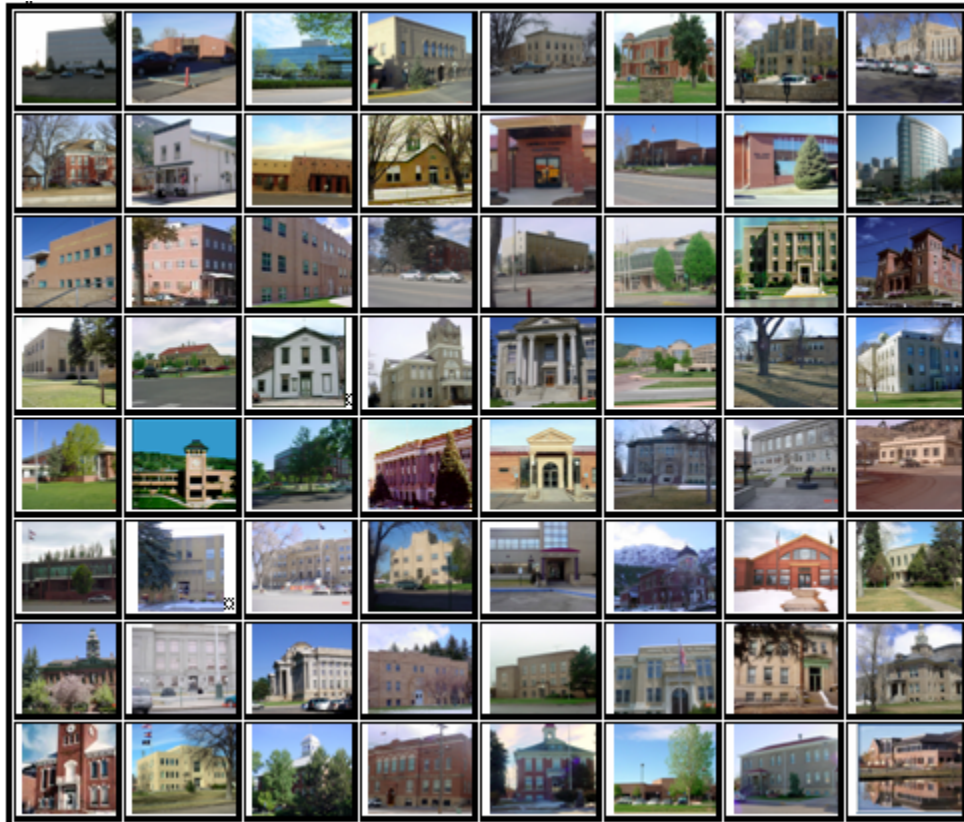




2009  
LARIMER COUNTY  
PROPERTY ASSESSMENT  
STUDY

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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

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# INTRODUCTION

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## Colorado

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

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

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

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

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

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

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

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

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

# REGIONAL/HISTORICAL SKETCH OF LARIMER COUNTY

## Regional Information

Larimer 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

Larimer County has a population of approximately 276,253 people with 96.7 people per square mile, according to the U.S. Census Bureau's 2006 estimated population data.

Larimer County was created in 1861 as one of the seventeen original counties in the Colorado Territory; however, its western boundary was disputed. Controversy existed as to whether Larimer County ended at the Medicine Bow Range or at the Continental Divide thirty miles further west. An 1886 Colorado Supreme Court decision set the boundary at the Continental Divide, although the land between the Medicine Bow Range and the divide was made part of Jackson County in 1909.

Unlike that of much of Colorado, which was founded on the mining of gold and silver, the settlement of Larimer County was based almost entirely on agriculture, an industry that few thought possible in the region during the initial days of the Colorado Gold Rush. The mining boom almost entirely passed the county by. It would take the introduction of irrigation to the region in the 1860s to bring the first widespread settlement to the area.

In 1862, the United States Army established an outpost near Laporte that was designated as Camp Collins. A devastating flood in June 1864 wiped out the outpost, forcing the Army to seek a better location. At the urging of Joseph Mason, who had settled along the Poudre in 1860, the Army relocated its post downstream adjacent to Mason's land along the Overland stage route. The site of the new post became the nucleus of the town of Fort Collins, incorporated in 1873 after the withdrawal of the Army. By that time, Mason and others had convinced the legislature of the Colorado Territorial Legislature to designate the new town as the county seat. In 1870, the legislature designated Fort Collins as the location of the state agricultural college (later Colorado State University).

Cities and towns located in Larimer County, Colorado include Berthoud, Estes Park, Fort Collins, Loveland, Timnath, Wellington, Windsor, Bellvue, Buckeye, Champion, Cherokee Park, Drake, Glendevey, Glen Haven, LaPorte, Livermore, Kinikinik, Manhattan, Masonville, Pinewood Springs, Pingree Park, Poudre Park, Feather Lakes, Rustic, Teds Place, Virginia Dale and Waverly. (*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 Larimer County are:

<b>Larimer 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	143	0.998	1.002	3.8	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	8,539	0.997	1.011	6.8	Compliant
Vacant Land	549	1.000	1.058	17	Compliant

**Ratio Statistics for CURRTOT / TASP**

<b>Group</b>	<b>Median</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>
EA1	.997	1.011	.064
EA2	.994	1.010	.073
EA3	.999	1.013	.078
EA4	1.000	1.024	.078
Overall	.997	1.011	.068

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

Larimer 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**

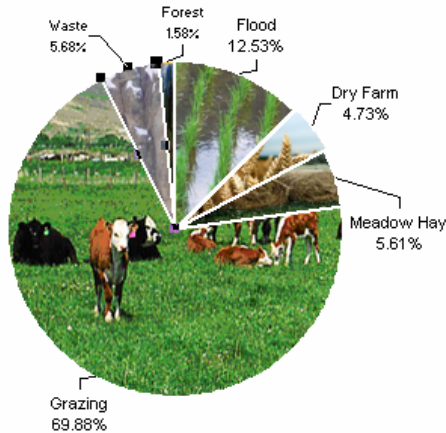
After applying the above described methodologies, it is concluded that Larimer County is reasonably treating its sold and unsold properties in the same manner.

