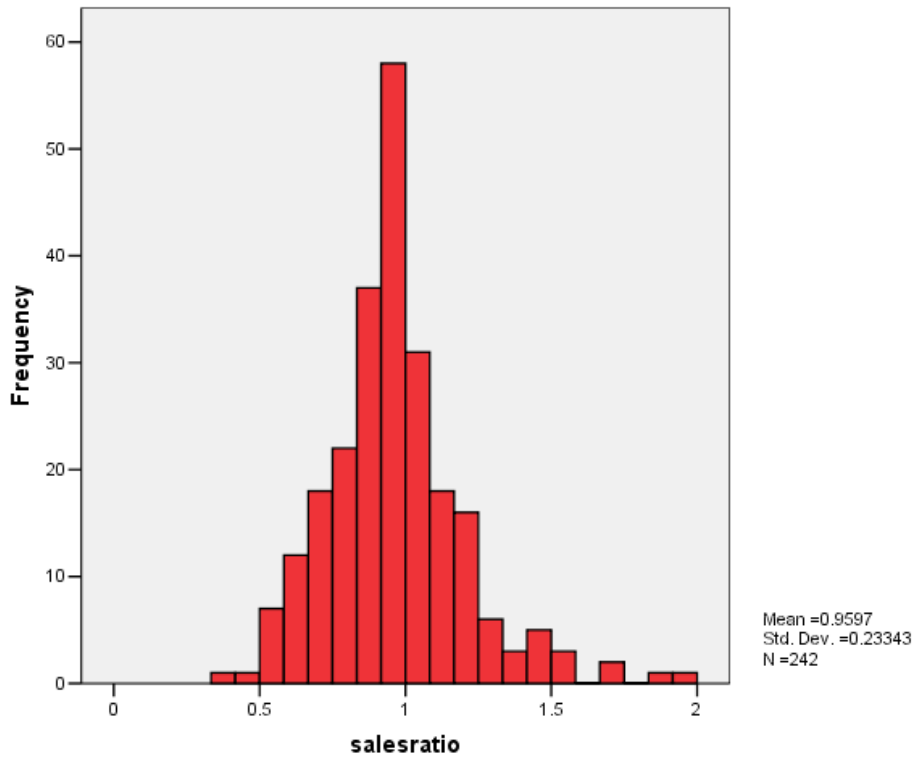
The following steps were taken to analyze vacant land sales:

1. Total sales	2,478
2. Selected qualified sales	823
3. Select vacant land sales	362
4. Sales between July 1, 2006 and June 30, 2008	285
5. Select non-agricultural sales	254
6. Remove extreme ratios	242

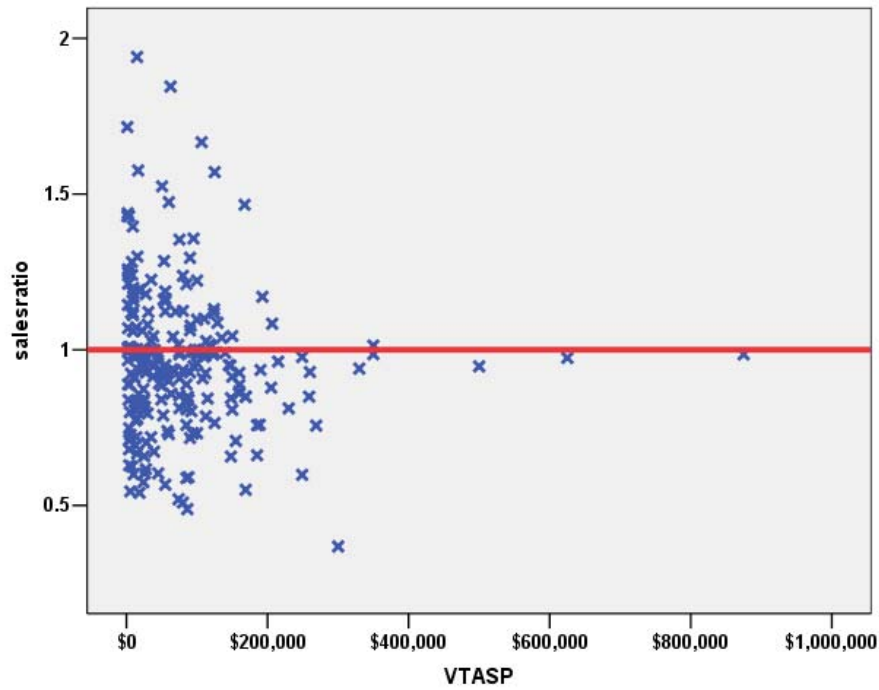
The sales ratio analysis was analyzed as follows:

