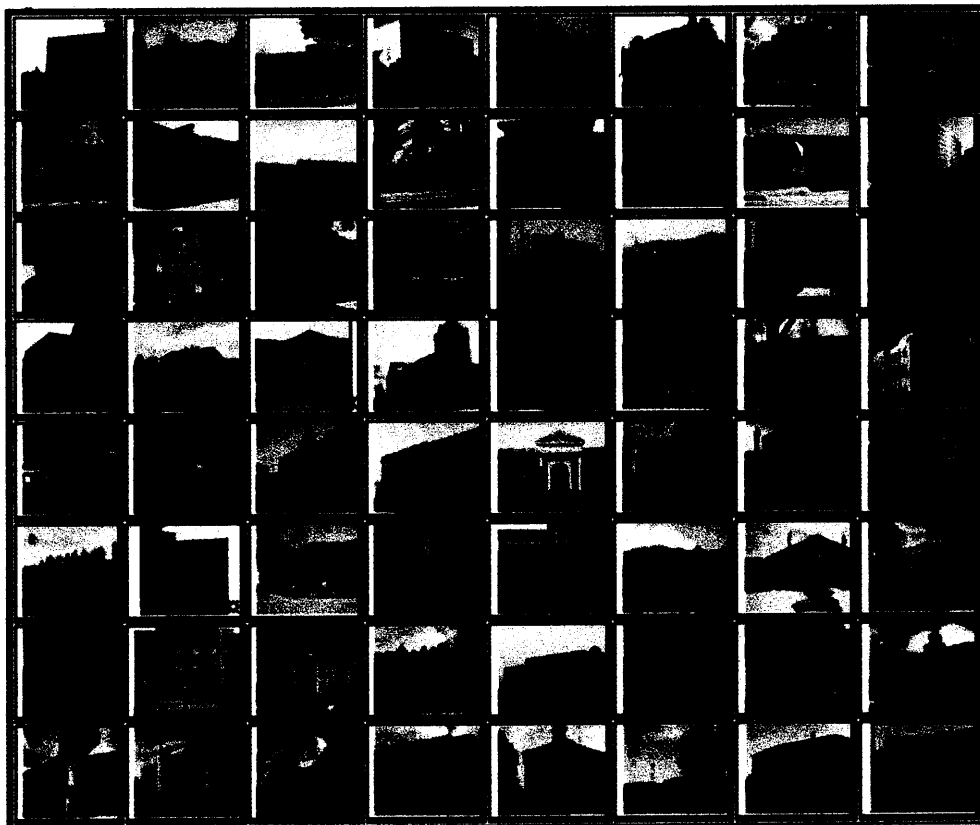




2009  
JEFFERSON COUNTY  
PROPERTY ASSESSMENT  
STUDY

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**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 with a large, prominent initial "H".

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

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## INTRODUCTION

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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 Jefferson County in the following report.

# REGIONAL/HISTORICAL SKETCH OF JEFFERSON COUNTY

## Regional Information

Jefferson County is located in the Front Range region of Colorado. The Colorado Front Range is a colloquial geographic term for the populated areas of the State that are just east of the foothills of the Front Range. It includes

Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld counties.



## Historical Information

Jefferson County has a population of approximately 526,994 people with 682.6 people per square mile, according to the U.S. Census Bureau's 2006 estimated population data.

Jefferson County is one of the seventeen original territorial counties. On August 25, 1855, the Kansas Territorial Legislature created Arapahoe County to govern the entire western portion of the territory. The county was named for the Arapaho Nation of Native Americans that lived in the region.

In July 1858, gold was discovered along the South Platte River in Arapahoe County (in present day Englewood). This discovery precipitated the Pike's Peak Gold Rush. Many residents of the mining region felt disconnected from the remote territorial governments of Kansas and Nebraska, so they voted to form their own Territory of Jefferson on October 24, 1859. The following month, the Jefferson Territorial Legislature organized 12 counties for the new territory, including Jefferson County. Jefferson County was named for the namesake of the Jefferson Territory, Thomas Jefferson, the principal author of the Declaration of Independence and the nation's third president. Golden City served as the

county seat of Jefferson County. Robert Williamson Steele, Governor of the Provisional Government of the Territory of Jefferson from 1859 to 1861, built his home in the county at Mount Vernon and later at Apex.

The Jefferson Territory never received federal sanction, but during his last week in office, President James Buchanan signed an act which organized the Territory of Colorado on February 28, 1861. That November 1, the new Colorado General Assembly organized the 17 original counties of Colorado, including a new Jefferson County. In 1908, the southern tip of Jefferson County was transferred to Park County, reducing Jefferson County to its present length of 54 miles. Several annexations by the City & County of Denver and the 2001 consolidation of the City & County of Broomfield removed eastern portions of the county.

A major employer in Jefferson County is the large Coors Brewing Company in Golden. Also, the state-supported Colorado School of Mines is located in Jefferson County, offering programs in mining and engineering. The county seat is Golden and the most populous city is Lakewood.

([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 Jefferson County are:

Jefferson County Ratio Grid						
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis	
Commercial/Industrial	277	0.958	1.011	13.2	Compliant	
Condominium	N/A	N/A	N/A	N/A	N/A	
Single Family	12,135	0.982	1.023	8.4	Compliant	
Vacant Land	289	0.969	1.054	14.8	Compliant	

Ratio Statistics for currtot /tasp

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.979	1.004	.075
2.00	.979	1.024	.091
3.00	.989	1.034	.089
4.00	.986	1.025	.071
5.00	.977	1.007	.067
6.00	.962	1.025	.092
7.00	.988	1.035	.128
8.00	.982	1.022	.107
9.00	.984	1.010	.111
Overall	.982	1.023	.084

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

Jefferson 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	N/A
Single Family	Compliant
Vacant Land	Compliant

**Conclusions**

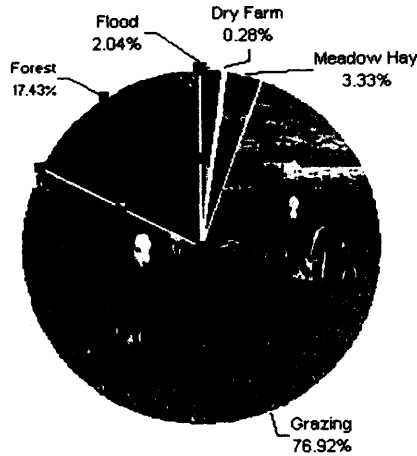
After applying the above described methodologies, it is concluded that Jefferson County is reasonably treating its sold and unsold properties in the same manner.