### **Recommendations**

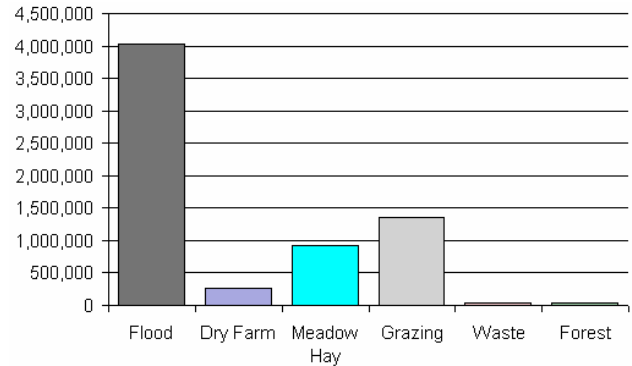
None

# 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>Larimer 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	52,976	75.90	4,021,026	4,283,479	0.94
4127	Dry Farm	20,000	12.86	257,114	268,897	0.96
4137	Meadow Hay	23,717	38.73	918,605	918,605	1.00
4147	Grazing	295,573	4.56	1,348,041	1,348,041	1.00
4177	Forest	6,671	4.98	33,254	33,276	1.00
4167	Waste	24,005	1.62	38,770	38,770	1.00
<b>Total/Avg</b>		<b>422,942</b>	<b>15.64</b>	<b>6,616,811</b>	<b>6,924,344</b>	<b>0.96</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**

Larimer 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 Larimer 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 49 sales listed as unqualified. All of the sales in the unqualified sales sample had reasons that were clear and supportable.

### **Conclusions**

Larimer 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**

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

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## Producing Oil and Gas Procedures

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### Methodology

Assessors Reference Library (ARL) Volume 3, Chapter 6: Valuation of Natural Resources

### STATUTORY REFERENCES

Section § 39-1-103, C.R.S., specifies that producing oil or gas leaseholds and lands are valued according to article 7 of title 39, C.R.S.

### Actual value determined - when.

(2) The valuation for assessment of leaseholds and lands producing oil or gas shall be determined as provided in article 7 of this title.

### § 39-1-103, C.R.S.

Article 7 covers the listing, valuation, and assessment of producing oil and gas leaseholds and lands.

### Valuation:

#### Valuation for assessment.

(1) Except as provided in subsection (2) of this section, on the basis of the information contained in such statement, the assessor shall value such oil and gas leaseholds and lands for assessment, as real property, at an amount equal to eighty-seven and one-half percent of:

(a) The selling price of the oil or gas sold there from during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year;

(b) The selling price of oil or gas sold in the same field area for oil or gas transported from the premises which is not sold during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year.

### § 39-7-102, C.R.S.

### Conclusions

The county applied approved appraisal procedures in the valuation of oil and gas.

### Recommendations:

None

## VACANT LAND

### **Subdivision Discounting**

Subdivisions were reviewed in 2009 in Larimer 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**

Larimer County has implemented proper procedures to adequately estimate absorption periods, discount rates, and lot values for qualifying subdivisions.

### **Recommendations**

None

# POSSESSORY INTEREST PROPERTIES

## Possessory Interest

Possessory interest property discovery and valuation is described in the Assessor's Reference Library (ARL) Volume 3 section 7 in accordance with the requirements of Chapter 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Chapter 7: A private property interest in government-owned property or the right to the occupancy and use of any benefit in government-owned property that has been granted under lease, permit, license, concession, contract, or other agreement.

Larimer County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural and

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

Larimer 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

Larimer 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.

Larimer 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

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.

Larimer 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:

- Accounts with obvious discrepancies
- New businesses filing for the first time
- Incomplete or inconsistent declarations
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- Accounts protested with substantial disagreement



Larimer 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**

Larimer 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*

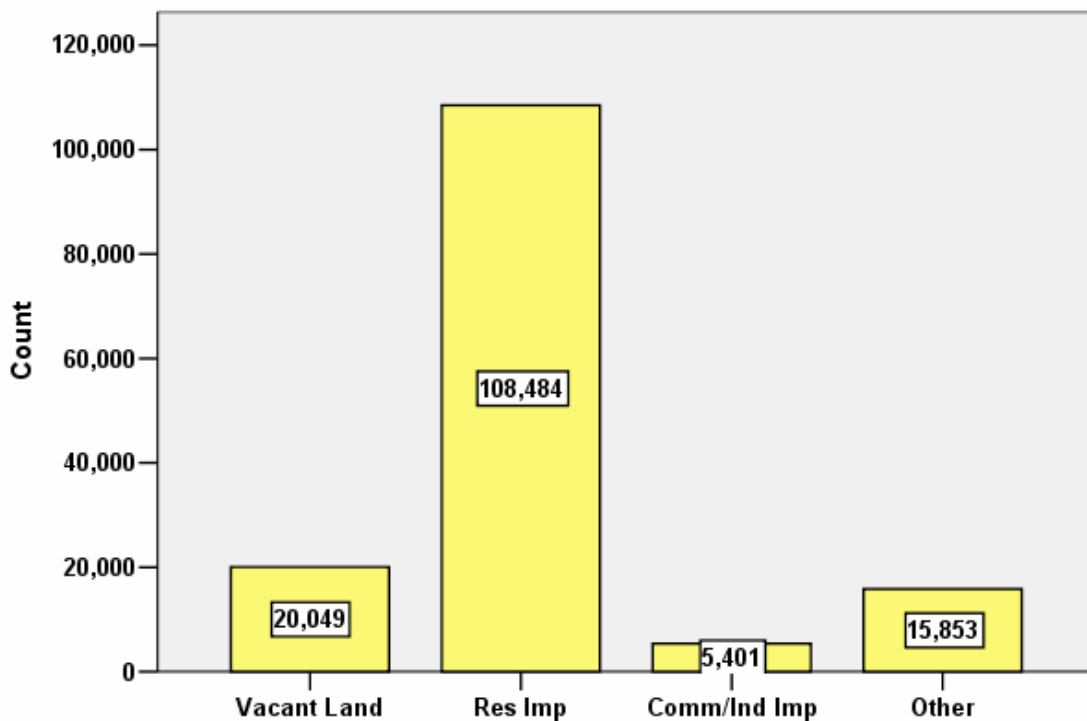
# APPENDICES

## STATISTICAL COMPLIANCE RESULTS FOR LARIMER COUNTY 2009

### I. OVERVIEW

Larimer County is a northern county located along Colorado's Front Range urban corridor. The county has a total of 149,787 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 75% of all vacant land parcels.

