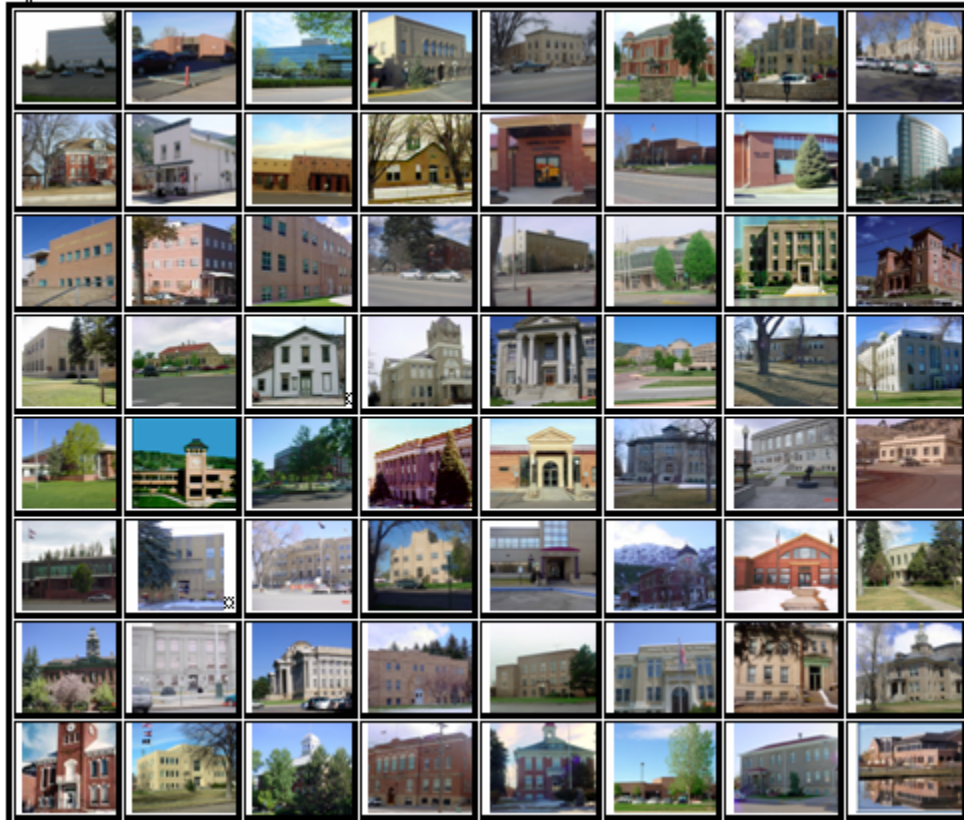




2009  
SUMMIT COUNTY  
PROPERTY ASSESSMENT  
STUDY

---



WILDROSE  
APPRAISAL, INCORPORATED  
Audit Division



September 15, 2009

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

**RE: Final Report for the 2009 Colorado Property Assessment Study**

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2009 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

## TABLE OF CONTENTS

Introduction .....	3
Regional/Historical Sketch of Summit County .....	4
Ratio Analysis.....	6
<i>Random Deed Analysis</i> .....	7
Time Trending Verification .....	8
Sold/Unsold Analysis .....	9
Agricultural Land Study .....	11
<i>Agricultural Land</i> .....	11
<i>Agricultural Outbuildings</i> .....	13
Sales Verification.....	14
Economic Area Review and Evaluation .....	15
Natural Resources .....	16
<i>Earth and Stone Products</i> .....	16
Vacant Land.....	17
Possessory Interest Properties .....	18
Personal Property Audit .....	19
Wildrose Auditor Staff.....	21
Appendices.....	22

# INTRODUCTION

---



## Colorado

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

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

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

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

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

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

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

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

Wildrose Audit has completed the Property Assessment Study for 2009 and is pleased to report its findings for Summit County in the following report.

# REGIONAL / HISTORICAL SKETCH OF SUMMIT COUNTY

## Regional Information

Summit 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

Summit County has a population of approximately 25,399 people with 38.7 people per square mile, according to the U.S. Census Bureau's 2006 estimated population data.

Summit County was organized as one of the seventeen original Colorado counties by the First Territorial Legislature on November 1, 1861. It was named for the many mountain summits in the county. Until February 2, 1874, its boundaries included the area now comprising Summit County, Grand County, Routt County, Moffat County, Garfield County, Eagle County, and Rio Blanco County.

In 1874, the northern half of the original Summit County was split off to form Grand County. With the creation of Garfield and Eagle counties in 1883, Summit County arrived at its present boundaries.

Established in 1859, the historic Town of Breckenridge is a Home Rule Municipality and is the county seat. The town of Breckenridge was formally created in November 1859 by General George E. Spencer. Spencer chose the name "Breckinridge" after the United States' Vice President of the time, John C. Breckinridge of Kentucky in the hopes of flattering the government and gaining a post

office. Spencer succeeded in his plan and a post office was built in Breckenridge. When the Civil War broke out in 1861, however, the former vice president sided with the Confederates (as a brigadier general) and the pro-Union citizens of Breckenridge decided to change the town's name. The first "i" was changed to an "e" and the town's name has been spelled Breckenridge ever since.

Prospectors entered what is now Summit County (then part of Utah Territory) during the Pikes Peak Gold Rush of 1859 and soon after that, the placer gold discoveries farther east at Idaho Springs. Breckenridge was founded to serve the miners working rich placer gold deposits discovered along Georgia Gulch. Placer gold mining was soon joined by hard rock mining, as prospectors followed the gold to its source veins in the hills.

Summit county is rich in activities for locals and visitors. It is home to Copper Mountain, Breckenridge, Keystone and Arapahoe Ski Resorts. Winter activities include skiing, snowboarding, ice-skating, cross-country skiing, dog sleigh, and snowmobiling. Summer activities include hiking, biking, fishing, and trail running.

*([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 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 Summit County are:

<b>Summit 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	94	0.983	1.188	11.5	Compliant
Condominium	1,728	1.000	1.009	5	Compliant
Single Family	1,247	1.000	1.021	6.4	Compliant
Vacant Land	458	0.978	1.152	18.4	Compliant

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

Summit 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 2008 and 2009 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

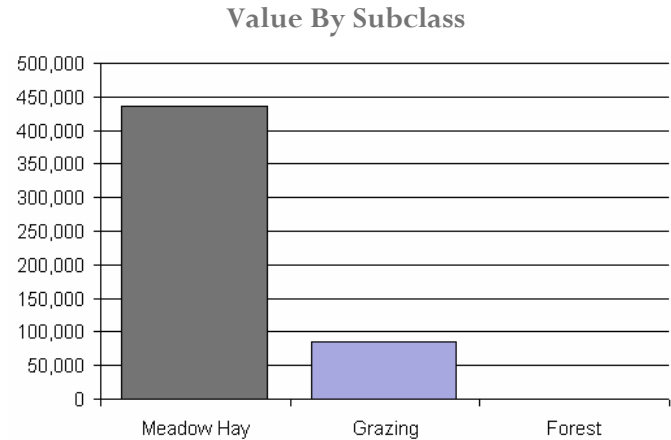
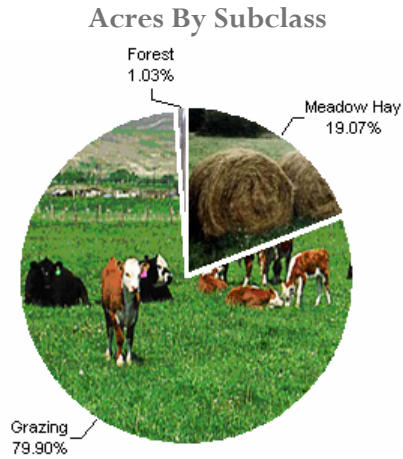
### **Conclusions**

After applying the above described methodologies, it is concluded that Summit 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>Summit 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>
4137	Meadow Hay	5,611	77.82	436,660	436,660	1.00
4147	Grazing	23,503	3.64	85,478	85,478	1.00
4177	Forest	303	2.24	680	680	1.00
<b>Total/Avg</b>		<b>29,417</b>	<b>17.77</b>	<b>522,817</b>	<b>522,817</b>	<b>1.00</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**

Summit 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 2009 for Summit 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 31 sales listed as unqualified. All of the sales in the unqualified sales sample had reasons that were clear and supportable.