**Recommendations**

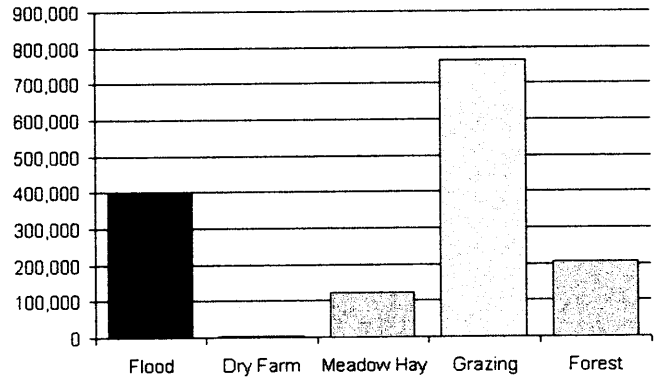
None

# 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>Jefferson 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	1,614	247.16	398,920	398,920	1.00
4127	Dry Farm	218	21.10	4,600	4,510	1.02
4137	Meadow Hay	2,634	46.49	122,459	122,459	1.00
4147	Grazing	60,827	12.56	764,164	764,164	1.00
4177	Forest	13,784	14.83	204,357	204,357	1.00
<b>Total/Avg</b>		<b>79,077</b>	<b>18.90</b>	<b>1,494,500</b>	<b>1,494,410</b>	<b>1.00</b>

### Recommendations

None



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## Agricultural Outbuildings

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### **Methodology**

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.74 through 5.77 were being followed.

### **Conclusions**

Jefferson 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)(1) 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 Jefferson 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 48 sales listed as unqualified. All but six of the sales selected in the sample gave reasons that were clear and supportable. Six sales had insufficient documentation.

### Conclusions

Jefferson County appears to be doing an adequate job of verifying their sales. There are no recommendations.

### Recommendations

None

# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

Jefferson County has submitted a written narrative describing the economic areas that make up the county's market areas. Jefferson 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 Jefferson 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 2009 in Jefferson 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

Jefferson 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.

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

assessing and valuing commercial possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

## Conclusions

Jefferson 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

Jefferson 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.

Jefferson 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:

- Personal Observation, Physical Canvassing or Word of Mouth

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.

Jefferson 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:

- Businesses in a selected area
- Accounts with obvious discrepancies
- New businesses filing for the first time
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Non-filing Accounts - Best Information Available
- No filing for the current year but less than 3 years
- Lease buyouts not, or incorrectly, reported
- Taxable Personal Property reported is substantially above or below that reported for similar businesses
- Obvious confusion or misunderstanding of forms by taxpayer



Jefferson County's median ratio is 1.03. This is in compliance with the State Board of Equalization (SBOE) compliance requirements which range from .90 to 1.10 with no COD requirements.

### **Conclusions**

Jefferson 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*

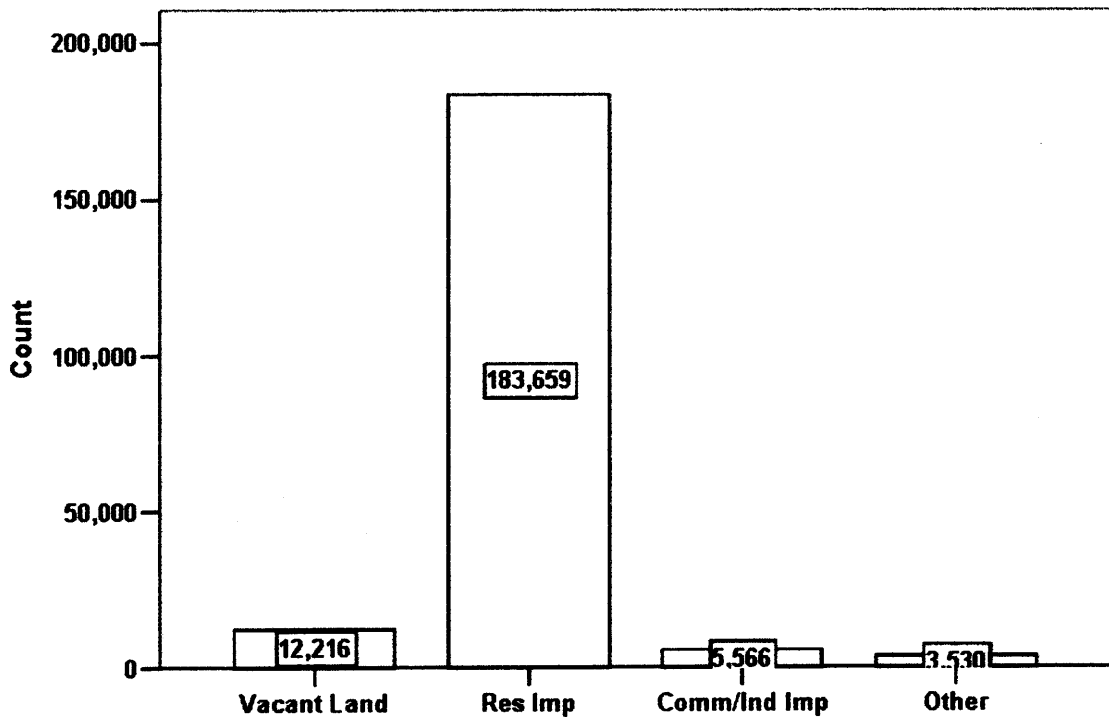
# APPENDICES

## STATISTICAL COMPLIANCE REPORT FOR JEFFERSON COUNTY 2009

### I. OVERVIEW

Jefferson County is an urban county located along Colorado's Front Range. The county has a total of 204,971 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 and 1100) accounted for 77% of all vacant land parcels.

For residential improved properties, single family properties accounted for 91% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3% 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 Jefferson Assessor's Office in May 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. All sales	23,332
2. Qualified sales	18,025
3. Improved sales	17,437
4. Non-duplicate sales	17,098
5. Select residential sales only	16,717
6. Sales between January 1, 2007 and June 30, 2008	12,135

The sales ratio analysis results, broken down by economic area in Jefferson County, were as follows:

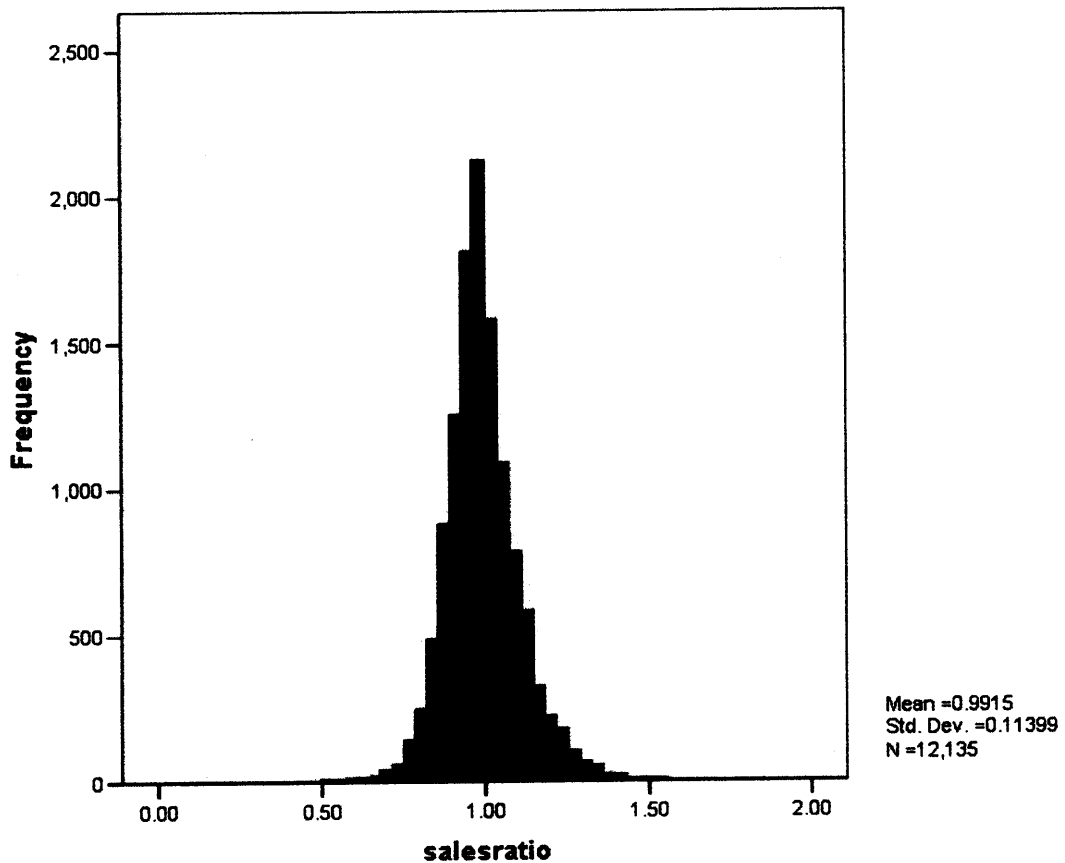
**Case Processing Summary**

		Count	Percent
econarea	1.00	1772	14.6%
	2.00	2338	19.3%
	3.00	2497	20.6%
	4.00	3070	25.3%
	5.00	622	5.1%
	6.00	611	5.0%
	7.00	55	.5%
	8.00	609	5.0%
	9.00	560	4.6%
Overall		12134	100.0%
Excluded		1	
Total		12135	

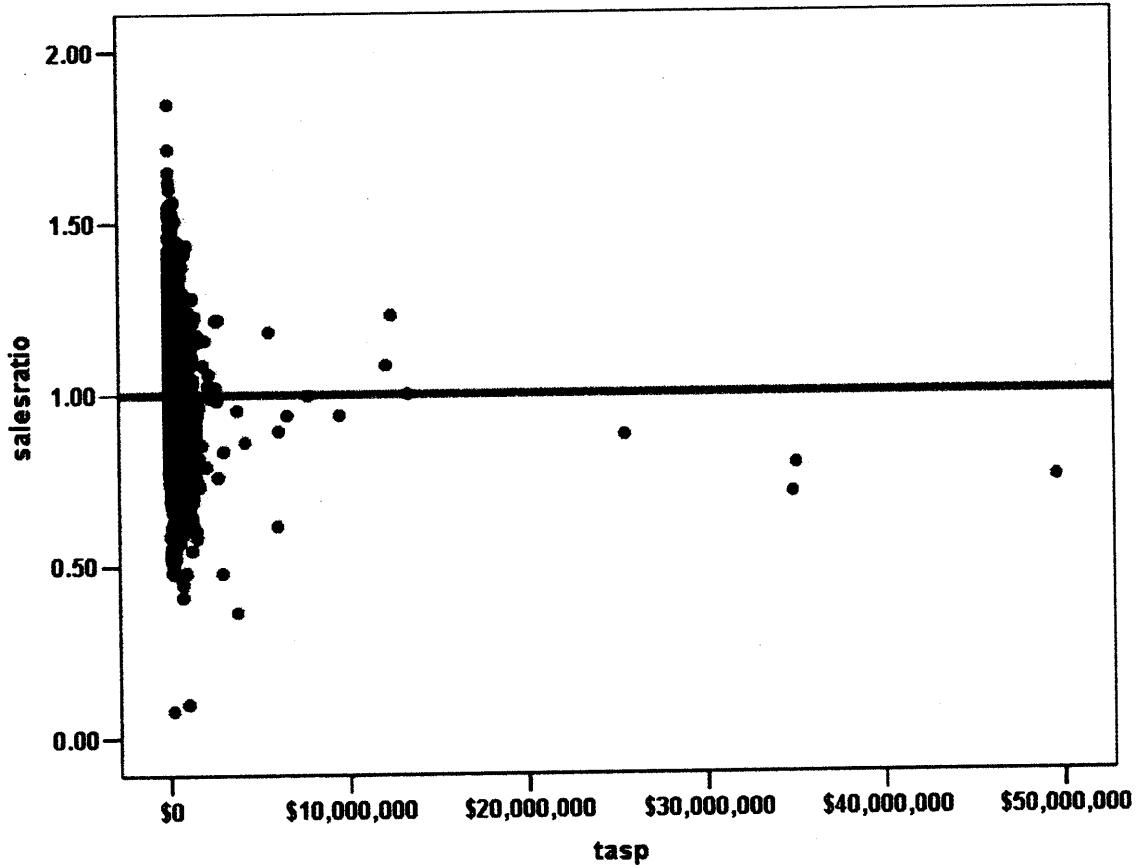
**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.979	1.004	.075
2.00	.979	1.024	.091
3.00	.989	1.034	.089
4.00	.986	1.025	.071
5.00	.977	1.007	.067
6.00	.962	1.025	.092
7.00	.988	1.035	.128
8.00	.982	1.022	.107
9.00	.984	1.010	.111
Overall	.982	1.023	.084

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



### Residential Sale Price by Sales Ratio



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

### Residential Market Trend Analysis

We next analyzed the residential dataset using the 18-month sale period for any residual market trending and broken down by economic area, as follows:

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

econarea	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1.00	1	(Constant)	1.002	.005		215.171	.000
		SalePeriod	-.001	.000	-.062	-2.625	.009
2.00	1	(Constant)	.986	.005		203.197	.000
		SalePeriod	.000	.000	.012	.592	.554
3.00	1	(Constant)	1.023	.005		204.413	.000
		SalePeriod	-.002	.000	-.099	-4.974	.000
4.00	1	(Constant)	1.001	.003		296.979	.000
		SalePeriod	-.001	.000	-.040	-2.242	.025
5.00	1	(Constant)	.979	.007		141.989	.000
		SalePeriod	.001	.001	.030	.755	.451
6.00	1	(Constant)	.968	.009		104.387	.000
		SalePeriod	.001	.001	.029	.717	.474
7.00	1	(Constant)	.979	.044		22.457	.000
		SalePeriod	.003	.004	.106	.775	.442
8.00	1	(Constant)	.964	.013		74.059	.000
		SalePeriod	.002	.001	.052	1.291	.197
9.00	1	(Constant)	.973	.013		73.649	.000
		SalePeriod	.001	.001	.041	.961	.337

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for any of the economic areas. While three economic areas had statistically significant results, the magnitude of each trend was not significant. We therefore concluded 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. The data was analyzed both as a whole and broken down by economic area, as follows:

Group	N	Median	Mean
Unsold	171,446	\$151	\$160
Sold	12,122	\$151	\$161

ECONAREA	Group	N	Median	Mean
1	Unsold	25,579	\$137	\$143
	Sold	1,771	\$137	\$141
2	Unsold	38,138	\$150	\$152
	Sold	2,335	\$149	\$151

3	Unsold	38,962	\$148	\$151
	Sold	2,494	\$146	\$153
4	Unsold	36,766	\$143	\$152
	Sold	3,068	\$145	\$154
5	Unsold	5,123	\$174	\$185
	Sold	621	\$167	\$179
6	Unsold	7,966	\$178	\$184
	Sold	610	\$185	\$191
7	Unsold	1,052	\$197	\$209
	Sold	55	\$189	\$217
8	Unsold	8,665	\$219	\$232
	Sold	608	\$221	\$231
9	Unsold	9,145	\$201	\$210
	Sold	559	\$208	\$212

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

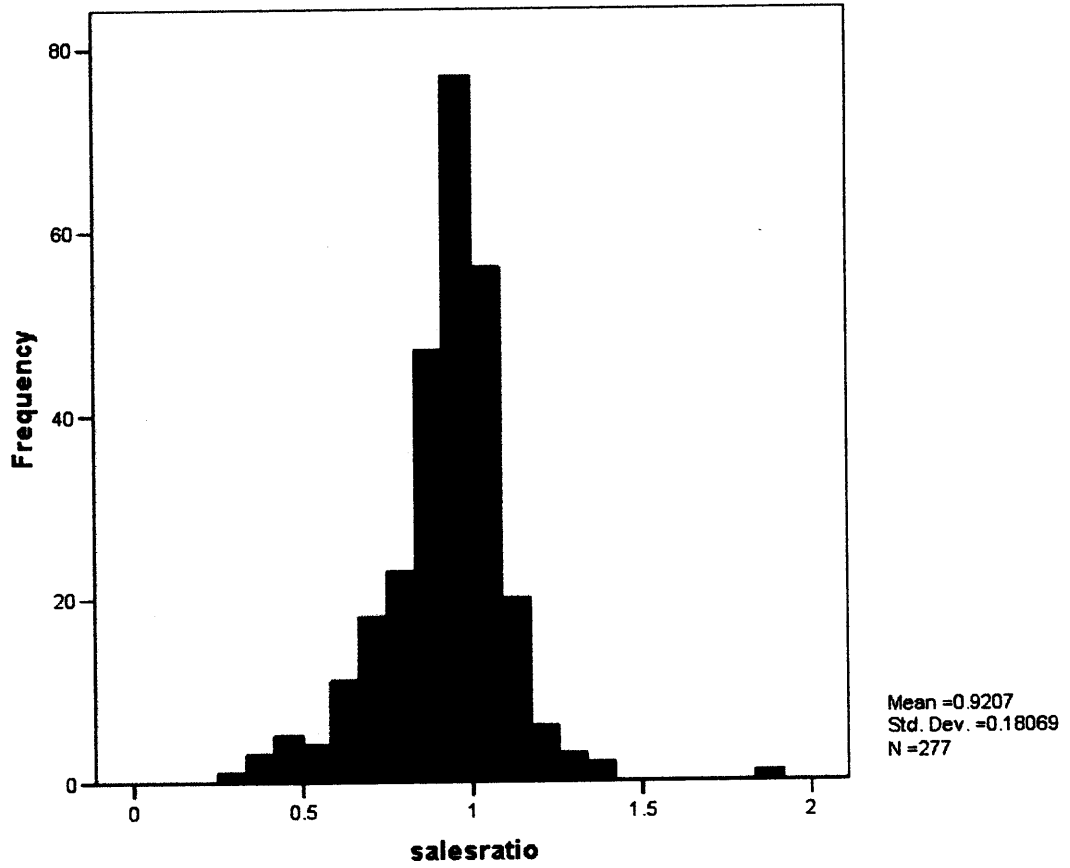
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

1. All sales	23,332
2. Qualified sales	18,025
3. Improved sales	17,437
4. Non-duplicate sales	17,098
5. Select commercial/industrial sales only	367
6. Sales between January 1, 2007 and June 30, 2008	277