For residential improved properties, single family properties accounted for 83% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties 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 Larimer Assessor's Office on May 1, 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	64,035
2. Qualified sales	33,698
3. Improved sales	31,222
3. Select residential sales only	30,953
4. Sales between January 1, 2007 and June 30, 2008	8,890
5. Exclude 1235 sales	8,539

The sales ratio analysis was analyzed as follows:

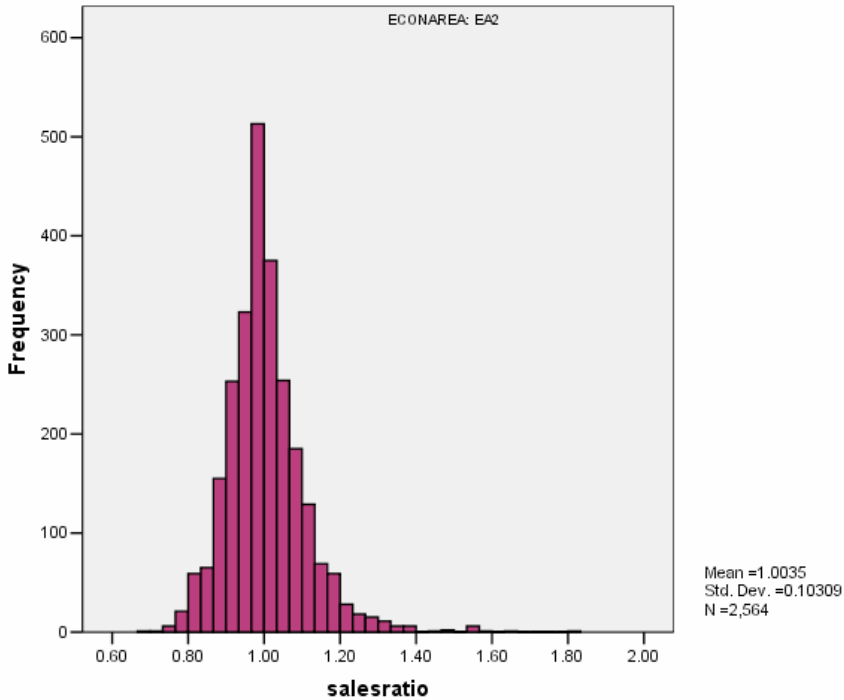
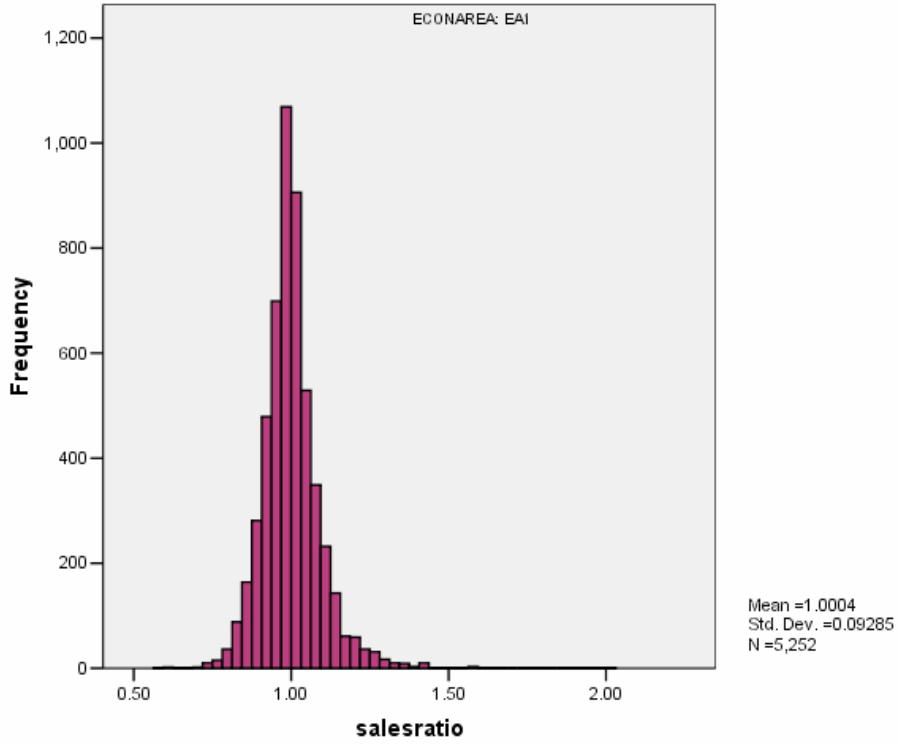
### Case Processing Summary

