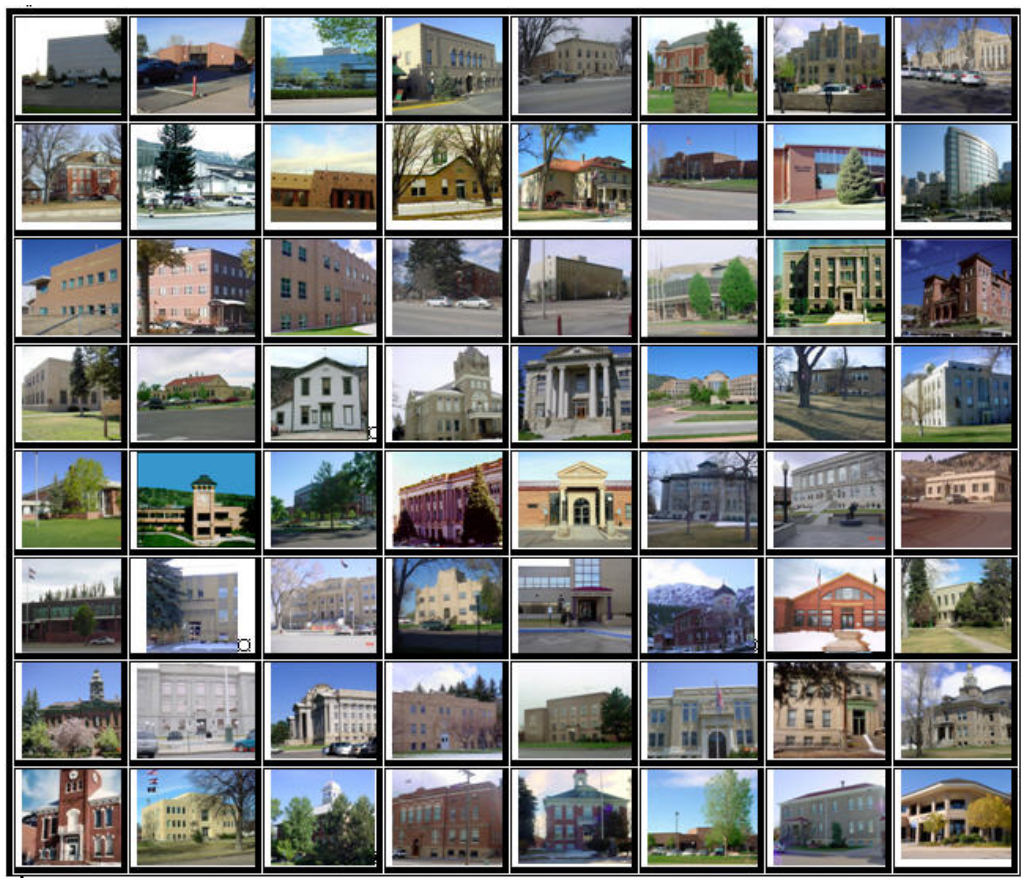




2011  
EAGLE COUNTY  
PROPERTY ASSESSMENT  
STUDY

---





September 15, 2011

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

**RE: Final Report for the 2011 Colorado Property Assessment Study**

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2011 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 2011 and is pleased to report its findings for Eagle County in the following report.

# REGIONAL / HISTORICAL SKETCH OF EAGLE COUNTY

## Regional Information

Eagle County is located in the Western Slope region of Colorado. The Western Slope of Colorado refers to the region west of the Rocky Mountains. It includes Archuleta, Delta, Dolores, Eagle, Garfield, Grand,

Gunnison, Hinsdale, Jackson, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel, and Summit counties.





## Historical Information

Eagle County has a population of approximately 52,197 people with 30.92 people per square mile, according to the U.S. Census Bureau's 2010 census data. This represents a 25.3 percent change from the 2000 Census.

Eagle County was created by the Colorado legislature on February 11, 1883, from portions of Summit County. It was named after the Eagle River, which runs through the county. The county seat was originally set in Red Cliff, Colorado, but was moved to the town of Eagle in 1921. The Vail and Beaver Creek ski areas are located in Eagle County.

Much of the county is taken up by White River National Forest, and much of the rest is managed by the Bureau of Land Management. Interstate 70 crosses the county from east to west. The Eagle River rises in the southeastern part of the county. It receives Gore Creek at Dowds Junction, and joins the Colorado River in the west. Fryingpan River and the Roaring Fork River intersect the southwest corner of the county.

The town of Vail was established in 1966 at the base of Vail Ski Resort, which opened in December 1962. The town is famous for having the second largest single ski mountain in North America and other winter sports in addition to being a year round destination for outdoor activities.

The ski area was founded by Pete Seibert and the local rancher Earl Eaton in 1962, between the town of Eagle and Vail Pass. The pass was named after Charles Vail, the highway engineer that routed U.S. Highway 6 through the valley in 1940. Seibert, a New England native, served in the U.S. Army's 10th Mountain Division during World War II, which trained at Camp Hale, just southeast of Vail. He was seriously wounded in Italy and was told he should become a professional skier when he recovered. He was recognized as the best skier in the world for a short time. ([www.wikipedia.org](http://www.wikipedia.org))

# RATIO ANALYSIS

## Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 2009 and June 2010. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2010 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 Eagle County are:

<b>Eagle 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	83	0.987	1.081	8.8	Compliant
Condominium	443	0.995	0.987	6.2	Compliant
Single Family	634	0.995	1.020	6.5	Compliant
Vacant Land	74	1.000	1.016	11.7	Compliant

After applying the above described methodologies, it is concluded from the sales ratios that Eagle 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, 2009 through June 30, 2010. 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, Eagle 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 Eagle County has complied with the statutory requirements to analyze the effects of time on value in their county. Eagle 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

Eagle 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 2010 and 2011 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	Compliant
Single Family	Compliant
Vacant Land	Compliant

### **Conclusions**

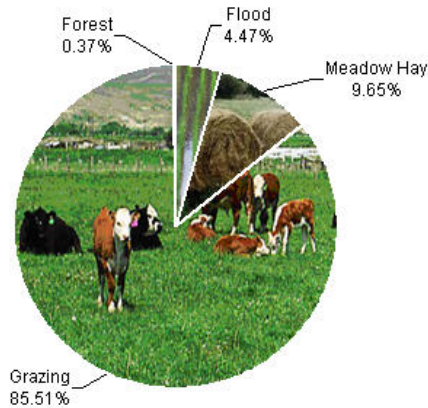
After applying the above described methodologies, it is concluded that Eagle County is reasonably treating its sold and unsold properties in the same manner.