Median	<b>0.950</b>
Price Related Differential	<b>1.028</b>
Coefficient of Dispersion	<b>.177</b>

The above tables indicate 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 Sale Price by Sales Ratio



### Vacant Land Market Trend Analysis

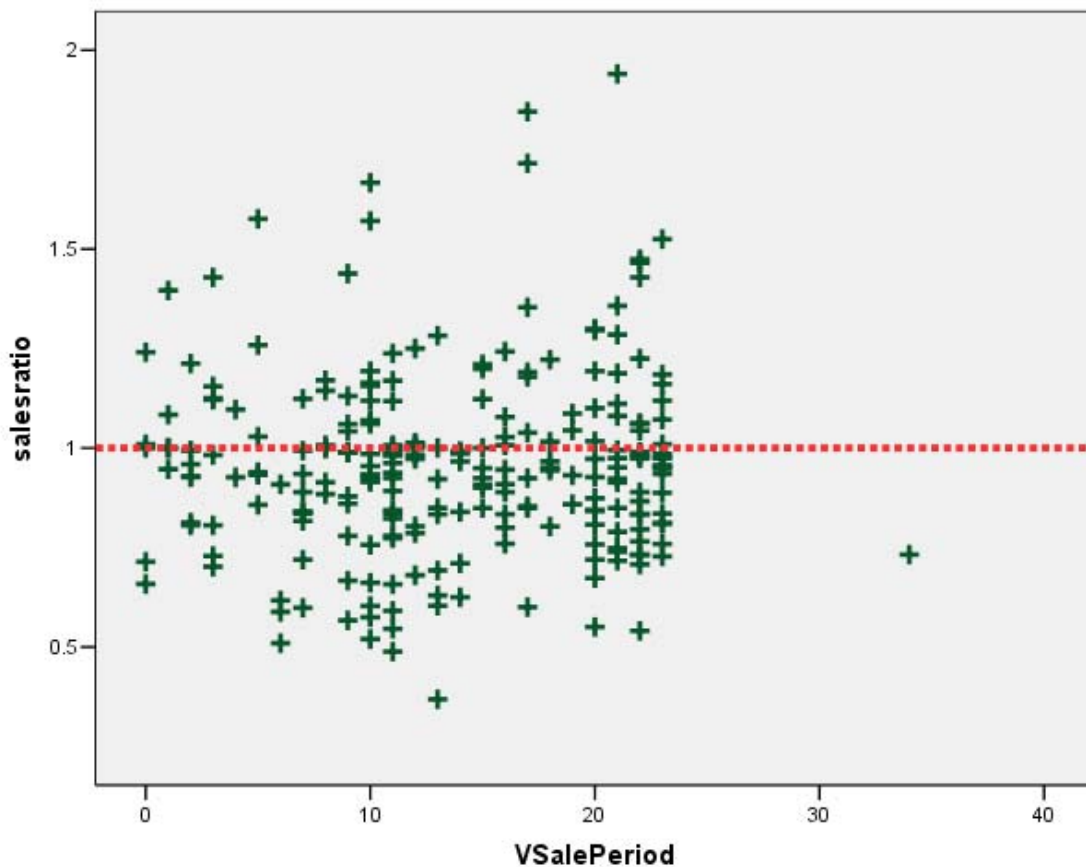
The assessor did not apply any market trend adjustment to the vacant land dataset. The 257 vacant land sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.941	.034		28.022	.000
VSalePeriod	.001	.002	.039	.612	.541

a. Dependent Variable: salesratio

**Vacant Land Sales Market Trend Analysis**



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 2008 and 2010 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

<b>Group</b>	<b>N</b>	<b>Median</b>	<b>Mean</b>
<b>Unsold</b>	4,759	1.09	1.11
<b>Sold</b>	241	1.10	1.37

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

### **V. AGRICULTURAL IMPROVEMENTS ANALYSIS**

The final statistical verification concerned the assigned actual values for agricultural residential improvements. We compared the actual value per square foot rate for this group and compared it to rates assigned to residential single family improvements in Rio Grande County.