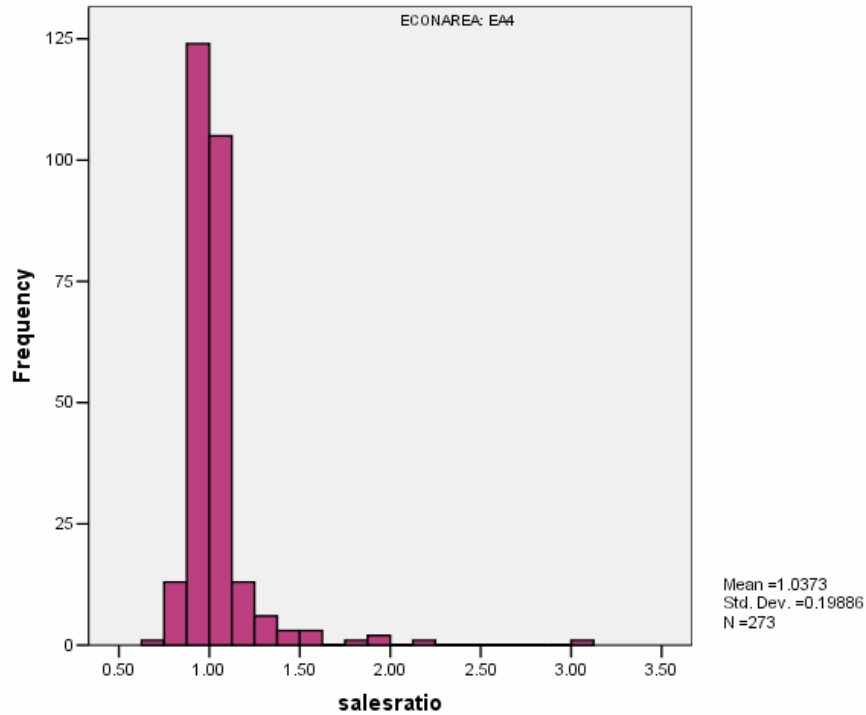
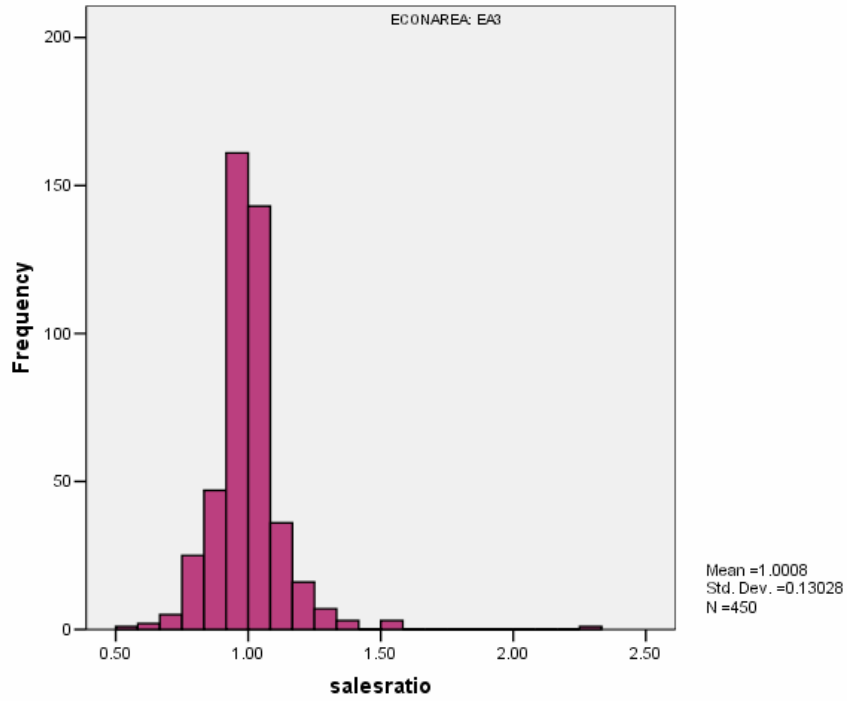
	Count	Percent
ECONAREA EA1	5252	61.5%
EA2	2564	30.0%
EA3	450	5.3%
EA4	273	3.2%
Overall	8539	100.0%
Excluded	0	
Total	8539	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
EA1	.997	1.011	.064
EA2	.994	1.010	.073
EA3	.999	1.013	.078
EA4	1.000	1.024	.078
Overall	.997	1.011	.068

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:





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		
EA1	1	(Constant)	1.000	.002		404.193	.000
		SalePeriod	1.56E-005	.000	.001	.063	.950
EA2	1	(Constant)	1.010	.004		252.929	.000
		SalePeriod	-.001	.000	-.038	-1.921	.055
EA3	1	(Constant)	1.003	.013		79.334	.000
		SalePeriod	.000	.001	-.009	-.201	.841
EA4	1	(Constant)	1.053	.025		42.818	.000
		SalePeriod	-.002	.003	-.043	-.715	.475

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for any of the economic areas; in Economic Area 2, where a marginally statistical significant trend was present, the magnitude of that trend (at 0.1% per month) 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 broken down by economic area, as follows:

ECONAREA	Group	N	Median	Mean
EA1	Unsold	49,141	\$140	\$147
	Sold	5,091	\$140	\$147
EA2	Unsold	29,451	\$136	\$141
	Sold	2,513	\$140	\$147
EA3	Unsold	4,749	\$213	\$213
	Sold	350	\$215	\$215
EA4	Unsold	6,362	\$159	\$160
	Sold	261	\$173	\$177
Total	Unsold	89,955	\$141	\$149
	Sold	8,215	\$142	\$151

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

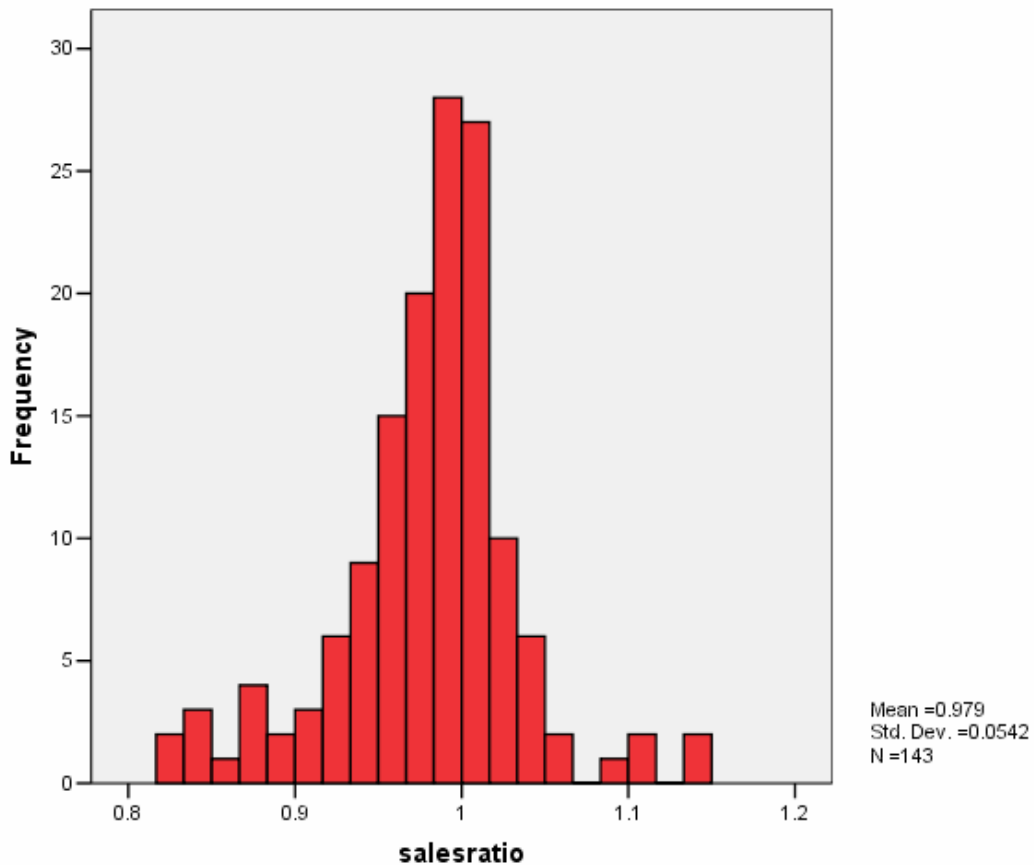
#### IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