### **Conclusions**

Summit 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**

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

identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

## **Recommendations**

None

# NATURAL RESOURCES

---

## Earth and Stone Products

---

### Methodology

Under the guidelines of the Assessor's Reference Library (ARL), Volume 3, Natural Resource Valuation Procedures, the income approach was applied to determine value for production of earth and stone products. The number of tons was multiplied by an economic royalty rate determined by the Division of Property Taxation to determine income. The income was multiplied by a recommended Hoskold factor to determine the actual value. The Hoskold factor is determined by the life of

the reserves or the lease. Value is based on two variables: life and tonnage. The operator determines these since there is no other means to obtain production data through any state or private agency.

### Conclusions

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

### Recommendations

None

## VACANT LAND

### **Subdivision Discounting**

Subdivisions were reviewed in 2009 in Summit 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**

Summit 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 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Section 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.

Summit County has been reviewed for their procedures and adherence to guidelines when

assessing and valuing 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

Summit 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

Summit 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.

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

- Public Record Documents
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor
- Website listings
- Business license data from incorporated towns

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.

Summit County submitted their personal property written audit plan and was current for the 2009 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Incomplete or inconsistent declarations
- Non-filing Accounts - Best Information Available
- Ski areas, leasing companies and renewable energy companies





### **Conclusions**

Summit 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*

**Andy Rodriguez**, *Field Analyst*

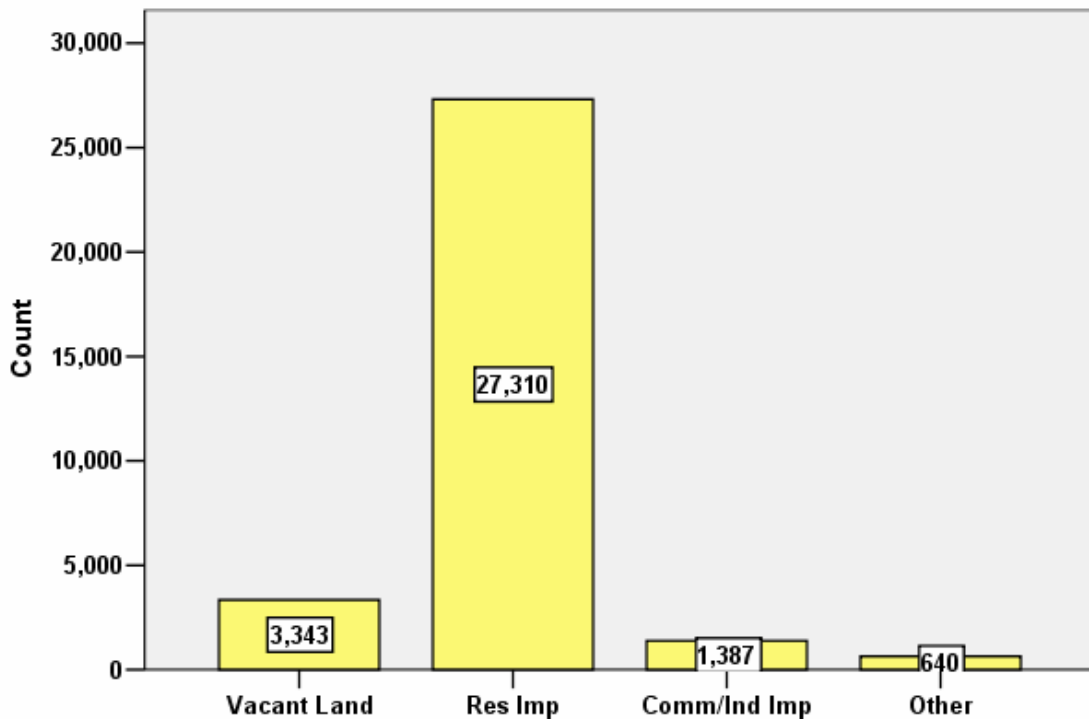
# APPENDICES

## STATISTICAL COMPLIANCE RESULTS FOR SUMMIT COUNTY 2009

### I. OVERVIEW

Summit County is located in central Colorado. The county has a total of 32,680 real property parcels, according to data submitted by the county assessor's office in 2009. 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) accounted for 53% of all vacant land parcels.

For residential improved properties, single family properties accounted for 32% of all residential properties. Residential condominiums, coded as 1230, accounted for 47% of all residential properties. Based on the guidelines of the 2009 audit, we will analyze residential condominiums separately in the following analysis.

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 2009 Colorado Property Assessment Study. Information was provided by the Summit Assessor's Office on May 11, 2009. 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	14,146
2. Selected qualified sales	4,364
3. Select improved sales (non-duplicate)	3,674
4. Select residential sales only	2,987
5. Sales between January 1, 2007 and June 30, 2008	2,915

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

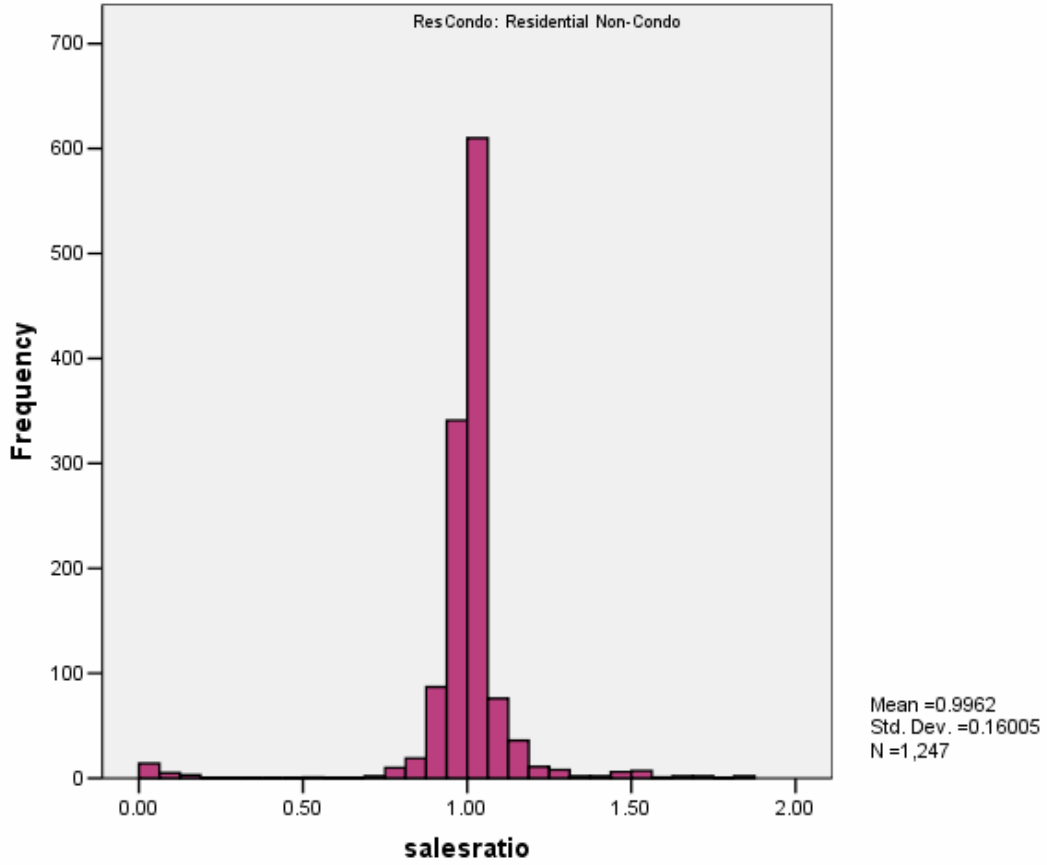
### Residential Non-Condo = 1,247

Median	<b>1.000</b>
Price Related Differential	<b>1.021</b>
Coefficient of Dispersion	<b>.064</b>