The following indicates that agricultural residential improvements were valued in a manner similar to the single family residential improvements in this county:

Descriptives

ABSTRIMP			Statistic	Std. Error	
ImpValSF	1212.00	Mean	\$68.30	\$.609	
		95% Confidence Interval for Mean	\$67.11		
		Lower Bound	\$69.50		
			Upper Bound		
			5% Trimmed Mean	\$65.37	
			Median	\$60.83	
			Variance	1430.728	
			Std. Deviation	\$37.825	
			Minimum	\$0	
			Maximum	\$414	
			Range	\$414	
			Interquartile Range	\$41	
			Skewness	1.486	.039
			Kurtosis	4.256	.079
		4277.00	Mean	\$78.39	\$2.745
95% Confidence Interval for Mean			\$72.99		
Lower Bound			\$83.78		
			Upper Bound		
			5% Trimmed Mean	\$75.15	
			Median	\$59.14	
			Variance	2961.631	
			Std. Deviation	\$54.421	
			Minimum	\$0	
			Maximum	\$273	
			Range	\$273	
			Interquartile Range	\$72	
			Skewness	1.022	.123
			Kurtosis	.174	.246

**VI. Conclusions**

Based on this statistical analysis, there were no significant compliance issues concluded for Rio Grande County as of the date of this report. **As noted, the COD statistics for residential and commercial properties were marginally passed in this analysis, although the assessor should carefully review the dispersion of values in these two classes for sold properties. In addition, we had to employ the second test for sold/unsold commercial properties, since the first test (based on the actual value per square foot) indicated significant valuation differences between sold and unsold properties. The assessor is again cautioned to insure that sold and unsold commercial properties are valued consistently.**

**STATISTICAL ABSTRACT**

**Residential**

**Ratio Statistics for CURRTOT / TASP**

Mean		.996
95% Confidence Interval for Mean	Lower Bound	.970
	Upper Bound	1.022
Median		.968
95% Confidence Interval for Median	Lower Bound	.945
	Upper Bound	1.000
	Actual Coverage	95.2%
Weighted Mean		.958
95% Confidence Interval for Weighted Mean	Lower Bound	.928
	Upper Bound	.989
Price Related Differential		1.040
Coefficient of Dispersion		.156
Coefficient of Variation	Mean Centered	19.6%

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

**Commercial/Industrial**

**Ratio Statistics for CURRTOT / TASP**

Mean		1.006
95% Confidence Interval for Mean	Lower Bound	.885
	Upper Bound	1.127
Median		.981
95% Confidence Interval for Median	Lower Bound	.871
	Upper Bound	1.045
	Actual Coverage	97.3%
Weighted Mean		.895
95% Confidence Interval for Weighted Mean	Lower Bound	.717
	Upper Bound	1.073
Price Related Differential		1.124
Coefficient of Dispersion		.271
Coefficient of Variation	Mean Centered	46.5%

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.



**Vacant Land**

**Ratio Statistics for CURRLND / VTASP**

Mean		.960
95% Confidence Interval for Mean	Lower Bound	.930
	Upper Bound	.989
Median		.950
95% Confidence Interval for Median	Lower Bound	.927
	Upper Bound	.978
	Actual Coverage	95.4%
Weighted Mean		.934
95% Confidence Interval for Weighted Mean	Lower Bound	.899
	Upper Bound	.969
Price Related Differential		1.028
Coefficient of Dispersion		.177
Coefficient of Variation	Mean Centered	24.3%

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

**Residential Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	LT \$25K	3	1.4%
	\$25K to \$50K	16	7.4%
	\$50K to \$100K	52	24.1%
	\$100K to \$150K	48	22.2%
	\$150K to \$200K	46	21.3%
	\$200K to \$300K	32	14.8%
	\$300K to \$500K	16	7.4%
	\$500K to \$750K	1	.5%
	Over \$1,000K	2	.9%
Overall		216	100.0%
Excluded		0	
Total		216	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LT \$25K	1.187	1.043	.167	25.3%
\$25K to \$50K	1.119	.994	.170	22.6%
\$50K to \$100K	.999	1.005	.176	22.3%
\$100K to \$150K	.964	1.001	.132	16.6%
\$150K to \$200K	.908	1.001	.112	14.8%
\$200K to \$300K	.971	.997	.170	22.2%
\$300K to \$500K	.934	1.001	.096	13.5%
\$500K to \$750K	.804	1.000	.000	.
Over \$1,000K	.807	1.011	.058	8.2%
Overall	.968	1.040	.156	20.4%

**Age**

**Case Processing Summary**

		Count	Percent
AgeRec	Over 100	42	19.4%
	75 to 100	16	7.4%
	50 to 75	27	12.5%
	25 to 50	57	26.4%
	5 to 25	59	27.3%
	5 or Newer	15	6.9%
Overall		216	100.0%
Excluded		0	
Total		216	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	1.015	1.041	.167	21.4%
75 to 100	.971	1.056	.161	20.6%
50 to 75	.949	1.067	.173	24.2%
25 to 50	.929	1.060	.159	20.7%
5 to 25	.994	1.009	.134	17.7%
5 or Newer	.900	1.040	.116	17.7%
Overall	.968	1.040	.156	20.4%