1. All sales	64,035
2. Qualified sales	33,698
3. Improved sales	31,222
3. Select commercial/industrial sales only	230
4. Sales between January 1, 2007 and June 30, 2008	143

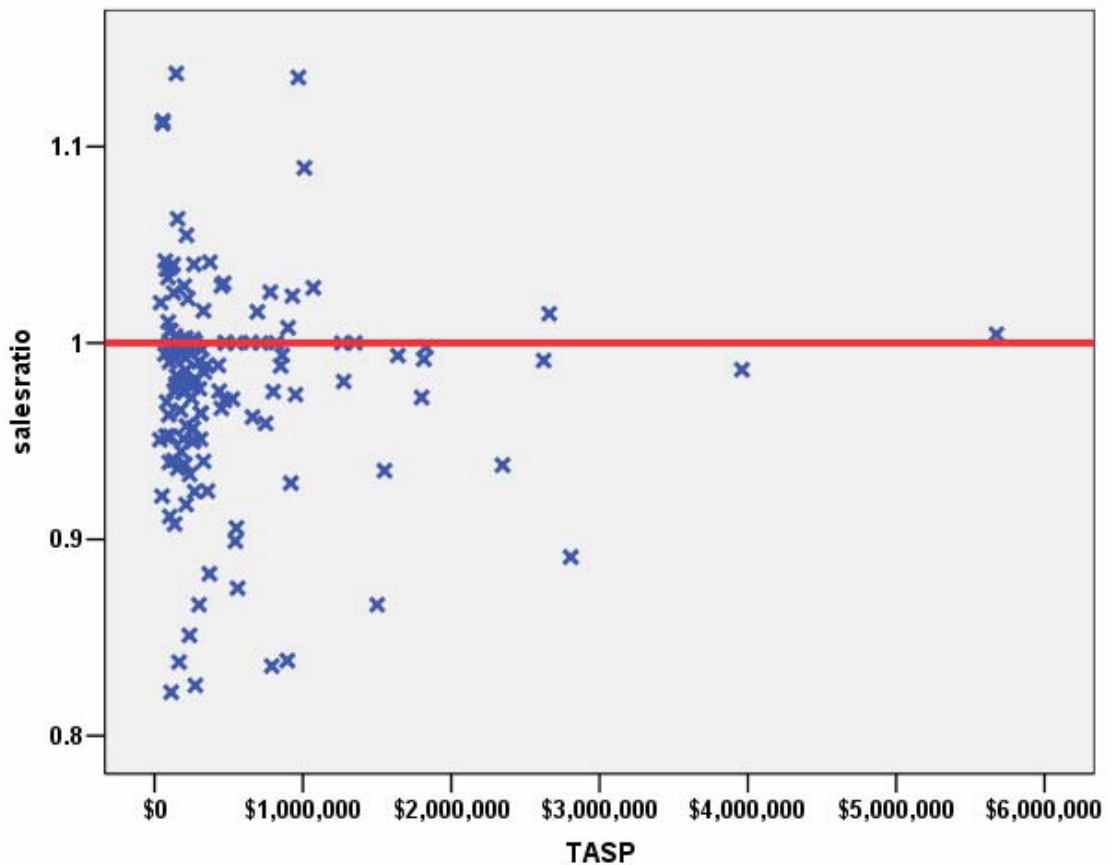
The sales ratio analysis was analyzed as follows:

Median	<b>0.998</b>
Price Related Differential	<b>1.002</b>
Coefficient of Dispersion	<b>.038</b>

The above table indicates that the Larimer County commercial/industrial land 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

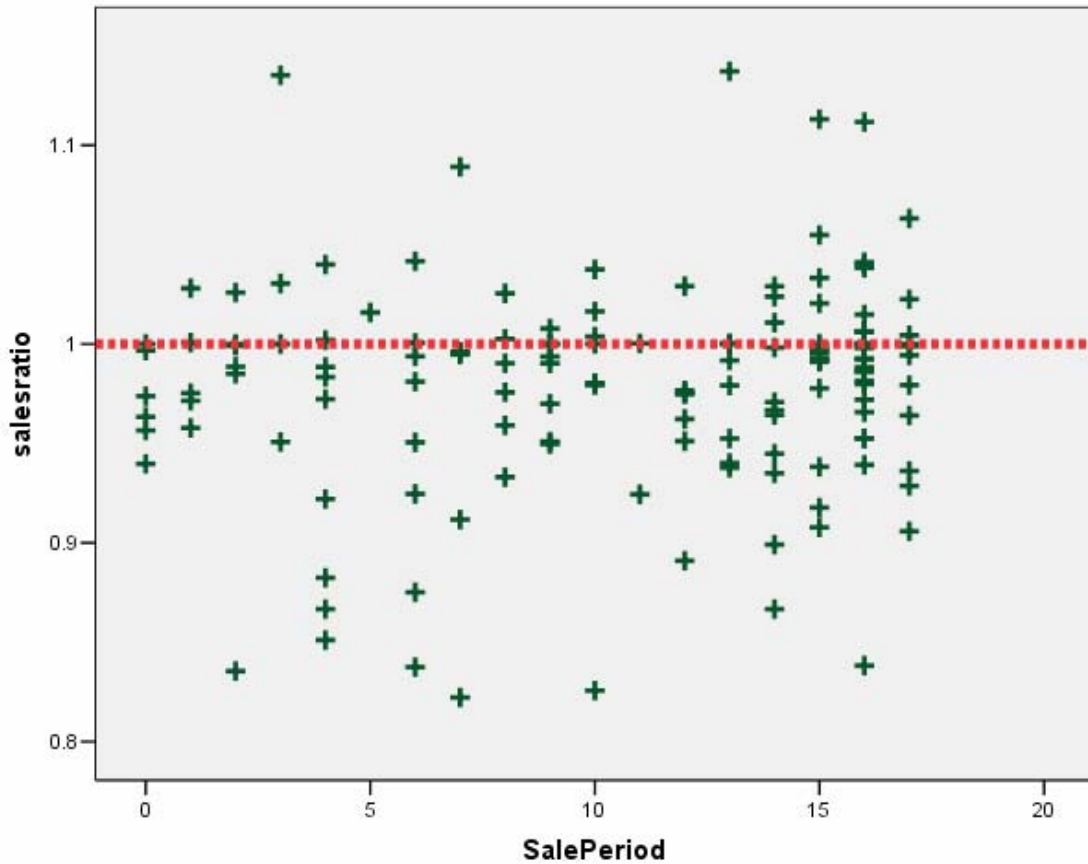
The assessor did apply market trend adjustments to the commercial/industrial dataset. The 143 commercial/industrial sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.968	.010		97.680	.000
	SalePeriod	.001	.001	.105	1.257	.211