### Residential Condo = 1,728

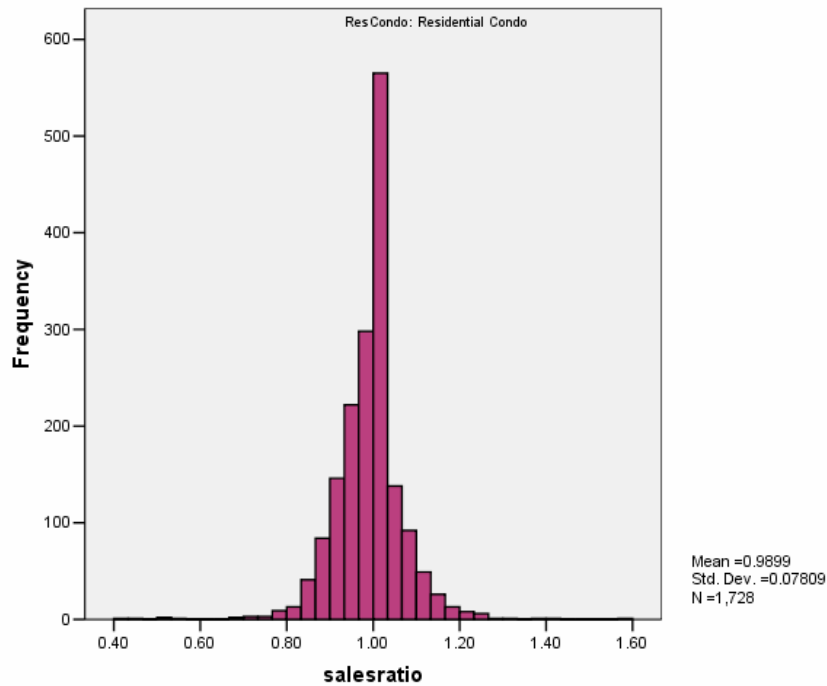
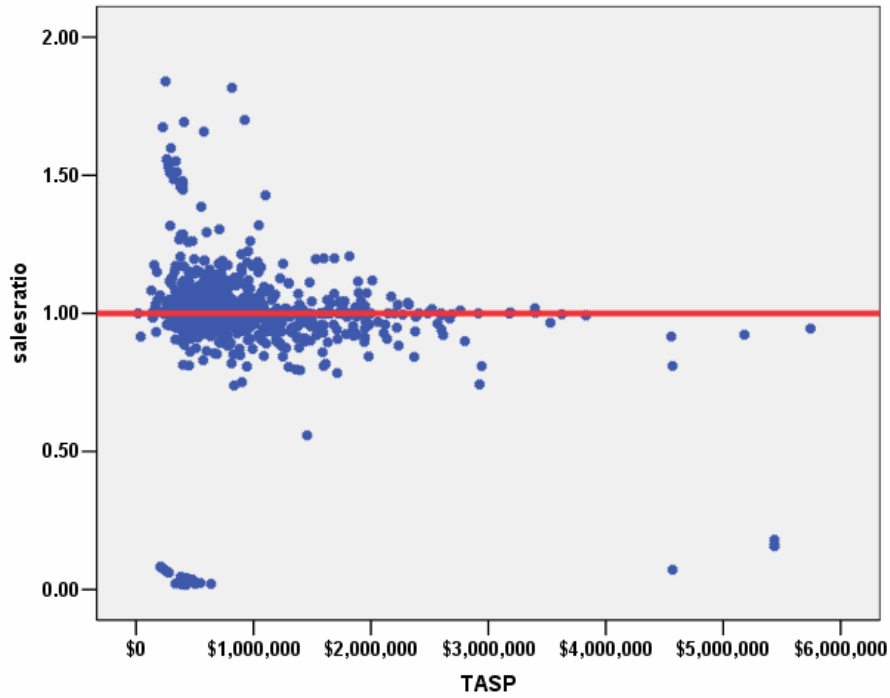
Median	<b>1.000</b>
Price Related Differential	<b>1.009</b>
Coefficient of Dispersion	<b>.050</b>

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:

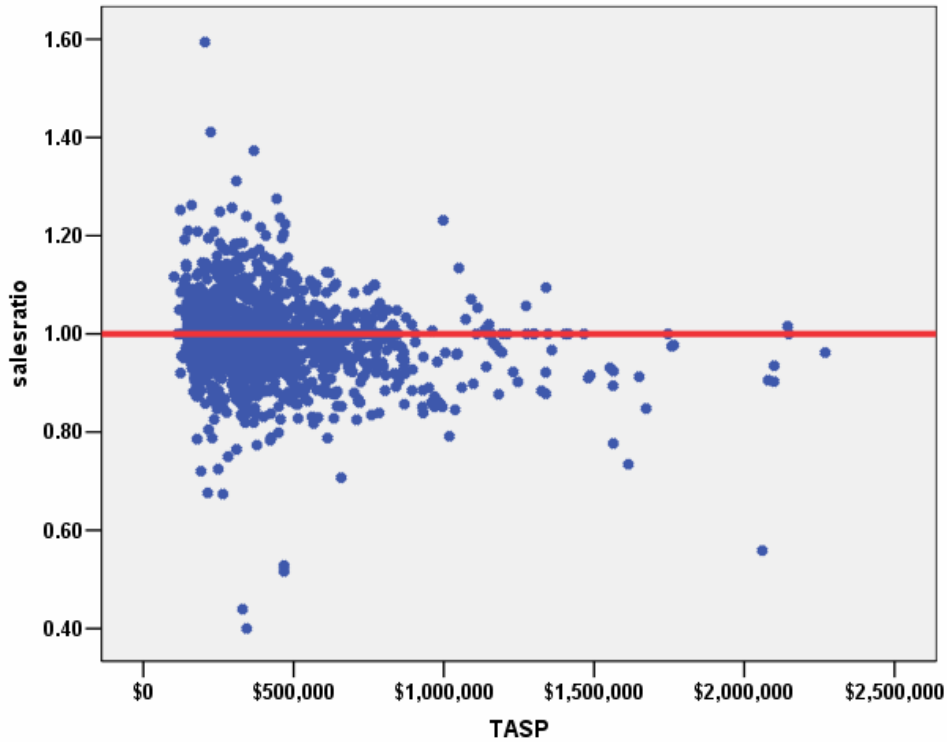




ResCondo: Residential Non-Condo  
**Residential Sale Price by Sales Ratio**



ResCondo: Residential Condo  
**Residential Sale Price by Sales Ratio**



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

### Residential Market Trend Analysis

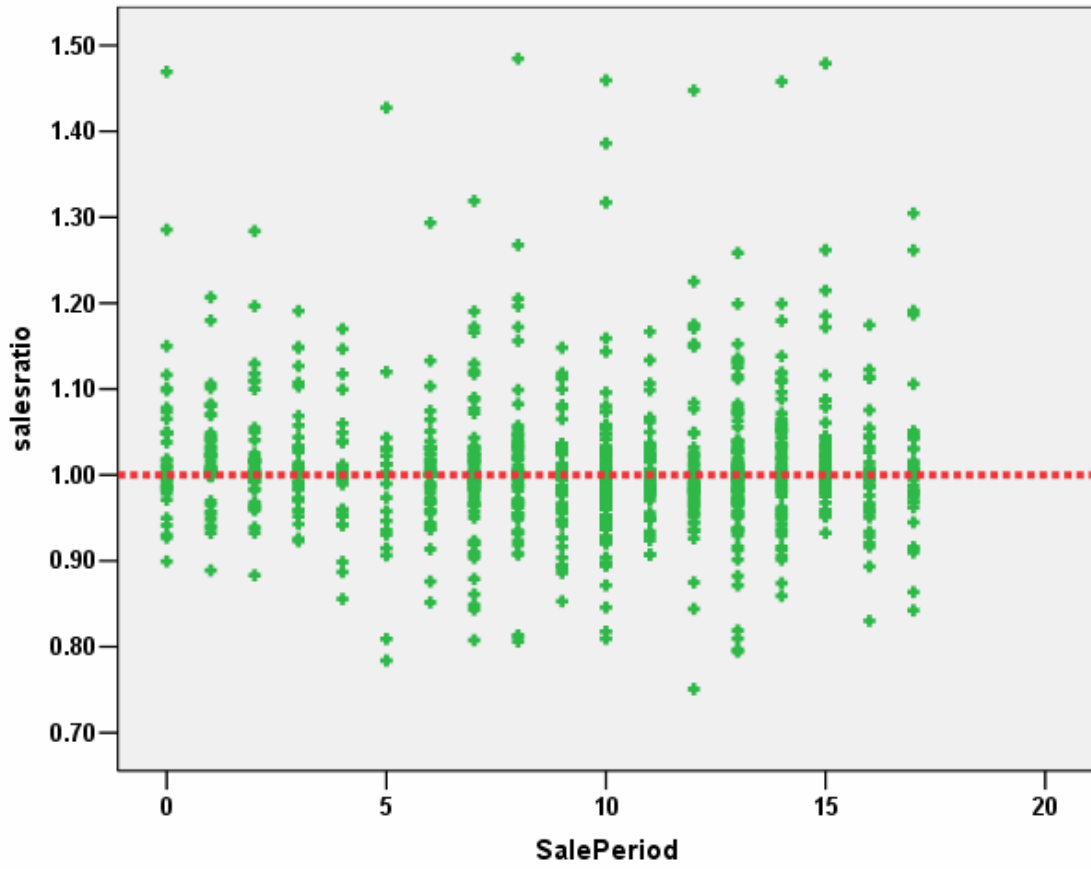
We next analyzed the residential dataset using the 18-month sale period for any residual market trending. We again stratified the analysis between residential non-condominiums and condominiums, with the following results:

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

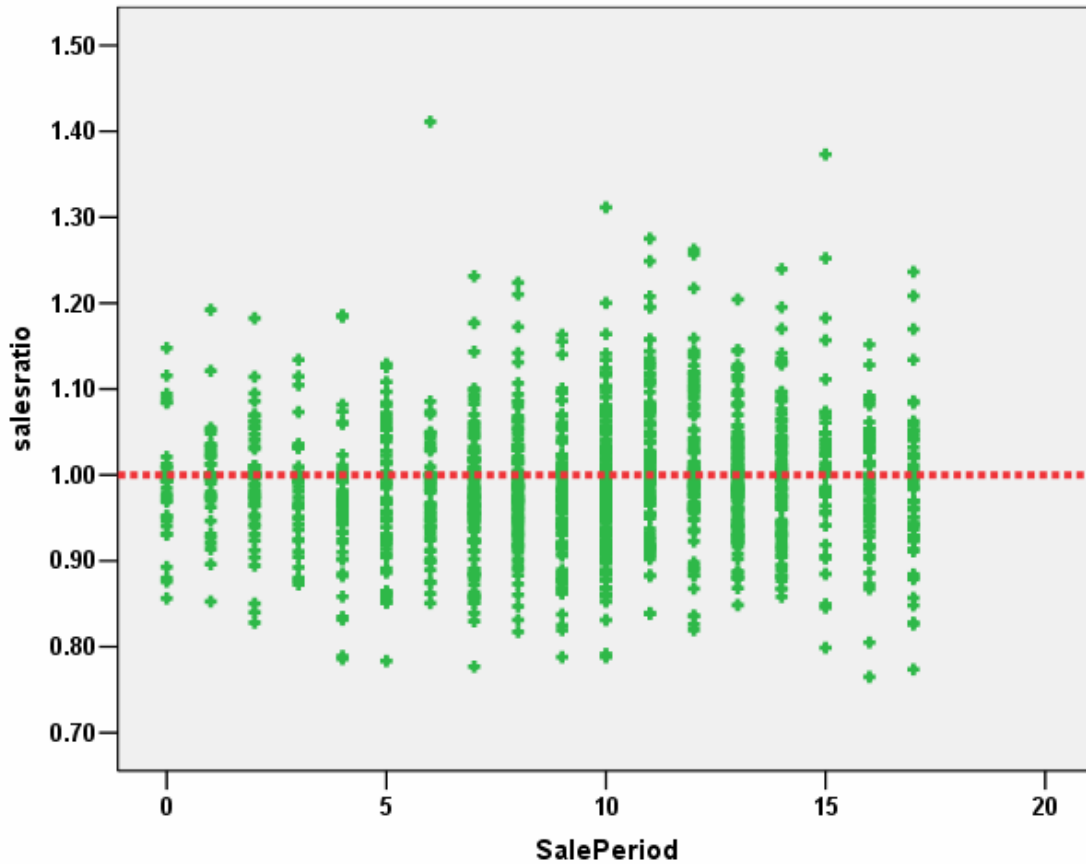
ResCondo	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Residential Non-Condo	1	(Constant)	1.010	.005		220.052	.000
		SalePeriod	.000	.000	-.022	-.775	.439
Residential Condo	1	(Constant)	.983	.004		254.188	.000
		SalePeriod	.001	.000	.061	2.544	.011

a. Dependent Variable: salesratio

ResCondo: Residential Non-Condo  
**Residential Sale Price Market Trend**



ResCondo: Residential Condo  
**Residential Sale Price Market Trend**



While the residential condominium sales indicated a statistically significant market trend in the sales ratios, the magnitude of this trend (at 0.1% per month) was not significant. With no significant market trend evident in the sales ratio data, 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 2009 between each group stratified by residential non-condominiums and condominiums, as follows:

Residential Type	Group	N	Median	Mean
Residential Non-Condo	Unsold	13097	\$400	\$434
	Sold	1223	\$405	\$447
Residential Condo	Unsold	11081	\$392	\$427
	Sold	1728	\$406	\$443
Total	Unsold	24178	\$396	\$431
	Sold	2951	\$405	\$445