### **Recommendations**

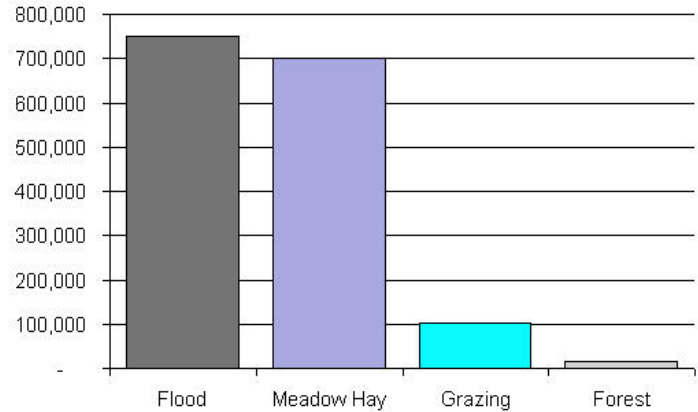
None

# 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:

<b>Eagle 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>
4117	Flood	5,870	128.00	748,916	759,507	0.99
4137	Meadow Hay	12,673	55.00	699,698	699,698	1.00
4147	Grazing	112,320	8.00	103,860	103,860	1.00
4177	Forest	489	30.00	14,853	14,853	1.00
<b>Total/Avg</b>		<b>131,352</b>	<b>12.00</b>	<b>1,567,327</b>	<b>1,577,918</b>	<b>0.99</b>

### 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

Eagle 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 2011 for Eagle County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 36 sales listed as unqualified.

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

### **Conclusions**

Eagle 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**

Eagle County has submitted a written narrative describing the economic areas that make up the county's market areas. Eagle 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 Eagle 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 2011 in Eagle County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14). Discounting procedures were applied to all subdivisions where less than 80 percent of all sites were sold using the present worth method. The market approach was applied where 80 percent or more of the subdivision sites were sold. An absorption period was estimated for each subdivision that was discounted. An appropriate discount rate was developed using the summation method.

Subdivision land with structures was appraised at full market value.

### **Conclusions**

Eagle 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.

Eagle County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural, commercial

and ski area 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

Eagle 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

Eagle 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.

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

- Public Record Documents
- Chamber of Commerce/Economic Development Contacts
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor
- Commercial property vacancy field work

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.

Eagle County submitted their personal property written audit plan and was current for the 2011 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



**WILDROSE**  
APPRAISAL, INCORPORATED

**Audit Division**

- Non-filing Accounts - Best Information Available
- Accounts protested with substantial disagreement

### **Conclusions**

Eagle 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*

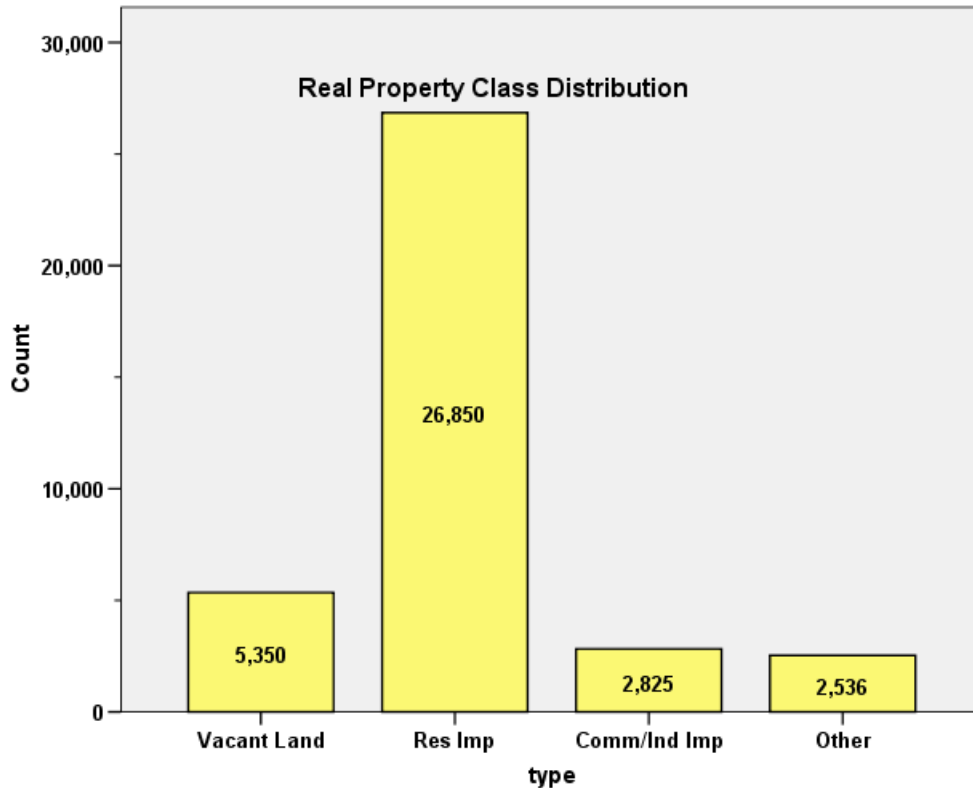
**J. Andrew Rodriguez**, *Field Analyst*

# APPENDICES

## STATISTICAL COMPLIANCE REPORT FOR EAGLE COUNTY 2011

### I. OVERVIEW

Eagle County is a mountain resort county located in western Colorado. The county has a total of 37,561 real property parcels, according to data submitted by the county assessor's office in 2011. 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 and 400) accounted for 51% of all vacant land parcels.

For residential improved properties, single family properties accounted for 54% of all residential properties. Residential condominiums accounted for 45% of all residential improved properties. Based on the large number of residential condominiums in this county, they will be analyzed separately from single family residences in the residential ratio analysis section.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for 7.5% of all such properties in this county.