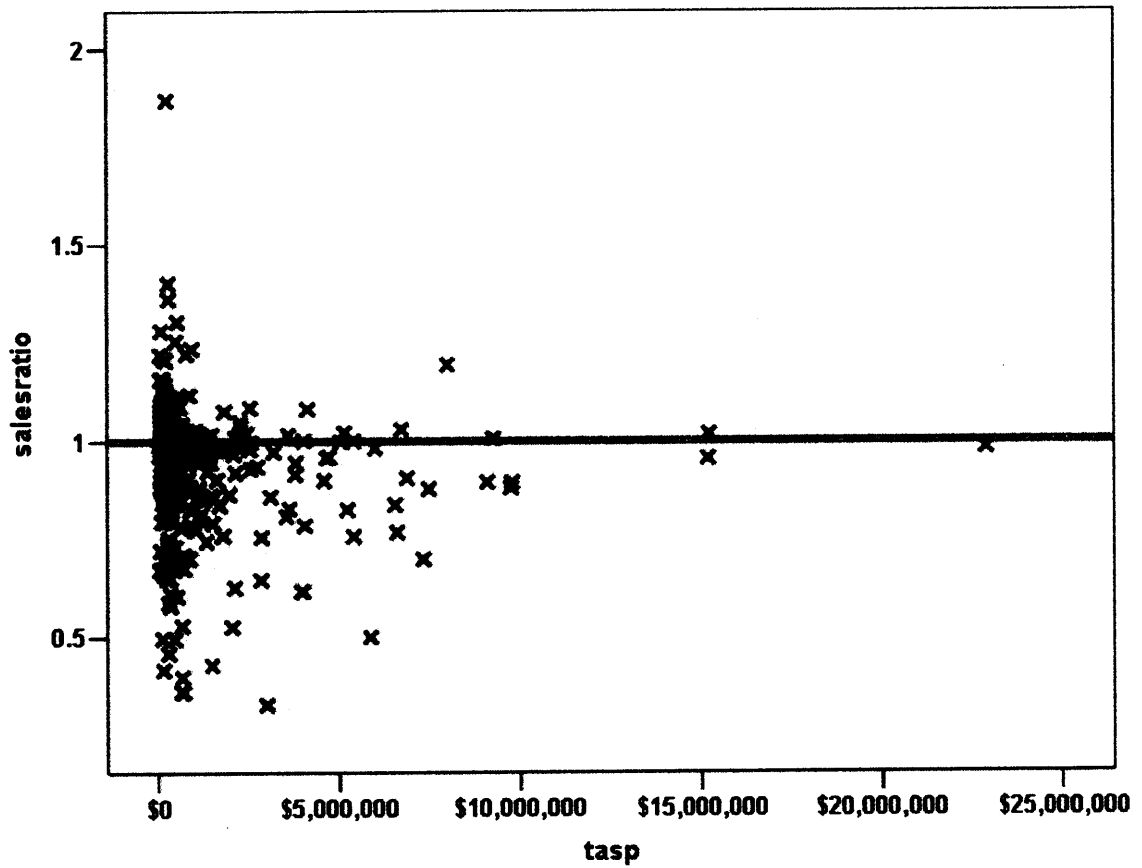
The sales ratio analysis results were as follows:

Median	<b>0.958</b>
Price Related Differential	<b>1.011</b>
Coefficient of Dispersion	<b>.132</b>

The above table indicates that the Jefferson 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/Industrial Market Trend Analysis**

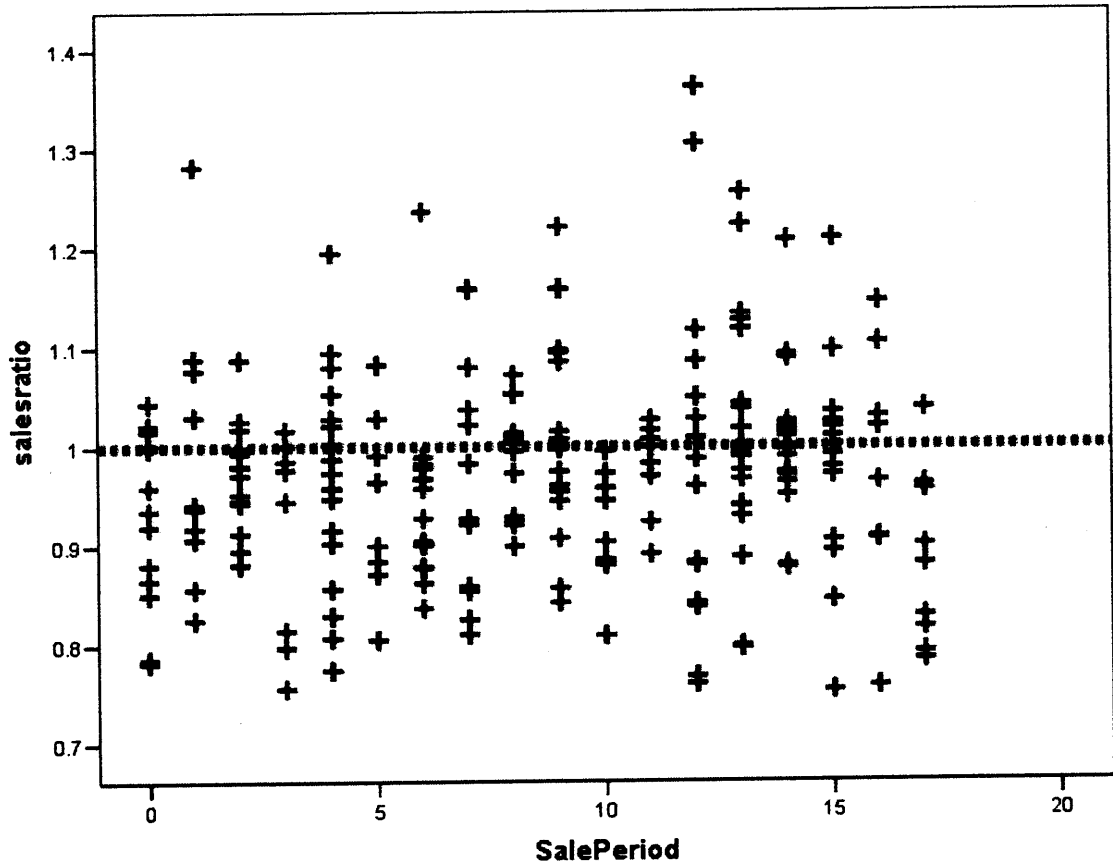
The 277 commercial/industrial sales were next analyzed, examining the sale ratios across the 18 month sale period with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.954	.014		69.480	.000
	SalePeriod	.002	.001	.093	1.421	.157

a. Dependent Variable: salesratio

### Commercial Market Trend Analysis



There was no residual market trending present in the commercial sale ratios. We concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

#### Sold/Unsold Analysis

We compared the median 2009 actual value per square foot between sold and unsold properties to determine if sold and unsold properties were valued consistently, as follows:

Group	N	Median	Mean
Unsold	4,936	\$96	\$120
Sold	271	\$114	\$124

The above results indicated that sold and unsold commercial/industrial properties were valued consistently.