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

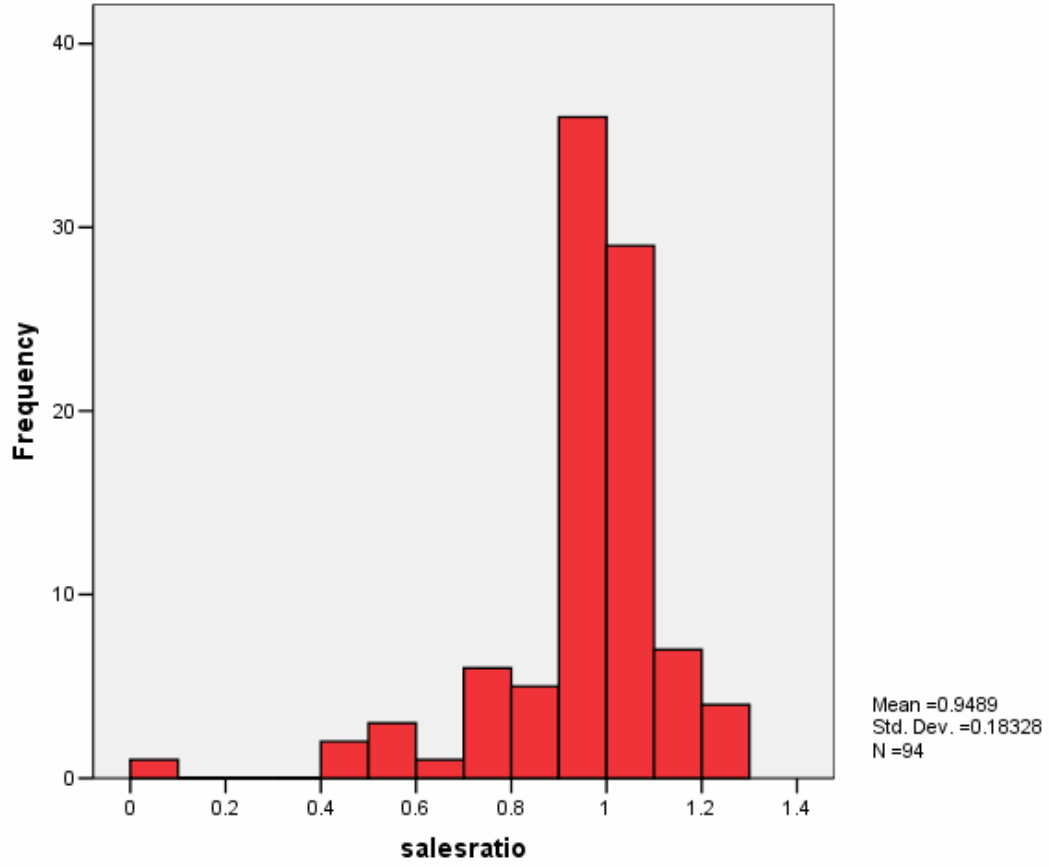
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

1. Total sales	14,146
2. Selected qualified sales	4,364
3. Select improved sales (non-duplicate)	3,674
4. Select commercial/industrial sales	461
4. Select commercial/industrial sales between Jan 07 & Jun 08	125
5. Exclude sales with multiple parcels	94

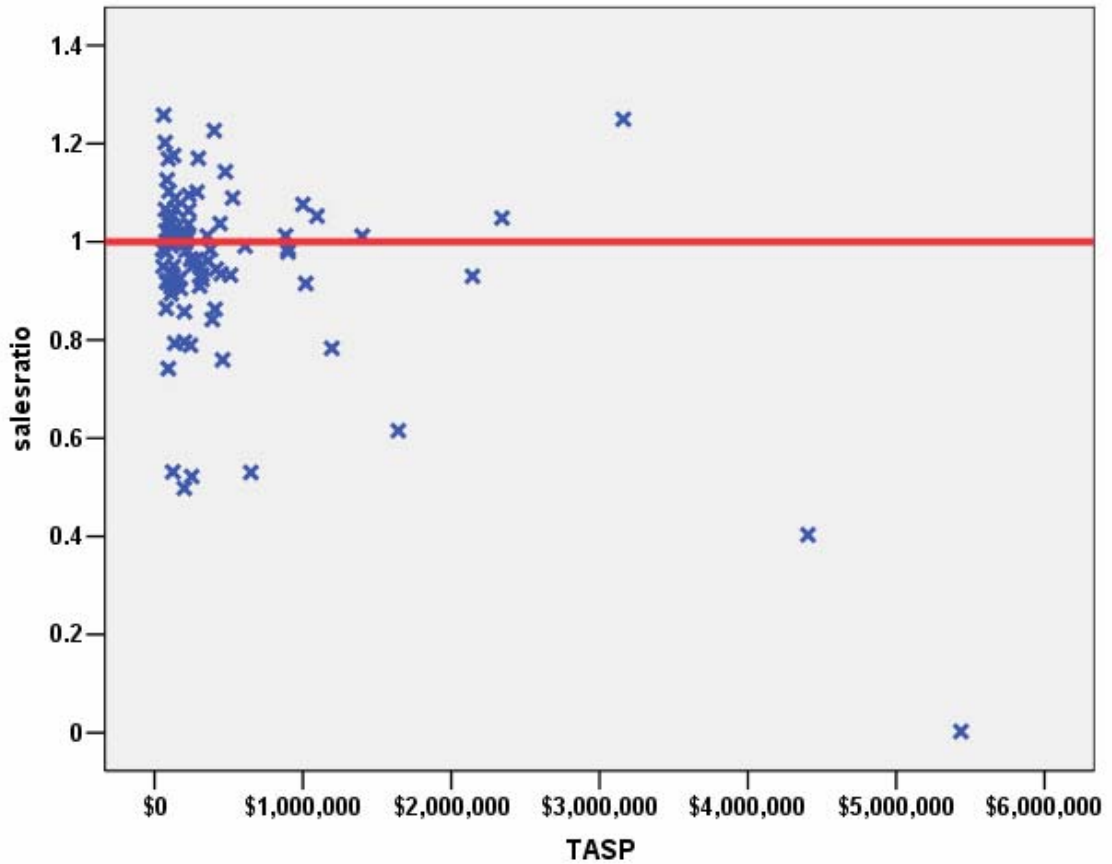
The sales ratio analysis resulted in the following ratio statistics:

Median	<b>0.983</b>
Price Related Differential	<b>1.188</b>
Coefficient of Dispersion	<b>.115</b>

The above tables indicate that the Summit 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 Sale Price by Sales Ratio



### Commercial Market Trend Analysis

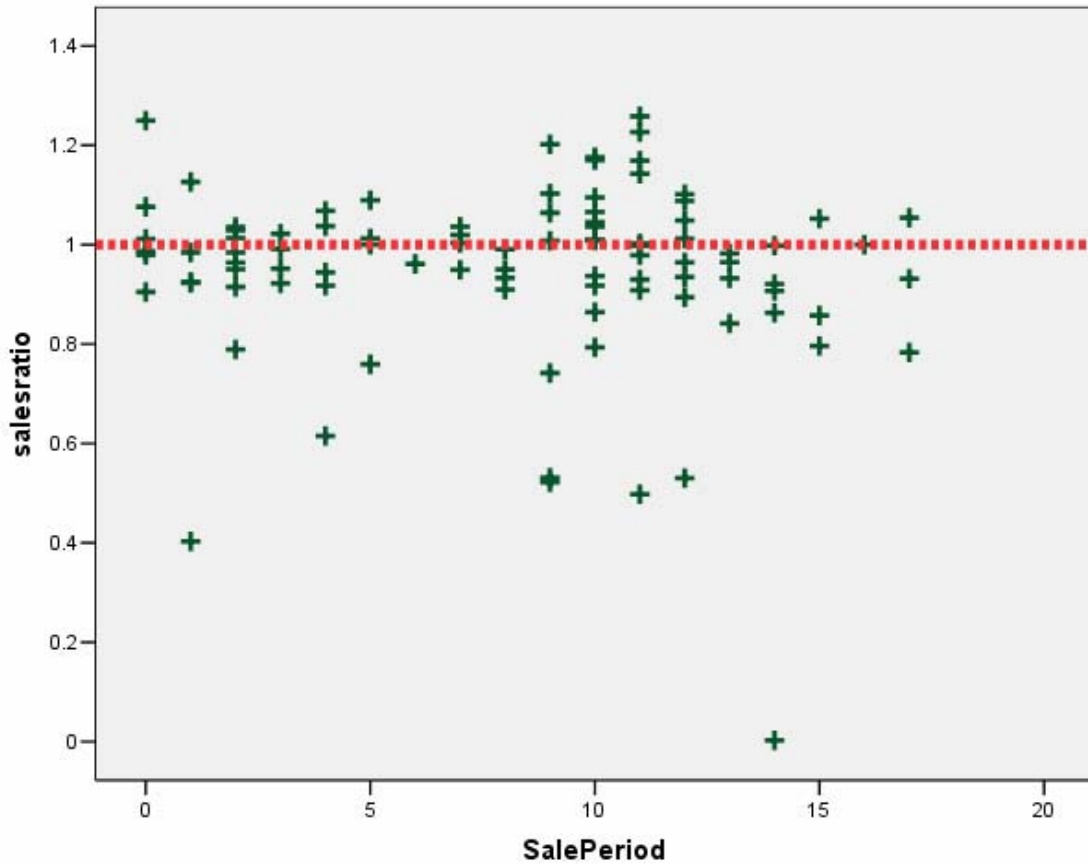
The 94 commercial/industrial sales were next analyzed by subclass for any residual market trending, examining the sale ratios across the 18-month sale period with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.977	.037		26.208	.000
	SalePeriod	-.003	.004	-.090	-.871	.386