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 change in actual value between 2008 and 2009 for commercial land properties to determine if sold and unsold properties were valued consistently. The analysis was stratified by subclass, as follows:

ABSTRIMP	Group	No.	Median	Mean
2212	Unsold	737	\$91	\$100
	Sold	13	\$104	\$137
2215	Unsold	69	\$108	\$105
	Sold	3	\$60	\$73
2220	Unsold	574	\$128	\$122
	Sold	16	\$136	\$134

2230	<b>Unsold</b>	954	\$111	\$120
	<b>Sold</b>	10	\$159	\$164
2235	<b>Unsold</b>	555	\$53	\$53
	<b>Sold</b>	14	\$75	\$72
2245	<b>Unsold</b>	1692	\$96	\$108
	<b>Sold</b>	71	\$96	\$108
3215	<b>Unsold</b>	140	\$46	\$50
	<b>Sold</b>	4	\$81	\$81
Total	<b>Unsold</b>	4721	\$90	\$103
	<b>Sold</b>	131	\$98	\$113

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

### V. VACANT LAND SALE RESULTS

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

1. All sales	64,035
2. Qualified sales	33,698
3. Vacant land sales	2,550
4. Residential vacant land sales	2,502
4. Sales between January 1, 2007 and June 30, 2008	549

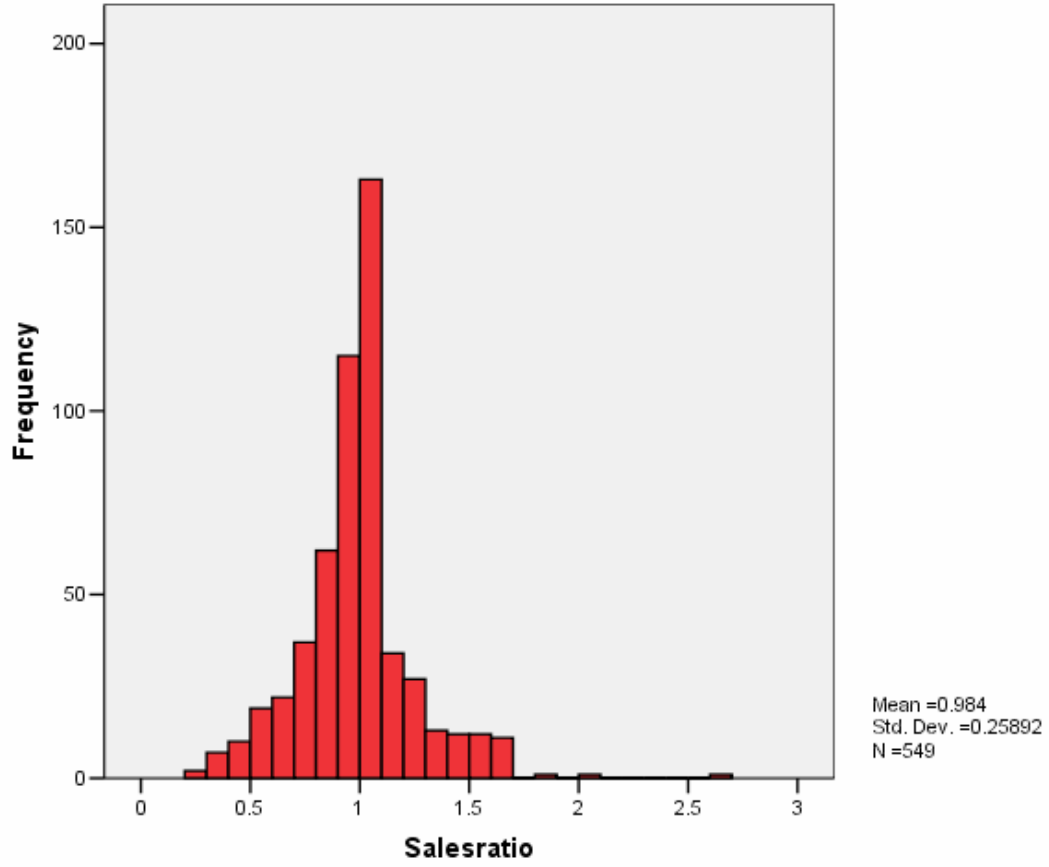
The sales ratio analysis was analyzed as follows:

#### Ratio Statistics for currInd / Vtasp

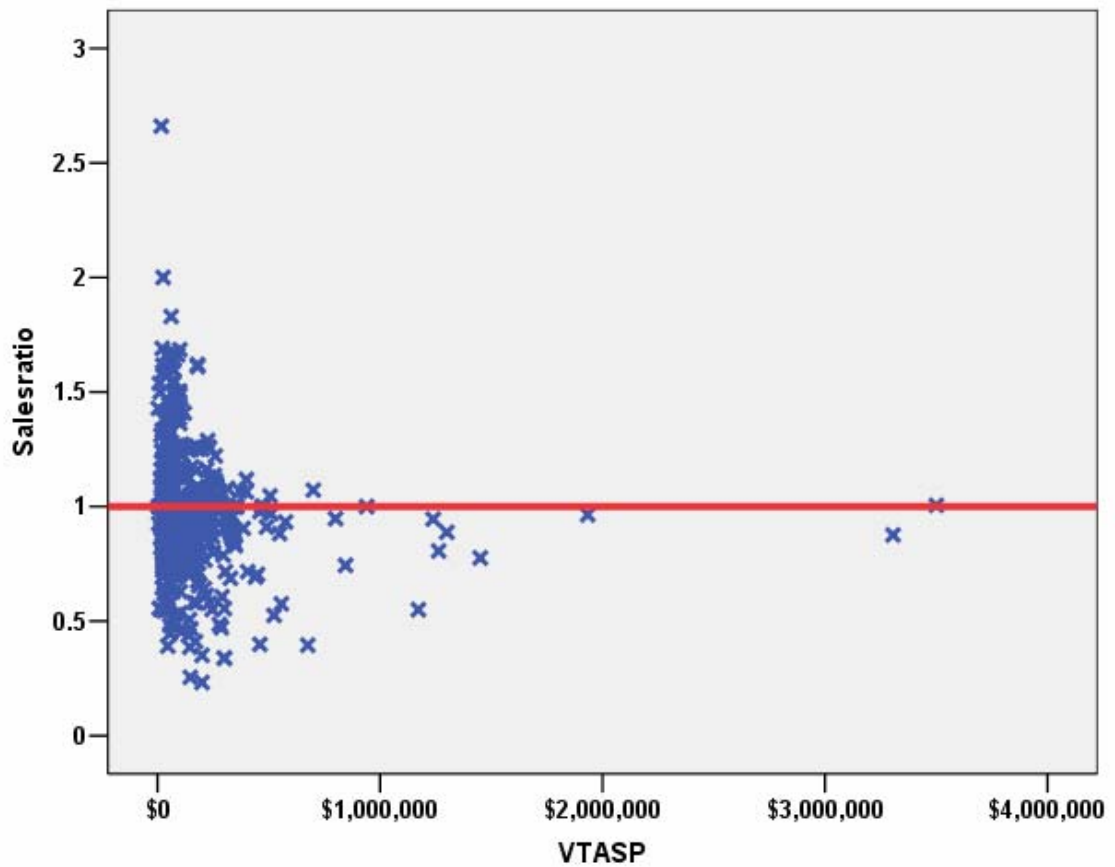
<b>Median</b>	<b>1.000</b>
<b>Price Related Differential</b>	<b>1.058</b>
<b>Coefficient of Dispersion</b>	<b>.170</b>

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, while the above scatter plot indicated that there was no price related differential issues. No sales were trimmed.

### Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 18-month sale period and stratified by economic area, with the following results:

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

ECONAREA	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
EA1	1	(Constant)	.959	.024		40.196	.000
		VSalePeriod	.003	.002	.099	1.126	.262
EA2	1	(Constant)	.988	.025		38.966	.000
		VSalePeriod	.000	.002	-.008	-.088	.930
EA3	1	(Constant)	.944	.038		25.071	.000
		VSalePeriod	.002	.004	.098	.584	.563
EA4	1	(Constant)	.980	.022		43.689	.000
		VSalePeriod	.000	.002	-.014	-.174	.862

a. Dependent Variable: Salesratio

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 8 sales:

**Report**

DIFF

SUBDIVNO	sold	N	Median	Mean
754	0	14	1.0385	1.0385
	1	11	1.0385	1.0385
	Total	25	1.0385	1.0385
5006	0	29	.9667	.9848
	1	15	.9667	.9667
	Total	44	.9667	.9786
5510	0	422	1.0000	1.0759
	1	17	1.3795	1.1936
	Total	439	1.0000	1.0805
5513	0	243	.9947	.9506
	1	8	.9901	.9947
	Total	251	.9947	.9520
5803	0	102	1.7089	1.7089
	1	15	1.7089	1.7089
	Total	117	1.7089	1.7089
8180	0	43	1.1887	1.1887
	1	8	1.1887	1.1887
	Total	51	1.1887	1.1887
272120	0	128	1.0000	1.0000
	1	17	1.0000	1.0000
	Total	145	1.0000	1.0000
327120	0	116	.9500	.9846
	1	11	.9500	.9973
	Total	127	.9500	.9857
5006002000	0	123	1.0000	.9978
	1	8	.9667	.9667
	Total	131	1.0000	.9959
Total	0	1220	1.0000	1.0807
	1	110	1.0000	1.1365
	Total	1330	1.0000	1.0854

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

**V. AGRICULTURAL IMPROVEMENTS ANALYSIS**

The final verification concerned the assigned actual values for agricultural residential improvements. We compared the median improved value per square foot rate for this subclass and compared it to the median improved value per square foot for residential single family improvements in Larimer County.

The following indicates that both groups were valued in essentially the same manner:

**Descriptives**

ABSTRIMP				Statistic	Std. Error			
ImpValSF	1212.00	Mean		\$1,017.85	\$61.578			
		95% Confidence Interval for Mean	Lower Bound	\$897.16				
			Upper Bound	\$1,138.54				
		5% Trimmed Mean		\$114.87				
		Median		\$111.31				
		Variance		341854065.750				
		Std. Deviation		\$18,489.296				
		Minimum		\$0				
		Maximum		\$1650000				
		Range		\$1,650,000				
		Interquartile Range		\$40				
		Skewness		34.144		.008		
		Kurtosis		1696.609		.016		
		4277.00		Mean		\$3,651.47	*****	
				95% Confidence Interval for Mean		Lower Bound		\$1,203.02
Upper Bound	\$6,099.91							
5% Trimmed Mean				\$109.62				
Median				\$105.14				
Variance				1152608920.902				
Std. Deviation				\$33,950.095				
Minimum				\$1				
Maximum				\$627,561				
Range				\$627,560				
Interquartile Range				\$42				
Skewness				12.991	.090			
Kurtosis				194.980	.179			

**VI. CONCLUSIONS**

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

## STATISTICAL ABSTRACT

### Residential

#### Ratio Statistics for CURRTOT / TASP

Mean		1.003
95% Confidence Interval for Mean	Lower Bound	1.000
	Upper Bound	1.005
Median		.997
95% Confidence Interval for Median	Lower Bound	.996
	Upper Bound	.998
	Actual Coverage	95.1%
Weighted Mean		.992
95% Confidence Interval for Weighted Mean	Lower Bound	.989
	Upper Bound	.994
Price Related Differential		1.011
Coefficient of Dispersion		.068
Coefficient of Variation	Mean Centered	10.3%

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.