**V. VACANT LAND SALE RESULTS**

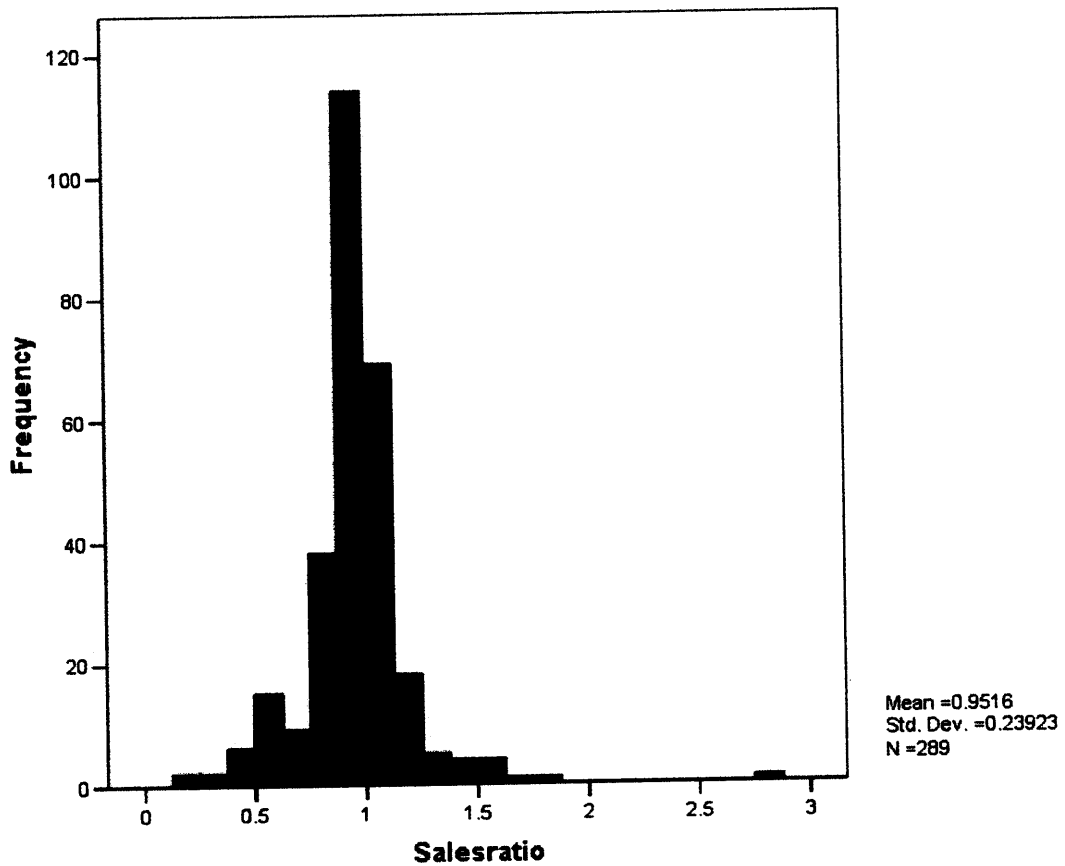
The following steps were taken to analyze the vacant land sales:

1. All sales	10,693
2. Qualified sales	7,933
3. Vacant land sales	434
4. Residential & commercial/ind vacant land sales	427
4. Sales between January 1, 2007 and June 30, 2008	289

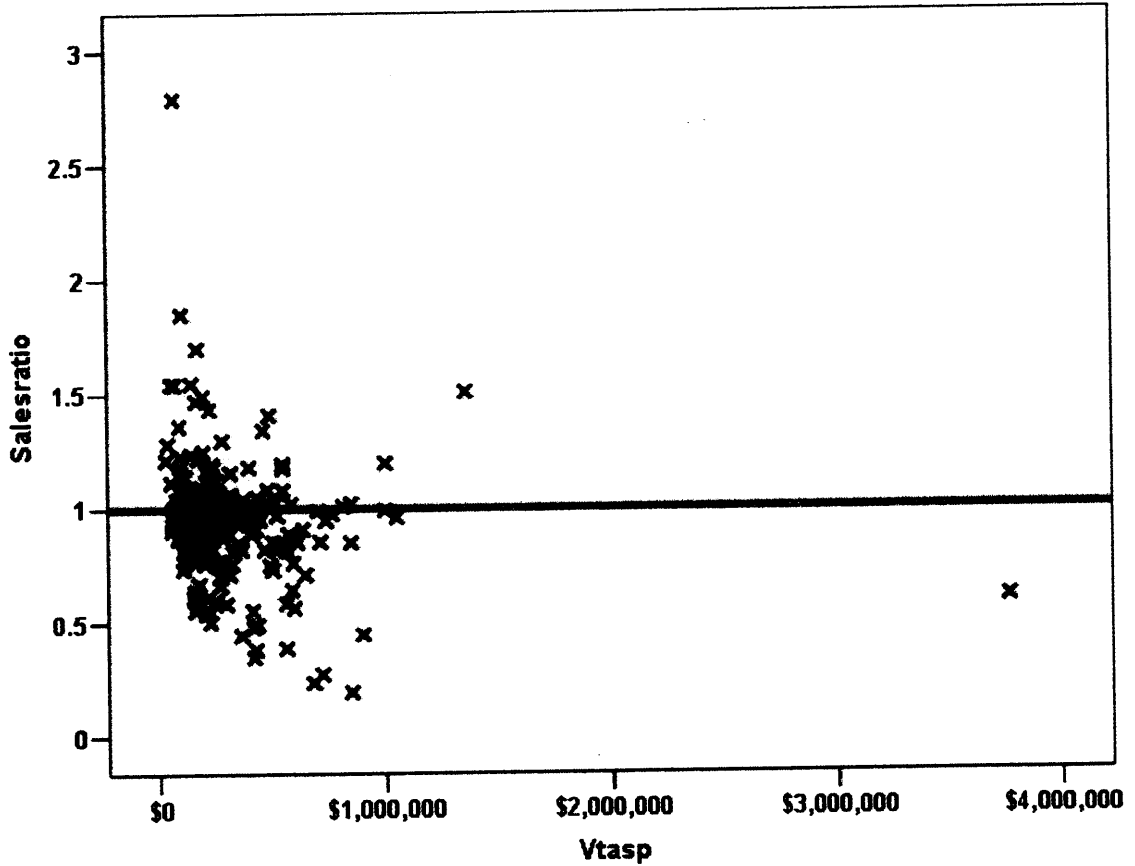
The sales ratio analysis results were as follows:

<b>Median</b>	<b>0.969</b>
<b>Price Related Differential</b>	<b>1.054</b>
<b>Coefficient of Dispersion</b>	<b>.148</b>