## II. DATA FILES

The following sales analyses were based on the requirements of the 2011 Colorado Property Assessment Study. 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	1,878
2. Selected qualified sales	1,376
3. Select improved sales (non-duplicate)	1,207
4. Select residential sales only	1,077
5. Sales between January 1, 2007 and June 30, 2008	1,077

We stratified our sales ratio analysis by residential non-condominiums and condominiums. The sales ratio analysis results were as follows:

### Residential Non-Condo = 634

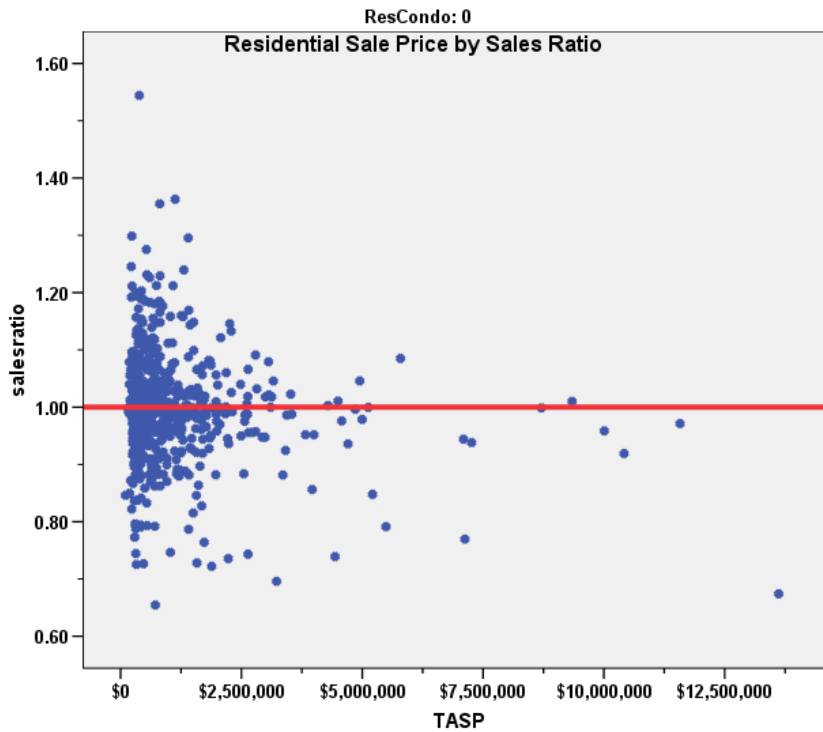
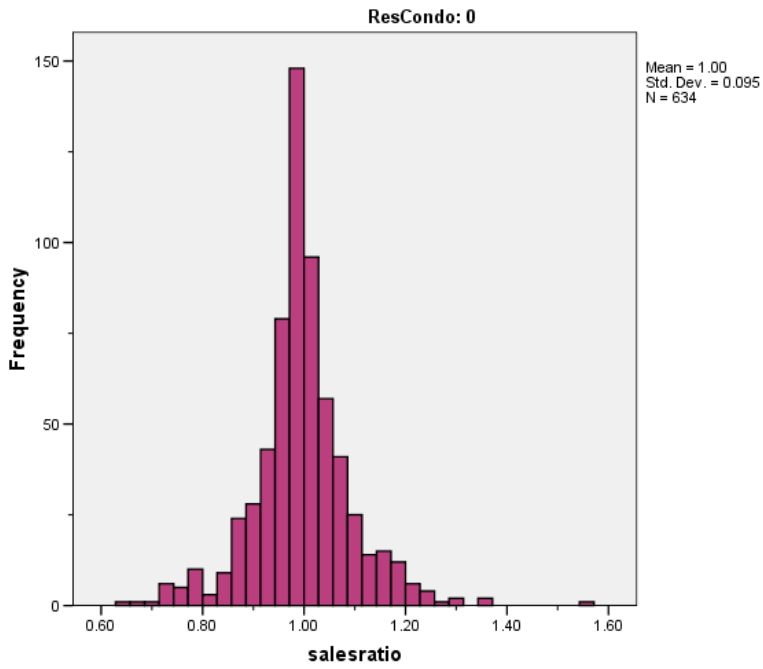
Median	<b>0.995</b>
Price Related Differential	<b>1.020</b>
Coefficient of Dispersion	<b>.065</b>

### Residential Condo = 443

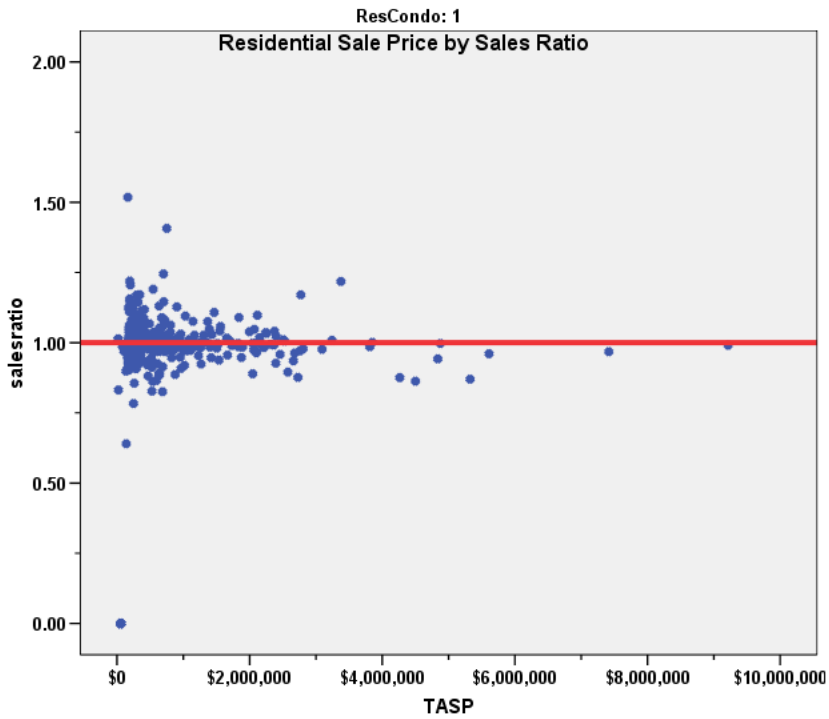
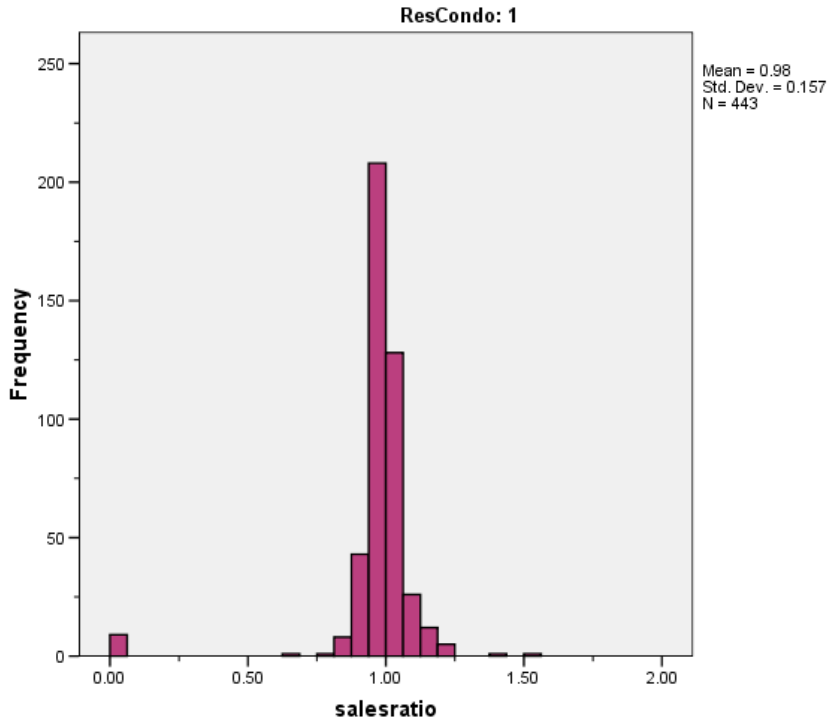
Median	<b>0.995</b>
Price Related Differential	<b>0.987</b>
Coefficient of Dispersion	<b>.062</b>