a. Dependent Variable: salesratio

### Commercial Market Trend Analysis



The market trend results indicated no statistically significant residual 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. We stratified the analysis by subclass in the following table:

Subclass	Group	No.	Median	Mean
2212	Unsold	101	\$250	\$345
	Sold	5	\$267	\$252
2215	Unsold	21	\$68	\$69
	Sold	1	\$113	\$113
2220	Unsold	45	\$260	\$352
	Sold	4	\$136	\$165



2230	<b>Unsold</b>	124	\$269	\$322
	<b>Sold</b>	3	\$356	\$319
2245	<b>Unsold</b>	937	\$232	\$246
	<b>Sold</b>	48	\$238	\$239
Total	<b>Unsold</b>	1,321	\$230	\$256
	<b>Sold</b>	62	\$231	\$236

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

## V. VACANT LAND SALE RESULTS

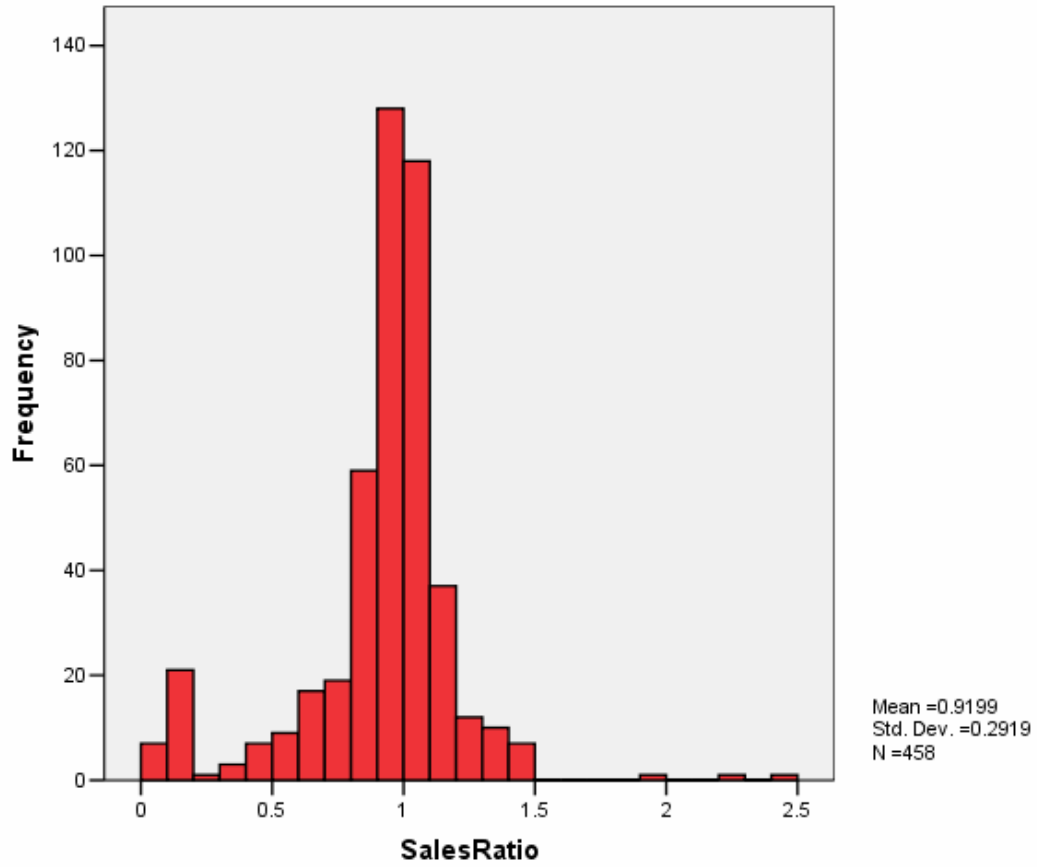
The following steps were taken to analyze vacant land sales:

1. Total sales	7,423
2. Selected qualified sales	1,826
3. Select vacant land sales (non-duplicate)	462
4. Select non-agricultural sales	458

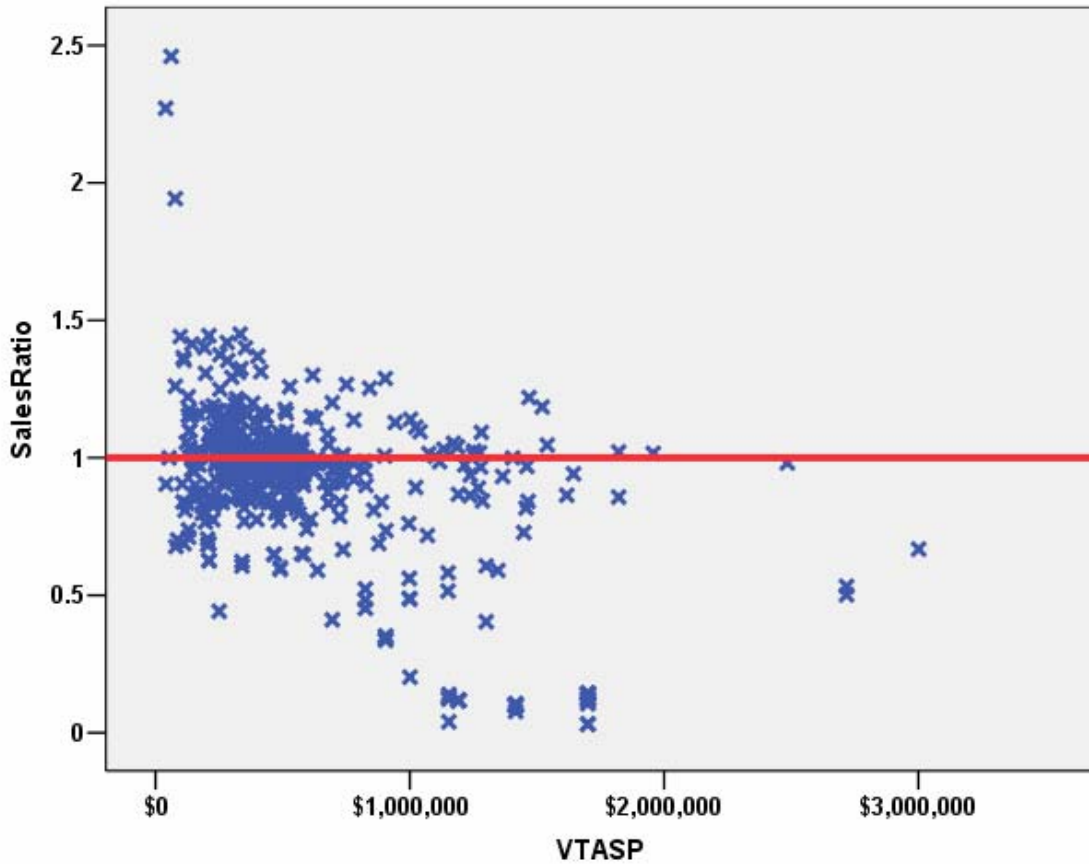
The sales ratio analysis resulted in the following ratio statistics:

Median	<b>0.978</b>
Price Related Differential	<b>1.152</b>
Coefficient of Dispersion	<b>.184</b>

The above tables indicate that the Summit 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

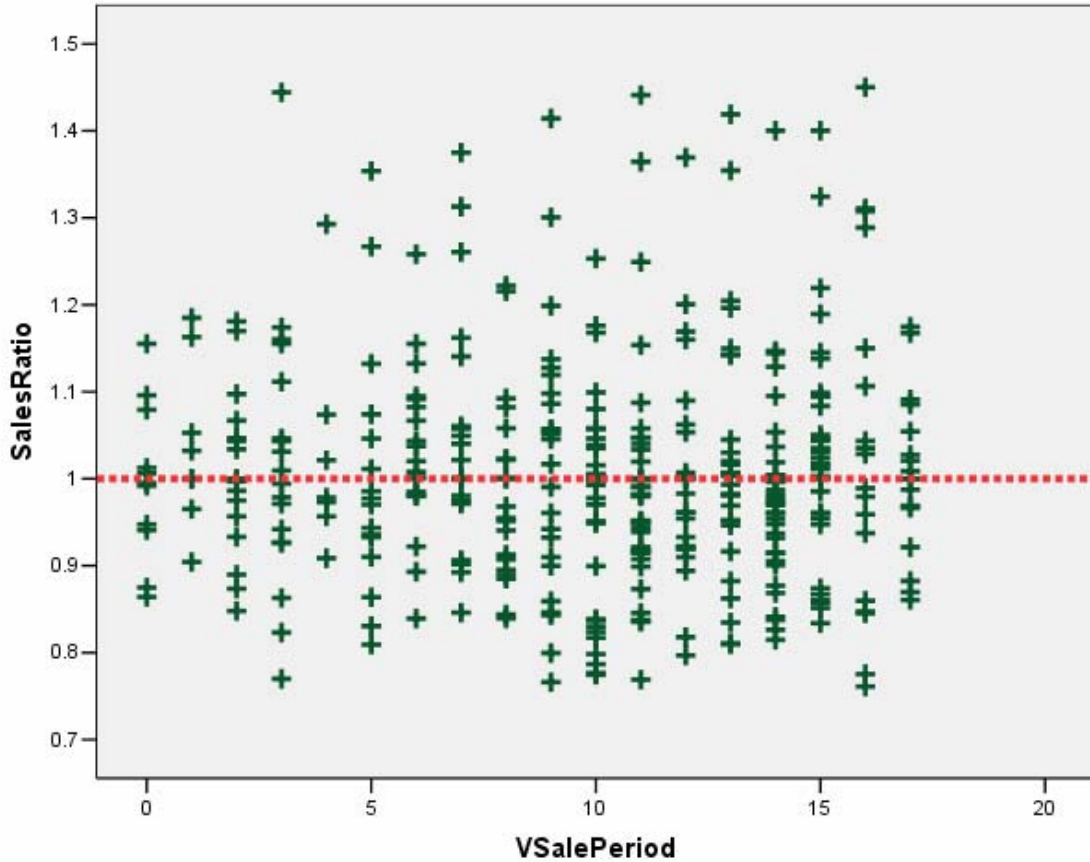
The assessor did not apply any market trend adjustments to the vacant land dataset. The 458 vacant land sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.012	.016		64.422	.000
	VSalePeriod	.000	.001	-.012	-.243	.808

a. Dependent Variable: SalesRatio

### Vacant Land Sales Market Trend Analysis



The market trend results indicated no statistically significant trend. We concluded that the assessor has adequately considered market tending in Summit County’s vacant land valuation for 2009.

### Sold/Unsold Analysis

We compared the median change in actual value between 2008 and 2009 for vacant land properties to determine if sold and unsold properties were valued consistently (stratified by subdivision with at least 10 sales), as follows:

SUBDIVNO	Group	N	Median	Mean
1082	Unsold	16	1.33	1.35
	Sold	10	1.32	1.33
1220	Unsold	196	1.62	1.68
	Sold	38	1.64	1.68
1785	Unsold	32	1.62	1.61
	Sold	17	1.63	1.60
20	Unsold	73	2.61	2.73

	<b>Sold</b>	16	2.63	3.32
2018	<b>Unsold</b>	38	1.72	1.77
	<b>Sold</b>	12	1.52	1.60
2032	<b>Unsold</b>	7	1.51	1.55
	<b>Sold</b>	10	1.42	1.45
2091	<b>Unsold</b>	28	1.18	1.29
	<b>Sold</b>	11	1.16	1.25
2208	<b>Unsold</b>	28	11.61	7.44
	<b>Sold</b>	6	1.19	1.19
406	<b>Unsold</b>	88	1.28	1.31
	<b>Sold</b>	61	1.26	1.22
651	<b>Unsold</b>	70	1.98	1.95
	<b>Sold</b>	18	2.07	1.94
880	<b>Unsold</b>	6	2.51	2.24
	<b>Sold</b>	12	8.92	8.31
9000	<b>Unsold</b>	253	1.12	6.57
	<b>Sold</b>	10	1.60	2.16
Total	<b>Unsold</b>	835	1.56	3.42
	<b>Sold</b>	221	1.50	2.00

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 Summit 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	\$261.74	\$1.452	
		95% Confidence Interval for Mean	Lower Bound	\$258.90	
			Upper Bound	\$264.59	
		5% Trimmed Mean	\$251.74		
		Median	\$230.31		
		Variance	18278.696		
		Std. Deviation	\$135.199		
		Minimum	-\$198		
		Maximum	\$1,951		
		Range	\$2,149		
		Interquartile Range	\$146		
		Skewness	1.738	.026	
		Kurtosis	7.700	.053	
		4277.00	4277.00	Mean	\$271.65
95% Confidence Interval for Mean	Lower Bound			\$218.24	
	Upper Bound			\$325.06	
5% Trimmed Mean	\$261.67				
Median	\$253.66				
Variance	22686.873				
Std. Deviation	\$150.622				
Minimum	\$17				
Maximum	\$790				
Range	\$773				
Interquartile Range	\$140				
Skewness	1.315			.409	
Kurtosis	3.321			.798	

**VI. CONCLUSIONS**

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

**STATISTICAL ABSTRACT**

**Residential**

**Ratio Statistics for CURRTOT / TASP**

Mean		.993
95% Confidence Interval for Mean	Lower Bound	.988
	Upper Bound	.997
Median		1.000
95% Confidence Interval for Median	Lower Bound	1.000
	Upper Bound	1.000
	Actual Coverage	95.2%
Weighted Mean		.978
95% Confidence Interval for Weighted Mean	Lower Bound	.968
	Upper Bound	.989
Price Related Differential		1.015
Coefficient of Dispersion		.056
Coefficient of Variation	Mean Centered	12.0%

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

**Commercial/Industrial**

**Ratio Statistics for CURRTOT / TASP**

Mean		.949
95% Confidence Interval for Mean	Lower Bound	.911
	Upper Bound	.986
Median		.983
95% Confidence Interval for Median	Lower Bound	.950
	Upper Bound	1.002
	Actual Coverage	95.1%
Weighted Mean		.798
95% Confidence Interval for Weighted Mean	Lower Bound	.576
	Upper Bound	1.021
Price Related Differential		1.188
Coefficient of Dispersion		.115
Coefficient of Variation	Mean Centered	19.3%

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.