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



### Vacant Land Sale Price by Sales Ratio



The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

### Vacant Land Market Trend Analysis

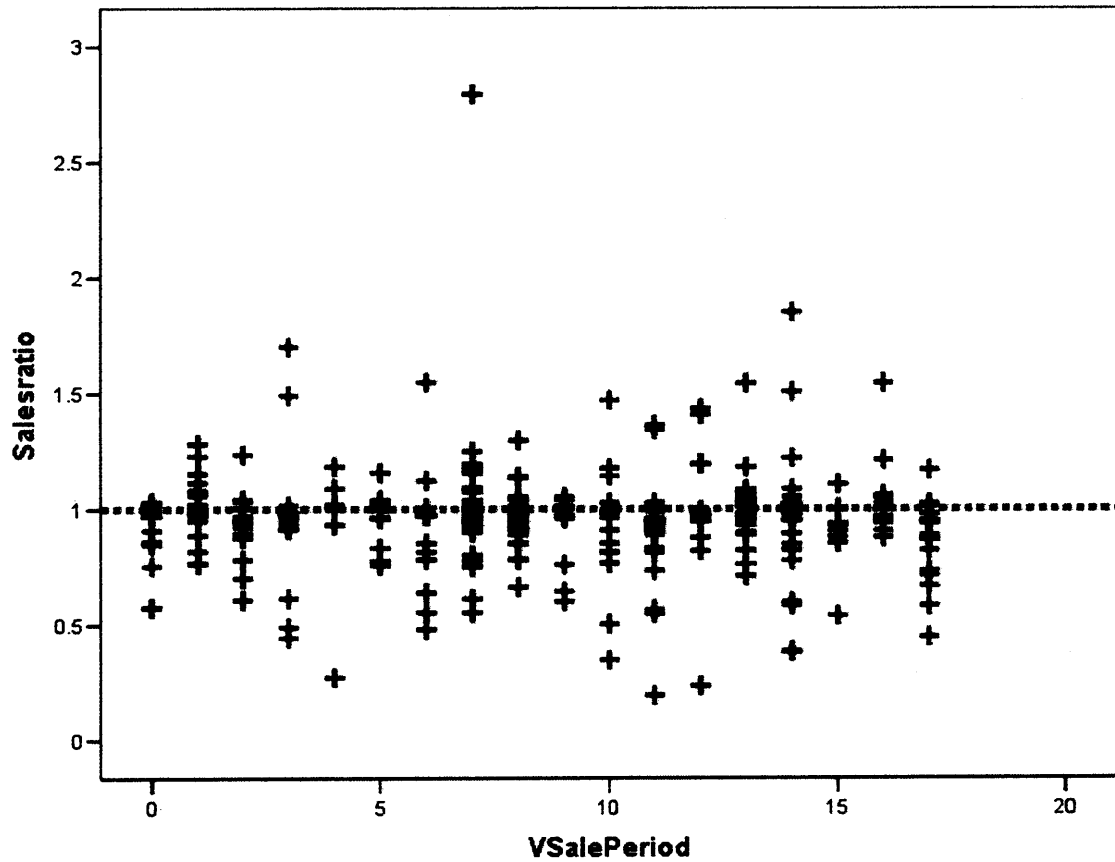
We next analyzed the vacant land dataset using the 18-month sale period, with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.955	.028		33.860	.000
	VSalePeriod	.000	.003	-.008	-.141	.888

a. Dependent Variable: Salesratio

### Vacant Land Sales Market Trend Analysis



The above analysis indicated that no significant market trending was present in the vacant land sale data. We concluded that the assessor has adequately dealt with market trending for vacant land properties.

#### Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in value for 2008 and 2009 between each group. We stratified the vacant land properties by subdivision and found overall consistency. The following results present the comparison results by subdivision for sold and unsold properties for subdivision with at least 4 sales:

Subdivno	Group	No.	Median	Mean
18150.00	Unsold	27	1.00	1.00
	Sold	8	1.00	1.00
186645.00	Unsold	27	1.62	1.62
	Sold	7	1.62	1.74
514600.00	Unsold	127	1.15	1.82
	Sold	4	1.15	1.12
615125.00	Unsold	32	1.32	1.31

	<b>Sold</b>	7	1.32	1.34
636005.00	<b>Unsold</b>	22	.88	.88
	<b>Sold</b>	4	1.02	1.10
654625.00	<b>Unsold</b>	2	.86	.86
	<b>Sold</b>	5	.86	.90
693440.00	<b>Unsold</b>	76	1.24	1.24
	<b>Sold</b>	9	1.24	1.41
<b>TOTAL</b>	<b>Unsold</b>	324	1.24	1.63
	<b>Sold</b>	59	1.24	1.74

Overall, we concluded that the county assessor valued sold and unsold vacant properties consistently.

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

Based on the parameters of the state audit analysis, this county was exempt from this analysis for 2009.

#### **VI. CONCLUSIONS**

Based on this 2009 audit statistical analysis, residential, commercial/industrial, and vacant land properties were found to be in compliance with state guidelines.

**STATISTICAL ABSTRACT**

**Residential**

**Ratio Statistics for currtot / tasp**

Mean		.991
95% Confidence Interval for Mean	Lower Bound	.989
	Upper Bound	.993
Median		.982
95% Confidence Interval for Median	Lower Bound	.981
	Upper Bound	.984
	Actual Coverage	95.0%
Weighted Mean		.970
95% Confidence Interval for Weighted Mean	Lower Bound	.961
	Upper Bound	.979
Price Related Differential		1.023
Coefficient of Dispersion		.084
Coefficient of Variation	Mean Centered	11.5%

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

**Commercial Land**

**Ratio Statistics for currtot / tasp**

Mean		.934
95% Confidence Interval for Mean	Lower Bound	.914
	Upper Bound	.953
Median		.962
95% Confidence Interval for Median	Lower Bound	.945
	Upper Bound	.974
	Actual Coverage	95.3%
Weighted Mean		.891
95% Confidence Interval for Weighted Mean	Lower Bound	.848
	Upper Bound	.934
Price Related Differential		1.048
Coefficient of Dispersion		.133
Coefficient of Variation	Mean Centered	20.2%

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

**Vacant Land**

**Ratio Statistics for currInd / Vtasp**

Mean		.952
95% Confidence Interval for Mean	Lower Bound	.924
	Upper Bound	.979
Median		.969
95% Confidence Interval for Median	Lower Bound	.953
	Upper Bound	.978
	Actual Coverage	95.5%
Weighted Mean		.903
95% Confidence Interval for Weighted Mean	Lower Bound	.855
	Upper Bound	.951
Price Related Differential		1.054
Coefficient of Dispersion		.148
Coefficient of Variation	Mean Centered	25.1%

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.