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

### RES NON-CONDO



**RES CONDO**



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



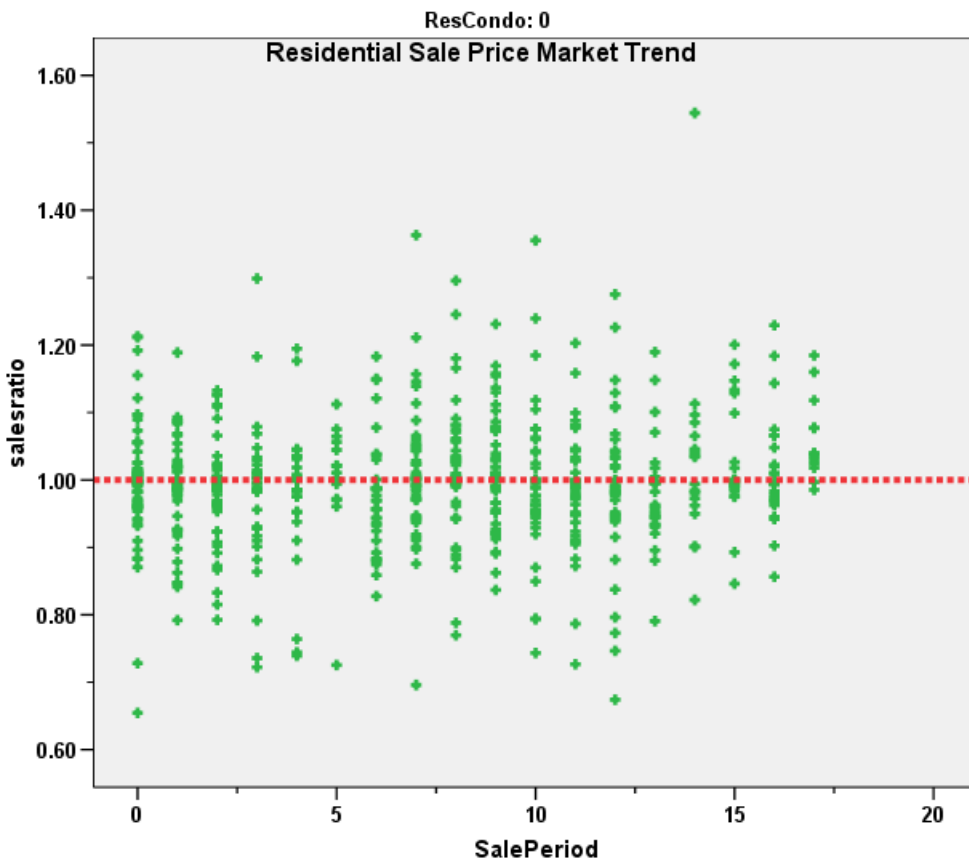
## Residential Market Trend Analysis

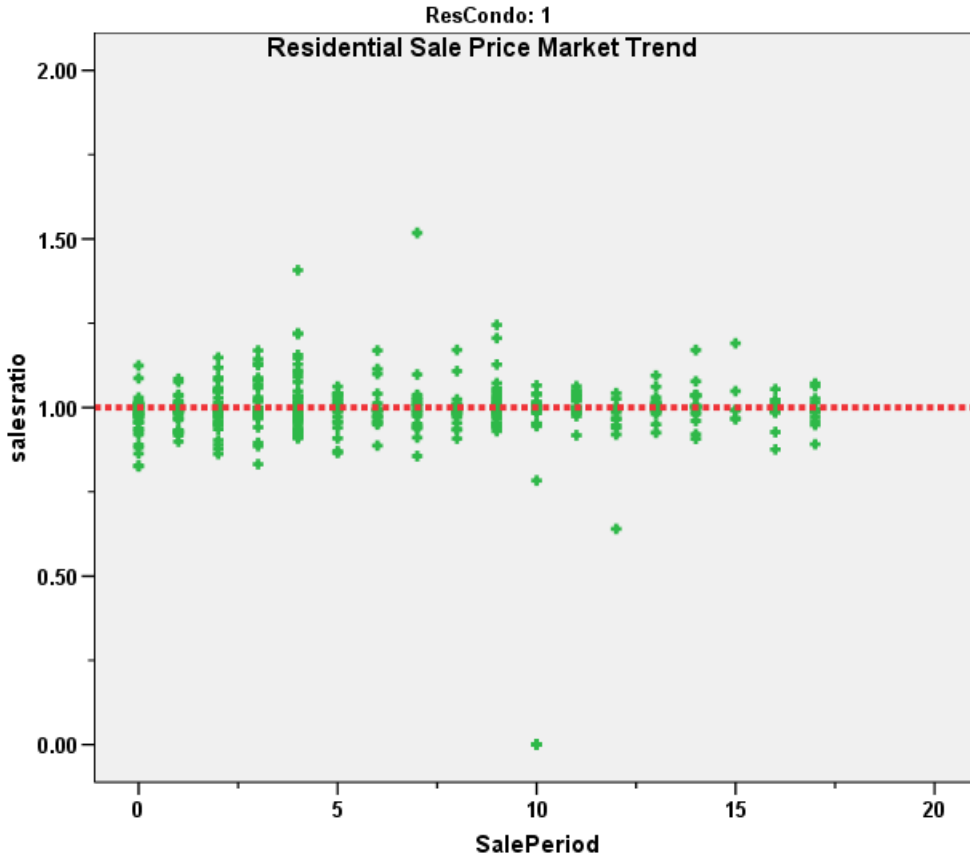
We next analyzed the residential dataset using the 18-month sale period for any residual market trending. We again stratified the analysis between residential non-condominiums and condominiums, with the following results:

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

ResCondo	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
0	1	(Constant)	.983	.007		146.216	.000
		SalePeriod	.002	.001	.094	2.378	.018
1	1	(Constant)	.995	.013		78.075	.000
		SalePeriod	-.003	.002	-.077	-1.612	.108

a. Dependent Variable: salesratio





The residential condominium analysis indicated no significant market trending across the 18-month period used by the assessor. For the residential NON-condominium market trend analysis, while there was a marginal trend statistically, the magnitude of the trend (at less than .2% per month) was not significant.

### 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 2011 between each group stratified by residential non-condominiums and condominiums, as follows:

Residential Type	Group	N	Median	Mean
Residential Non-Condo	Unsold	13,793	\$290	\$384
	Sold	622	\$301	\$400
Residential Condo	Unsold	11,634	\$376	\$530
	Sold	428	\$459	\$536

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

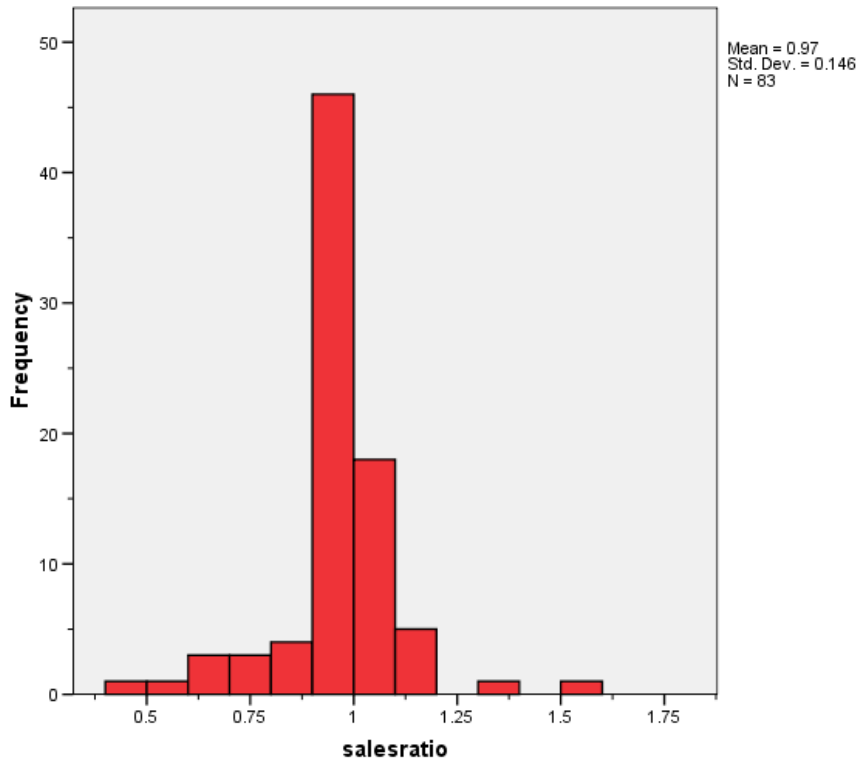
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

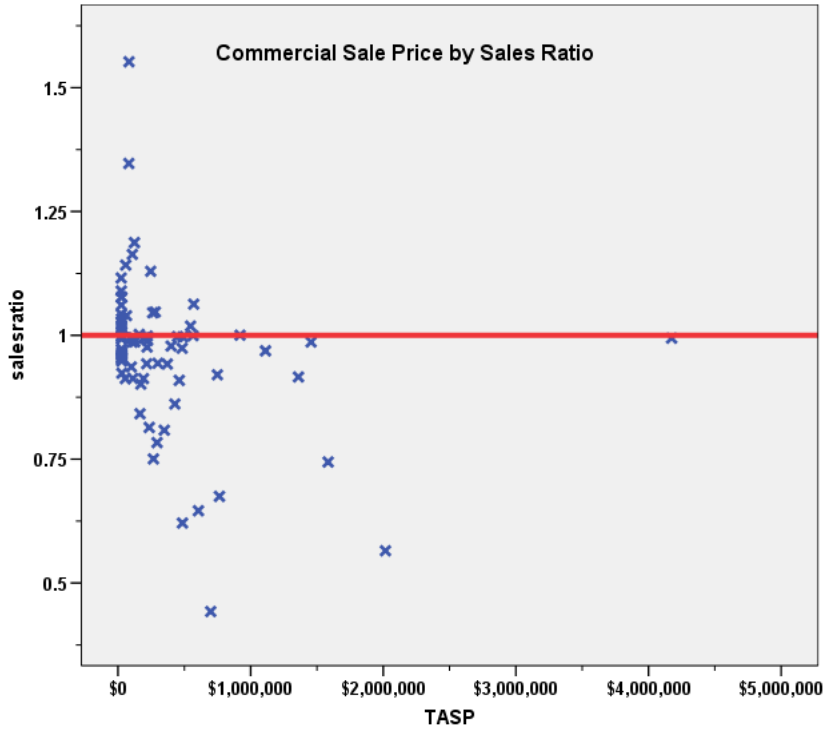
1. Total sales	1,878
2. Selected qualified sales	1,376
3. Select improved sales (non-duplicate)	1,207
4. Select commercial/industrial sales	83

The sales ratio analysis resulted in the following ratio statistics:

Median	<b>0.987</b>
Price Related Differential	<b>1.081</b>
Coefficient of Dispersion	<b>.088</b>