**Improved Area**

**Case Processing Summary**

		Count	Percent
ImpSFRec	LE 500 sf	2	.9%
	500 to 1,000 sf	35	16.2%
	1,000 to 1,500 sf	64	29.6%
	1,500 to 2,000 sf	54	25.0%
	2,000 to 3,000 sf	47	21.8%
	3,000 sf or Higher	14	6.5%
Overall		216	100.0%
Excluded		0	
Total		216	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LE 500 sf	1.163	1.330	.313	44.3%
500 to 1,000 sf	.932	1.051	.180	23.1%
1,000 to 1,500 sf	.960	1.068	.172	23.4%
1,500 to 2,000 sf	.980	1.017	.144	18.2%
2,000 to 3,000 sf	1.009	1.018	.110	14.4%
3,000 sf or Higher	.922	1.089	.154	23.0%
Overall	.968	1.040	.156	20.4%

**Improvement Quality**

**Case Processing Summary**

		Count	Percent
Qual	2.00	166	76.9%
	2.33	1	.5%
	2.80	1	.5%
	6.00	37	17.1%
	7.00	10	4.6%
	9.00	1	.5%
Overall		216	100.0%
Excluded		0	
Total		216	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
2.00	.973	1.023	.147	19.2%
2.33	1.040	1.000	.000	.
2.80	.760	1.000	.000	.
6.00	.940	1.040	.190	24.7%
7.00	.948	1.067	.136	19.5%
9.00	1.527	1.000	.000	.
Overall	.968	1.040	.156	20.4%

**Commercial Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	LT \$25K	1	1.7%
	\$25K to \$50K	8	13.3%
	\$50K to \$100K	21	35.0%
	\$100K to \$150K	11	18.3%
	\$150K to \$200K	3	5.0%
	\$200K to \$300K	6	10.0%
	\$300K to \$500K	7	11.7%
	\$500K to \$750K	1	1.7%
	Over \$1,000K	2	3.3%
Overall		60	100.0%
Excluded		0	
Total		60	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LT \$25K	.805	1.000	.000	.
\$25K to \$50K	.988	1.012	.289	36.7%
\$50K to \$100K	1.030	1.001	.300	63.7%
\$100K to \$150K	.960	1.012	.176	24.5%
\$150K to \$200K	.799	.997	.055	8.3%
\$200K to \$300K	.734	1.000	.227	35.5%
\$300K to \$500K	1.002	.995	.289	47.7%
\$500K to \$750K	1.059	1.000	.000	.
Over \$1,000K	.613	1.014	.626	88.5%
Overall	.981	1.124	.271	47.8%

**Subclass**

**Case Processing Summary**

	Count	Percent
preduse 11000	5	8.3%
12000	7	11.7%
14000	2	3.3%
17000	4	6.7%
21000	2	3.3%
21120	16	26.7%
25000	4	6.7%
30000	2	3.3%
38000	1	1.7%
39000	2	3.3%
48000	12	20.0%
66000	1	1.7%
69000	1	1.7%
91000	1	1.7%
Overall	60	100.0%
Excluded	0	
Total	60	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
11000	.960	1.173	.647	143.0%
12000	.908	.998	.230	33.2%
14000	.889	.943	.139	19.7%
17000	.825	1.219	.414	62.3%
21000	1.294	1.148	.192	27.1%
21120	.999	.979	.131	18.6%
25000	1.092	1.340	.422	52.5%
30000	.828	.996	.161	22.8%
38000	.229	1.000	.000	.
39000	1.046	.995	.013	1.9%
48000	1.096	.984	.236	33.2%
66000	.713	1.000	.000	.
69000	.740	1.000	.000	.
91000	1.000	1.000	.000	.
Overall	.981	1.124	.271	47.8%

**Vacant Land Median Ratio Stratification**

**Case Processing Summary**

	Count	Percent
Vpreduse 980	5	2.1%
990	213	88.0%
1000	16	6.6%
2000	2	.8%
10000	4	1.7%
17000	1	.4%
21120	1	.4%
Overall	242	100.0%
Excluded	0	
Total	242	

**Ratio Statistics for CURRLND / VTASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
980	.933	1.004	.111	16.2%
990	.949	1.034	.175	24.3%
1000	.987	.909	.190	30.0%
2000	.773	1.023	.057	8.0%
10000	.738	.980	.180	27.2%
17000	.732	1.000	.000	.
21120	.951	1.000	.000	.
Overall	.950	1.028	.177	24.6%