**Residential Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$25K to \$50K	50	.4%
	\$50K to \$100K	418	3.4%
	\$100K to \$150K	1260	10.4%
	\$150K to \$200K	2213	18.2%
	\$200K to \$300K	4359	35.9%
	\$300K to \$500K	2684	22.1%
	\$500K to \$750K	800	6.6%
	\$750K to \$1,000K	207	1.7%
	Over \$1,000K	144	1.2%
Overall		12135	100.0%
Excluded		0	
Total		12135	

**Ratio Statistics for currtot / tarp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$25K to \$50K	1.173	1.006	.152	19.7%
\$50K to \$100K	1.046	1.005	.116	15.2%
\$100K to \$150K	1.000	1.000	.088	12.0%
\$150K to \$200K	1.005	1.001	.082	10.9%
\$200K to \$300K	.979	1.000	.075	10.2%
\$300K to \$500K	.966	1.000	.080	10.8%
\$500K to \$750K	.965	1.000	.082	11.6%
\$750K to \$1,000K	.960	1.001	.099	14.7%
Over \$1,000K	.927	1.037	.128	17.0%
Overall	.982	1.023	.084	11.6%

**Subclass**

**Case Processing Summary**

	Count	Percent
Preduse 1112	10544	86.9%
1115	96	.8%
1120	41	.3%
1125	38	.3%
1212	1	.0%
1230	1415	11.7%
Overall	12135	100.0%
Excluded	0	
Total	12135	

**Ratio Statistics for currtot / tarp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1112	.982	1.015	.082	11.3%
1115	.981	1.010	.086	13.0%
1120	.976	1.017	.114	15.6%
1125	.983	1.130	.122	15.1%
1212	.588	1.000	.000	.
1230	.987	1.022	.095	13.5%
Overall	.982	1.023	.084	11.6%

Age

**Case Processing Summary**

	Count	Percent
AgeRec 0	3	.0%
Over 100	40	.3%
75 to 100	147	1.2%
50 to 75	1138	9.4%
25 to 50	5377	44.3%
5 to 25	3911	32.2%
5 or Newer	1519	12.5%
Overall	12135	100.0%
Excluded	0	
Total	12135	

**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
0	.098	.799	2.634	545.0%
Over 100	.843	1.020	.158	23.9%
75 to 100	.937	1.045	.184	23.1%
50 to 75	.983	1.024	.106	14.0%
25 to 50	.986	1.020	.086	11.8%
5 to 25	.983	1.022	.074	10.1%
5 or Newer	.976	1.024	.073	9.8%
Overall	.982	1.023	.084	11.6%

Improved Area

**Case Processing Summary**

	Count	Percent
ImpSFRec 0	12	.1%
LE 500 sf	21	.2%
500 to 1,000 sf	1597	13.2%
1,000 to 1,500 sf	4052	33.4%
1,500 to 2,000 sf	3083	25.4%
2,000 to 3,000 sf	2637	21.7%
3,000 sf or Higher	733	6.0%
Overall	12135	100.0%
Excluded	0	
Total	12135	

**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
0	.867	.926	.274	42.2%
LE 500 sf	.988	1.041	.122	18.1%
500 to 1,000 sf	.978	1.023	.105	15.0%
1,000 to 1,500 sf	.982	1.012	.082	11.1%
1,500 to 2,000 sf	.985	1.011	.078	10.4%
2,000 to 3,000 sf	.983	1.012	.080	10.9%
3,000 sf or Higher	.980	1.021	.090	12.9%
Overall	.982	1.023	.084	11.6%

**Quality**

**Case Processing Summary**

	Count	Percent
qual .00	5	.0%
1.00	52	.4%
2.00	1716	14.1%
3.00	7745	63.8%
4.00	2344	19.3%
5.00	262	2.2%
6.00	8	.1%
Overall	12132	100.0%
Excluded	3	
Total	12135	

**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
.00	1.004	1.020	.210	31.6%
1.00	.964	1.024	.156	19.5%
2.00	.982	1.015	.094	13.2%
3.00	.983	1.025	.082	11.3%
4.00	.982	1.013	.078	10.6%
5.00	.985	1.030	.101	14.0%
6.00	1.009	1.078	.156	26.8%
Overall	.982	1.022	.084	11.6%

**Commercial Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$50K to \$100K	27	7.4%
	\$100K to \$150K	30	8.2%
	\$150K to \$200K	22	6.0%
	\$200K to \$300K	46	12.5%
	\$300K to \$500K	53	14.4%
	\$500K to \$750K	40	10.9%
	\$750K to \$1,000K	29	7.9%
	Over \$1,000K	120	32.7%
Overall		367	100.0%
Excluded		0	
Total		367	

**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$50K to \$100K	.992	.999	.101	13.7%
\$100K to \$150K	.982	1.004	.112	16.6%
\$150K to \$200K	.976	.993	.140	19.8%
\$200K to \$300K	.971	.998	.160	24.6%
\$300K to \$500K	.928	.995	.138	19.4%
\$500K to \$750K	.952	1.010	.161	24.9%
\$750K to \$1,000K	.992	.997	.097	14.2%
Over \$1,000K	.946	1.024	.127	19.2%
Overall	.962	1.048	.133	19.9%

Subclass

**Case Processing Summary**

		Count	Percent
Preduse	2112	52	14.2%
	2115	9	2.5%
	2120	79	21.5%
	2125	3	.8%
	2130	51	13.9%
	2135	45	12.3%
	2230	3	.8%
	2235	2	.5%
	2245	26	7.1%
	3115	3	.8%
	3230	94	25.6%
Overall		367	100.0%
Excluded		0	
Total		367	

**Ratio Statistics for currtot / tasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
2112	.927	.991	.108	15.4%
2115	.777	1.011	.304	41.1%
2120	.965	.959	.115	19.3%
2125	1.195	1.043	.179	27.7%
2130	.902	1.097	.161	23.1%
2135	.956	1.041	.103	13.5%
2230	.661	.974	.103	20.4%
2235	.906	1.002	.045	6.4%
2245	.971	.993	.101	14.1%
3115	.878	1.042	.237	36.3%
3230	1.001	.999	.121	18.7%
Overall	.962	1.048	.133	19.9%

**Vacant Land Median Ratio Stratification**

**Case Processing Summary**

		Count	Percent
VPreduce	100	124	42.9%
	200	11	3.8%
	300	8	2.8%
	510	2	.7%
	520	5	1.7%
	530	5	1.7%
	540	4	1.4%
	550	9	3.1%
	560	1	.3%
	600	4	1.4%
	1112	95	32.9%
	1125	1	.3%
	2112	13	4.5%
	2120	2	.7%
	2130	3	1.0%
	2135	2	.7%
Overall		289	100.0%
Excluded		0	
Total		289	

**Ratio Statistics for currInd / Vtasp**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
100	.972	1.021	.107	16.9%
200	.955	1.339	.313	64.1%
300	.784	1.015	.105	17.1%
510	.770	1.000	.012	1.7%
520	.880	1.125	.337	58.6%
530	1.020	.998	.062	10.5%
540	1.010	1.002	.037	4.4%
550	.933	1.060	.168	20.6%
560	1.018	1.000	.000	.
600	1.096	.995	.088	10.7%
1112	.978	.990	.114	18.6%
1125	1.507	1.000	.000	.
2112	.481	1.056	.356	58.5%
2120	1.198	1.145	.198	27.9%
2130	.855	1.075	.457	68.7%
2135	.811	1.001	.122	17.3%
Overall	.969	1.054	.148	24.8%