## Vacant Land

### Ratio Statistics for CURRLND / VTASP

Mean		.920
95% Confidence Interval for Mean	Lower Bound	.893
	Upper Bound	.947
Median		.978
95% Confidence Interval for Median	Lower Bound	.961
	Upper Bound	.990
	Actual Coverage	95.6%
Weighted Mean		.799
95% Confidence Interval for Weighted Mean	Lower Bound	.752
	Upper Bound	.845
Price Related Differential		1.152
Coefficient of Dispersion		.184
Coefficient of Variation	Mean Centered	31.7%

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

		Count	Percent
SPRec	LT \$25K	1	.0%
	\$25K to \$50K	1	.0%
	\$100K to \$150K	48	1.6%
	\$150K to \$200K	136	4.6%
	\$200K to \$300K	445	15.0%
	\$300K to \$500K	1052	35.4%
	\$500K to \$750K	652	21.9%
	\$750K to \$1,000K	314	10.6%
	Over \$1,000K	326	11.0%
Overall	2975	100.0%	
Excluded	0		
Total	2975		



**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LT \$25K	1.000	1.000	.000	.
\$25K to \$50K	.916	1.000	.000	.
\$100K to \$150K	1.021	1.001	.051	7.1%
\$150K to \$200K	1.000	1.000	.053	7.3%
\$200K to \$300K	1.000	.998	.068	15.0%
\$300K to \$500K	1.000	1.000	.057	12.6%
\$500K to \$750K	1.000	.999	.045	10.2%
\$750K to \$1,000K	1.000	1.000	.050	9.3%
Over \$1,000K	1.000	1.029	.065	13.0%
Overall	1.000	1.015	.056	12.0%

**Subclass**

**Case Processing Summary**

	Count	Percent
PredUse 1112	724	24.3%
1113	140	4.7%
1114	284	9.5%
1117	33	1.1%
1118	27	.9%
1119	8	.3%
1140	3	.1%
1150	2	.1%
1170	6	.2%
1229	20	.7%
1230	1728	58.1%
Overall	2975	100.0%
Excluded	0	
Total	2975	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1112	1.000	1.011	.050	10.0%
1113	1.000	1.011	.045	9.2%
1114	1.000	1.004	.026	4.2%
1117	1.032	1.001	.090	18.6%
1118	1.032	1.013	.131	24.2%
1119	1.032	1.005	.025	4.6%
1140	.158	1.000	.048	10.1%
1150	.779	1.005	.283	40.1%
1170	.945	1.307	.253	44.1%
1229	.038	3.098	2.822	780.8%
1230	1.000	1.009	.050	7.9%
Overall	1.000	1.015	.056	12.0%

**Improved Area**

**Case Processing Summary**

	Count	Percent
ImpSFRec 0	4	.1%
LE 500 sf	179	6.0%
500 to 1,000 sf	993	33.4%
1,000 to 1,500 sf	958	32.2%
1,500 to 2,000 sf	441	14.8%
2,000 to 3,000 sf	266	8.9%
3,000 sf or Higher	134	4.5%
Overall	2975	100.0%
Excluded	0	
Total	2975	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
0	.158	.980	.172	32.5%
LE 500 sf	.993	1.078	.142	31.3%
500 to 1,000 sf	1.000	1.004	.046	7.1%
1,000 to 1,500 sf	1.000	1.012	.052	10.0%
1,500 to 2,000 sf	1.000	1.009	.048	9.1%
2,000 to 3,000 sf	1.000	1.011	.051	9.7%
3,000 sf or Higher	1.000	1.019	.059	11.2%
Overall	1.000	1.015	.056	12.0%

**Improvement Quality**

**Case Processing Summary**

	Count	Percent
Qual 2.00	6	.2%
3.00	106	3.6%
4.00	735	24.7%
5.00	2065	69.5%
5.50	1	.0%
6.00	56	1.9%
7.00	2	.1%
Overall	2971	100.0%
Excluded	4	
Total	2975	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
2.00	.994	1.008	.026	4.1%
3.00	1.000	.999	.057	8.0%
4.00	1.000	1.009	.051	8.4%
5.00	1.000	1.003	.057	12.7%
5.50	1.002	1.000	.000	.
6.00	1.000	1.006	.044	10.5%
7.00	.993	.998	.009	1.2%
Overall	1.000	1.005	.055	11.6%

**Commercial Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$50K to \$100K	16	17.0%
	\$100K to \$150K	21	22.3%
	\$150K to \$200K	5	5.3%
	\$200K to \$300K	19	20.2%
	\$300K to \$500K	15	16.0%
	\$500K to \$750K	4	4.3%
	\$750K to \$1,000K	4	4.3%
	Over \$1,000K	10	10.6%
Overall		94	100.0%
Excluded		0	
Total		94	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$50K to \$100K	1.011	1.003	.101	13.1%
\$100K to \$150K	.998	1.000	.083	13.4%
\$150K to \$200K	.921	1.019	.115	23.5%
\$200K to \$300K	.998	.997	.091	14.8%
\$300K to \$500K	.944	.998	.081	12.3%
\$500K to \$750K	.961	1.018	.161	27.1%
\$750K to \$1,000K	.999	.998	.031	4.7%
Over \$1,000K	.922	1.222	.279	42.4%
Overall	.983	1.188	.115	19.0%

**Subclass**

**Case Processing Summary**

		Count	Percent
PredUse	2112	5	5.3%
	2115	32	34.0%
	2120	3	3.2%
	2130	3	3.2%
	2135	2	2.1%
	2220	1	1.1%
	2245	48	51.1%
Overall		94	100.0%
Excluded		0	
Total		94	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
2112	1.052	.962	.076	11.1%
2115	.988	1.488	.138	21.3%
2120	.930	.997	.053	11.2%
2130	1.012	.983	.044	7.3%
2135	.846	1.071	.273	38.6%
2220	.002	1.000	.000	.
2245	.974	1.016	.081	11.7%
Overall	.983	1.188	.115	19.0%

**Vacant Land Median Ratio Stratification**

**Case Processing Summary**

	Count	Percent
VPredUse 100	283	61.8%
190	18	3.9%
200	14	3.1%
401	93	20.3%
491	19	4.1%
521	2	.4%
531	1	.2%
532	1	.2%
541	3	.7%
551	1	.2%
1112	19	4.1%
1115	3	.7%
1140	1	.2%
Overall	458	100.0%
Excluded	0	
Total	458	

**Ratio Statistics for CURRLND / VTASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
100	.975	1.110	.172	29.5%
190	.141	1.103	2.234	378.1%
200	.692	1.189	.371	45.4%
401	1.000	1.020	.125	16.9%
491	.985	1.092	.174	28.6%
521	.998	.919	.094	13.3%
531	.489	1.000	.000	.
532	1.091	1.000	.000	.
541	.729	1.075	.196	30.1%
551	1.201	1.000	.000	.
1112	.981	1.168	.168	27.8%
1115	1.000	.998	.010	2.0%
1140	.999	1.000	.000	.
Overall	.978	1.152	.184	30.4%