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





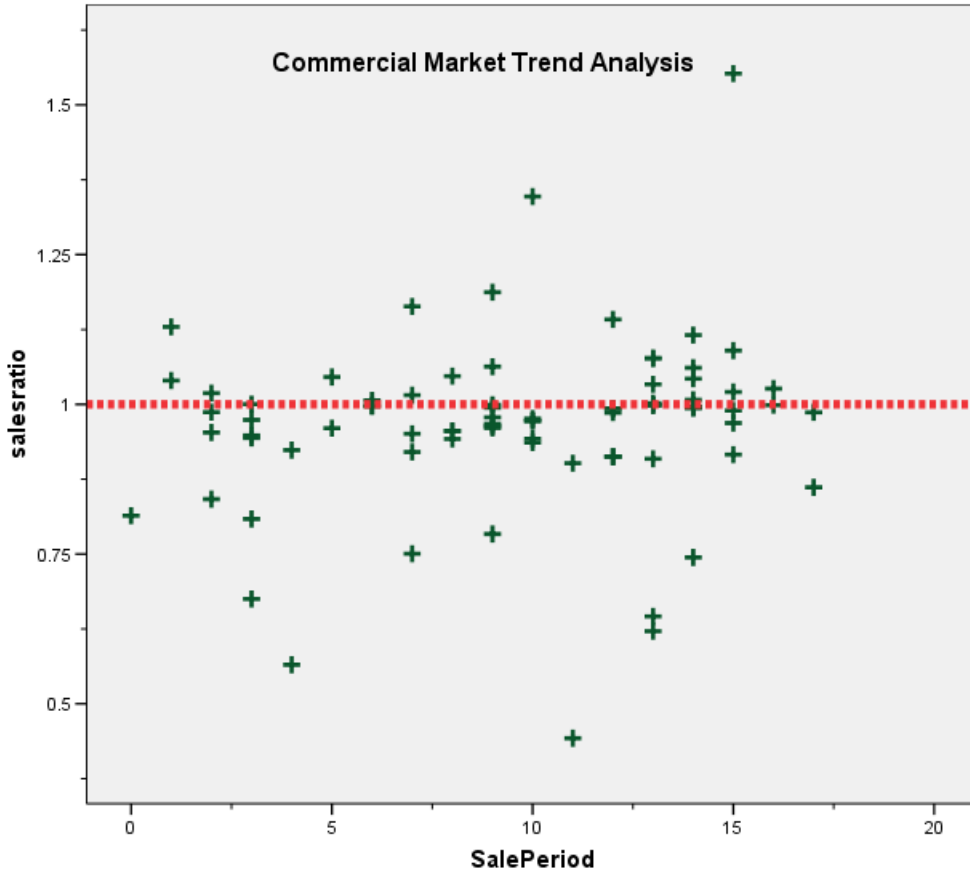
### Commercial Market Trend Analysis

The 83 commercial/industrial sales were next analyzed by subclass for any residual market trending, 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)	.919	.038		24.100	.000
	SalePeriod	.005	.004	.154	1.402	.165

a. Dependent Variable: salesratio



The market trend results indicated no significant market trend. We concluded that the assessor adequately considered market trending in their valuation of commercial/industrial properties.

### Sold/Unsold Analysis

For the sold/unsold analysis of commercial properties, 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:

Subclass	Group	No.	Median	Mean
Total	Unsold	2,640	\$181	\$248
	Sold	83	\$179	\$246

Based on the results of these comparisons, we concluded that the Eagle County assessor was valuing sold and unsold commercial properties consistently.

## V. VACANT LAND SALE RESULTS

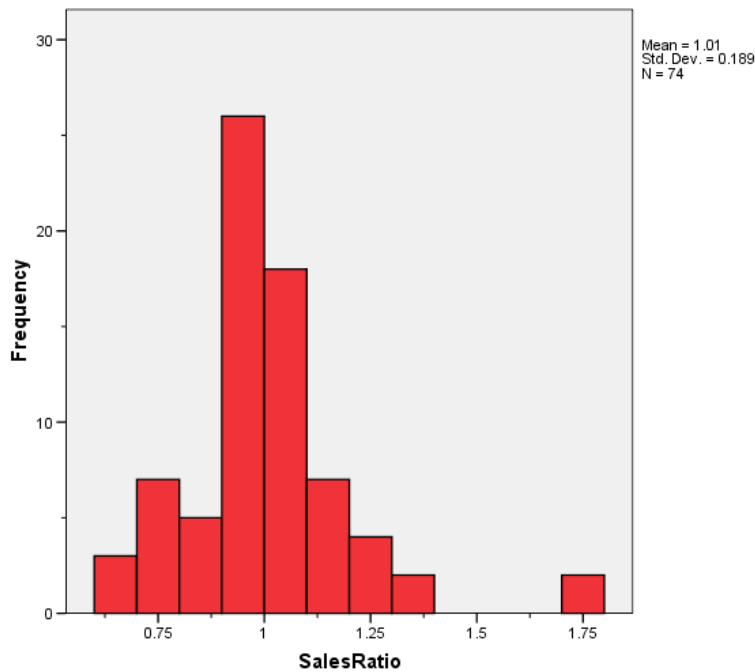
The following steps were taken to analyze vacant land sales:

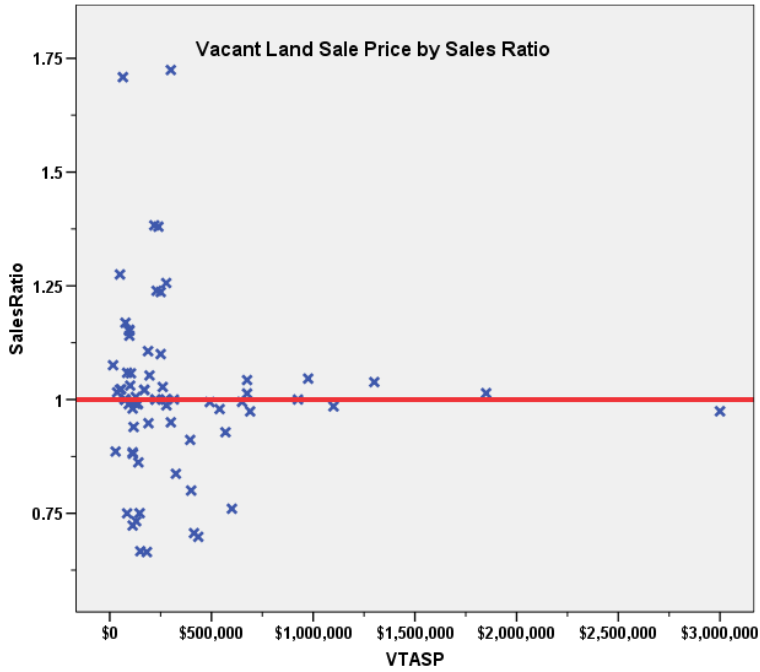
1. Total sales	1,878
2. Selected qualified sales	1,376
3. Select vacant land sales (non-duplicate, non-ag)	74
4. Exclude extreme ratios	74