### Commercial Land

#### Ratio Statistics for CURRTOT / TASP

Mean		.979
95% Confidence Interval for Mean	Lower Bound	.970
	Upper Bound	.988
Median		.989
95% Confidence Interval for Median	Lower Bound	.979
	Upper Bound	.995
	Actual Coverage	95.6%
Weighted Mean		.977
95% Confidence Interval for Weighted Mean	Lower Bound	.965
	Upper Bound	.990
Price Related Differential		1.002
Coefficient of Dispersion		.038
Coefficient of Variation	Mean Centered	5.5%

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

**Vacant Land**

**Ratio Statistics for CURRLND / VTASP**

Mean		.984
95% Confidence Interval for Mean	Lower Bound	.962
	Upper Bound	1.006
Median		1.000
95% Confidence Interval for Median	Lower Bound	.981
	Upper Bound	1.000
	Actual Coverage	95.0%
Weighted Mean		.930
95% Confidence Interval for Weighted Mean	Lower Bound	.906
	Upper Bound	.954
Price Related Differential		1.058
Coefficient of Dispersion		.170
Coefficient of Variation	Mean Centered	26.3%

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

**Residential Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$25K to \$50K	7	.1%
	\$50K to \$100K	194	2.3%
	\$100K to \$150K	985	11.5%
	\$150K to \$200K	2332	27.3%
	\$200K to \$300K	2893	33.9%
	\$300K to \$500K	1631	19.1%
	\$500K to \$750K	383	4.5%
	\$750K to \$1,000K	72	.8%
	Over \$1,000K	42	.5%
Overall		8539	100.0%
Excluded		0	
Total		8539	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$25K to \$50K	1.404	.993	.361	53.9%
\$50K to \$100K	1.036	1.006	.124	20.0%
\$100K to \$150K	1.017	1.001	.079	12.6%
\$150K to \$200K	1.004	1.001	.063	9.0%
\$200K to \$300K	.990	1.000	.061	8.6%
\$300K to \$500K	.972	1.001	.069	9.2%
\$500K to \$750K	.992	1.000	.057	8.1%
\$750K to \$1,000K	1.000	1.001	.046	8.5%
Over \$1,000K	.993	.999	.045	6.5%
Overall	.997	1.011	.068	10.4%

**Subclass**

**Case Processing Summary**

	Count	Percent
Preuse 1112	7276	85.2%
1115	64	.7%
1120	25	.3%
1125	6	.1%
1230	1168	13.7%
Overall	8539	100.0%
Excluded	0	
Total	8539	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1112	.997	1.011	.070	10.6%
1115	1.000	1.007	.048	8.0%
1120	.997	1.007	.049	9.1%
1125	1.000	1.006	.003	.6%
1230	.994	1.008	.058	9.3%
Overall	.997	1.011	.068	10.4%



## Age

### Case Processing Summary

		Count	Percent
AgeRec	Over 100	119	1.4%
	75 to 100	171	2.0%
	50 to 75	323	3.8%
	25 to 50	2121	24.8%
	5 to 25	3655	42.8%
	5 or Newer	2150	25.2%
Overall		8539	100.0%
Excluded		0	
Total		8539	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	.995	1.013	.102	13.9%
75 to 100	.997	1.023	.104	15.1%
50 to 75	1.000	1.022	.097	17.8%
25 to 50	1.000	1.015	.078	12.2%
5 to 25	.997	1.009	.063	9.1%
5 or Newer	.987	1.003	.057	7.8%
Overall	.997	1.011	.068	10.4%

## Improved Area

### Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	20	.2%
	500 to 1,000 sf	979	11.5%
	1,000 to 1,500 sf	3049	35.7%
	1,500 to 2,000 sf	2391	28.0%
	2,000 to 3,000 sf	1780	20.8%
	3,000 sf or Higher	320	3.7%
Overall		8539	100.0%
Excluded		0	
Total		8539	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LE 500 sf	.971	1.035	.108	16.4%
500 to 1,000 sf	.999	1.015	.077	12.3%
1,000 to 1,500 sf	.997	1.010	.066	10.5%
1,500 to 2,000 sf	.996	1.012	.068	9.9%
2,000 to 3,000 sf	.994	1.010	.067	9.8%
3,000 sf or Higher	1.001	1.005	.064	9.5%
Overall	.997	1.011	.068	10.4%

**Commercial Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	\$25K to \$50K	3	2.1%
	\$50K to \$100K	13	9.1%
	\$100K to \$150K	22	15.4%
	\$150K to \$200K	15	10.5%
	\$200K to \$300K	31	21.7%
	\$300K to \$500K	20	14.0%
	\$500K to \$750K	10	7.0%
	\$750K to \$1,000K	12	8.4%
	Over \$1,000K	17	11.9%
Overall		143	100.0%
Excluded		0	
Total		143	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$25K to \$50K	.951	1.002	.035	5.6%
\$50K to \$100K	.999	1.007	.044	5.8%
\$100K to \$150K	.993	.998	.037	6.0%
\$150K to \$200K	.995	.999	.032	5.4%
\$200K to \$300K	.980	1.001	.035	5.3%
\$300K to \$500K	.981	.998	.029	3.9%
\$500K to \$750K	.967	.997	.040	5.2%
\$750K to \$1,000K	.991	.998	.054	8.4%
Over \$1,000K	.992	1.002	.034	5.3%
Overall	.989	1.002	.038	5.6%

**Subclass**

**Case Processing Summary**

	Count	Percent
Preduse 2112	13	9.1%
2115	7	4.9%
2120	19	13.3%
2130	14	9.8%
2135	14	9.8%
2245	74	51.7%
3115	2	1.4%
Overall	143	100.0%
Excluded	0	
Total	143	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
2112	.988	.999	.043	6.2%
2115	.938	.982	.055	6.9%
2120	.981	.984	.030	5.3%
2130	.995	.989	.044	6.2%
2135	1.000	1.004	.023	3.7%
2245	.990	1.008	.039	5.6%
3115	.977	.993	.015	2.1%
Overall	.989	1.002	.038	5.6%

**Vacant Land Median Ratio Stratification**
**Case Processing Summary**

	Count	Percent
VPreduse 100	382	69.6%
200	26	4.7%
400	85	15.5%
510	1	.2%
520	8	1.5%
540	5	.9%
550	34	6.2%
1112	8	1.5%
Overall	549	100.0%
Excluded	0	
Total	549	

**Ratio Statistics for CURRLND / VTASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
100	1.000	1.054	.179	27.6%
200	.901	.999	.179	23.9%
400	.990	.999	.175	23.6%
510	1.000	1.000	.000	.
520	1.012	.961	.111	21.5%
540	.980	1.101	.057	8.5%
550	1.000	.987	.086	13.7%
1112	.952	1.013	.191	26.0%
Overall	1.000	1.058	.170	25.9%