The sales ratio analysis resulted in the following ratio statistics:

Median	<b>1.000</b>
Price Related Differential	<b>1.016</b>
Coefficient of Dispersion	<b>.117</b>

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





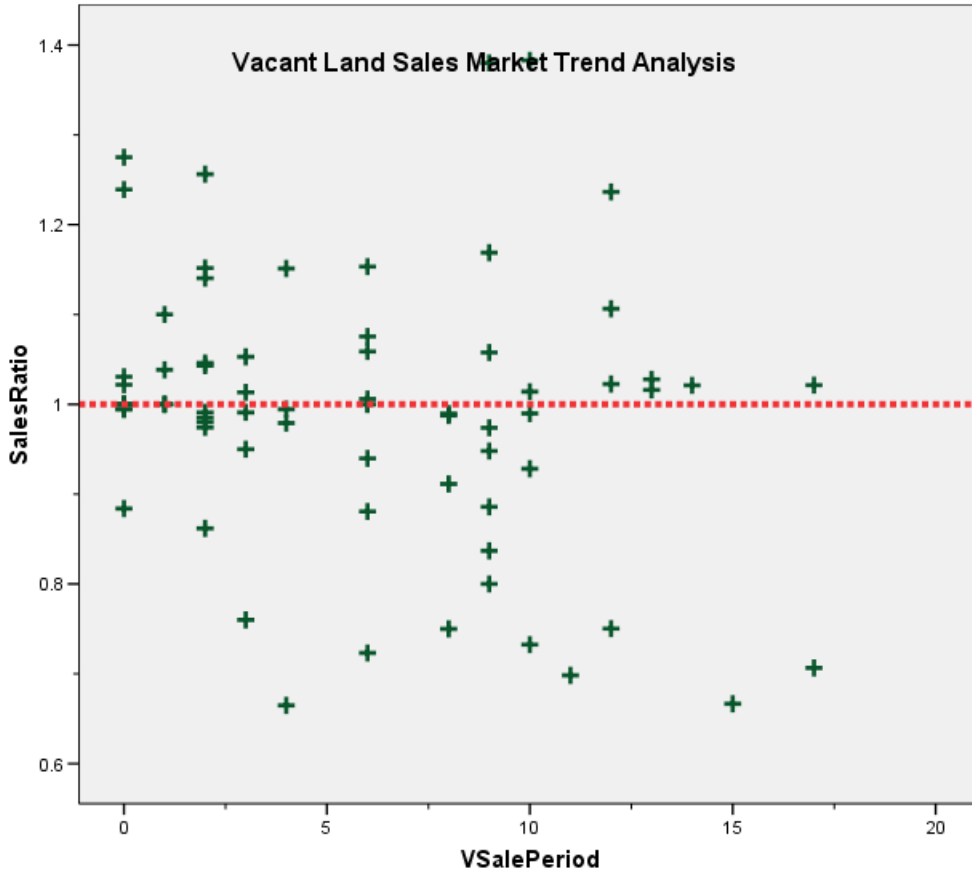
### Vacant Land Market Trend Analysis

The assessor did not apply any market trend adjustments to the vacant land dataset. The 74 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)	1.032	.027		37.569	.000
VSalePeriod	-.007	.004	-.217	-1.862	.067

a. Dependent Variable: SalesRatio



The market trend results indicated no statistically significant trend. We concluded that the assessor has adequately considered market tending in Eagle County’s vacant land valuation for 2011.

### Sold/Unsold Analysis

We compared the median change in actual value between 2010 and 2011 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

Group	N	Median	Mean
Unsold	4,131	0.64	0.69
Sold	73	0.53	0.57

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; based on the parameters developed for the 2011 audit. Eagle County was exempt from this analysis.

## **VI. CONCLUSIONS**

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

**STATISTICAL ABSTRACT**

**Residential**

**Ratio Statistics for CURRTOT / TASP**

ResCondo	95% Confidence Interval for Mean			Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Mean	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
0	.997	.989	1.004	.995	.991	.999	95.7%	.977	.962	.993	1.020	.065	9.5%
1	.978	.964	.993	.995	.992	.997	95.4%	.992	.982	1.001	.987	.062	16.0%

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.

**0 = Residential Non-Condominiums, 1 = Residential Condominiums**

**Commercial/Industrial**

**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			
.967	.935	.999	.987	.967	.995	95.2%	.895	.824	.965	1.081	.088	15.1%

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	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			
1.011	.968	1.055	1.000	.991	1.016	95.3%	.996	.962	1.029	1.016	.117	18.7%

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**

ResCondo			Count	Percent
0	SPRec	\$50K to \$100K	1	.2%
		\$150K to \$200K	12	1.9%
		\$200K to \$300K	73	11.5%
		\$300K to \$500K	176	27.8%
		\$500K to \$750K	107	16.9%
		\$750K to \$1,000K	67	10.6%
		Over \$1,000K	198	31.2%
	Overall	634	100.0%	
	Excluded	0		
	Total	634		
1	SPRec	\$50K to \$100K	10	2.3%
		\$150K to \$200K	31	7.0%
		\$200K to \$300K	106	23.9%
		\$300K to \$500K	86	19.4%
		\$500K to \$750K	74	16.7%
		\$750K to \$1,000K	30	6.8%
		Over \$1,000K	98	22.1%
		LT \$25K	3	.7%
		\$100K to \$150K	5	1.1%
	Overall	443	100.0%	
Excluded	0			
Total	443			

**Ratio Statistics for CURRTOT / TASP**

ResCondo	Group	Median	Price Related	Coefficient of	Coefficient of Variation
			Differential	Dispersion	Median Centered
0	\$50K to \$100K	.846	1.000	.000	.%
	\$150K to \$200K	1.000	1.000	.030	5.6%
	\$200K to \$300K	.993	1.004	.062	9.1%
	\$300K to \$500K	.999	.999	.067	9.7%
	\$500K to \$750K	.998	1.001	.067	9.6%
	\$750K to \$1,000K	1.004	1.002	.062	9.0%
	Over \$1,000K	.988	1.019	.065	9.8%
	Overall	.995	1.020	.065	9.6%
1	\$50K to \$100K	1.000	.739	.%	.%
	\$150K to \$200K	1.002	.999	.082	12.6%
	\$200K to \$300K	.990	1.000	.039	5.6%
	\$300K to \$500K	.997	1.001	.034	5.2%
	\$500K to \$750K	.998	.998	.044	7.0%
	\$750K to \$1,000K	.999	1.002	.039	8.7%
	Over \$1,000K	.994	1.007	.035	5.5%
	LT \$25K	1.013	1.009	.060	12.7%
	\$100K to \$150K	.970	1.005	.092	17.5%
	Overall	.995	.987	.062	15.8%

### Improved Area Case Processing Summary

ResCondo	Count	Percent
0	ImpSFRec	0
	LE 500 sf	1
	500 to 1,000 sf	2
	1,000 to 1,500 sf	15
	1,500 to 2,000 sf	136
	2,000 to 3,000 sf	167
	3,000 sf or Higher	182
	Overall	131
	Excluded	634
	Total	0
1	ImpSFRec	0
	LE 500 sf	15
	500 to 1,000 sf	35
	1,000 to 1,500 sf	99
	1,500 to 2,000 sf	161
	2,000 to 3,000 sf	85
	3,000 sf or Higher	32
	Overall	16
	Excluded	443
	Total	0

### Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
					Median Centered
0	0	1.027	1.000	.000	.%
	LE 500 sf	.909	.962	.069	9.8%
	500 to 1,000 sf	.983	1.015	.089	12.2%
	1,000 to 1,500 sf	.990	.996	.054	7.6%
	1,500 to 2,000 sf	.999	1.006	.064	9.7%
	2,000 to 3,000 sf	.999	1.016	.070	10.2%
	3,000 sf or Higher	.988	1.029	.068	9.9%
	Overall	.995	1.020	.065	9.6%
1	0	.000	.758	.	.%
	LE 500 sf	.998	1.006	.056	7.6%
	500 to 1,000 sf	.989	.990	.039	6.0%
	1,000 to 1,500 sf	.997	1.005	.043	7.7%
	1,500 to 2,000 sf	.997	1.004	.032	5.6%
	2,000 to 3,000 sf	.989	1.012	.046	6.8%
	3,000 sf or Higher	.999	1.013	.055	8.9%
	Overall	.995	.987	.062	15.8%

## Age

### Case Processing Summary

ResCondo		Count	Percent
0	AgeRec 0	1	.2%
	Over 100	6	.9%
	75 to 100	1	.2%
	50 to 75	4	.6%
	25 to 50	88	13.9%
	5 to 25	346	54.6%
	5 or Newer	188	29.7%
	Overall	634	100.0%
	Excluded	0	
	Total	634	
1	AgeRec 0	15	3.4%
	25 to 50	162	36.6%
	5 to 25	144	32.5%
	5 or Newer	122	27.5%
	Overall	443	100.0%
	Excluded	0	
Total	443		

### Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
					Median Centered
0	0	1.027	1.000	.000	.%
	Over 100	.994	.976	.101	14.3%
	75 to 100	1.004	1.000	.000	.%
	50 to 75	.989	.983	.072	15.3%
	25 to 50	.998	1.001	.066	9.2%
	5 to 25	.991	1.021	.064	9.2%
	5 or Newer	.998	1.024	.067	10.2%
	Overall	.995	1.020	.065	9.6%
1	0	.000	.758	.	.%
	25 to 50	.998	.996	.036	5.8%
	5 to 25	.995	.996	.038	7.2%
	5 or Newer	.991	1.019	.054	8.0%
	Overall	.995	.987	.062	15.8%

## Commercial Median Ratio Stratification

### Sale Price

#### Case Processing Summary

		Count	Percent
SPRec	LT \$25K	2	2.4%
	\$25K to \$50K	26	31.3%
	\$50K to \$100K	5	6.0%
	\$100K to \$150K	10	12.0%
	\$150K to \$200K	5	6.0%
	\$200K to \$300K	11	13.3%
	\$300K to \$500K	10	12.0%
	\$500K to \$750K	6	7.2%
	\$750K to \$1,000K	2	2.4%
	Over \$1,000K	6	7.2%
Overall		83	100.0%
Excluded		0	
Total		83	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	1.103	1.000	.012	1.7%
\$25K to \$50K	.993	1.001	.034	4.2%
\$50K to \$100K	1.142	.971	.166	22.9%
\$100K to \$150K	.995	.998	.052	9.2%
\$150K to \$200K	.913	.999	.056	7.7%
\$200K to \$300K	.990	1.004	.087	12.7%
\$300K to \$500K	.943	1.002	.079	13.1%
\$500K to \$750K	.960	1.016	.186	28.9%
\$750K to \$1,000K	.838	.982	.194	27.5%
Over \$1,000K	.942	.987	.128	20.6%
Overall	.987	1.081	.088	14.9%

### Subclass

#### Case Processing Summary

		Count	Percent
abstrimp	2212	1	1.2%
	2215	1	1.2%
	2220	2	2.4%
	2235	3	3.6%
	2240	1	1.2%
	2245	75	90.4%
Overall		83	100.0%
Excluded		0	
Total		83	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2212	.987	1.000	.000	.%
2215	1.063	1.000	.000	.%
2220	.949	1.009	.030	4.3%
2235	.646	.879	.221	39.1%
2240	.916	1.000	.000	.%
2245	.993	1.084	.083	14.3%
Overall	.987	1.081	.088	14.9%

### Vacant Land Median Ratio Stratification

#### Case Processing Summary

	Count	Percent
abstrind 100	34	45.9%
200	2	2.7%
400	23	31.1%
520	1	1.4%
530	1	1.4%
540	1	1.4%
550	1	1.4%
1112	9	12.2%
2130	1	1.4%
2135	1	1.4%
Overall	74	100.0%
Excluded	0	
Total	74	

#### Ratio Statistics for CURRLND / VTASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
100	.997	1.013	.092	14.1%
200	1.480	.985	.165	23.3%
400	1.000	1.039	.104	19.5%
520	1.053	1.000	.000	.%
530	1.016	1.000	.000	.%
540	1.022	1.000	.000	.%
550	1.028	1.000	.000	.%
1112	.881	.975	.175	21.8%
2130	.985	1.000	.000	.%
2135	1.380	1.000	.000	.%
Overall	1.000	1.016	.117	18.9%