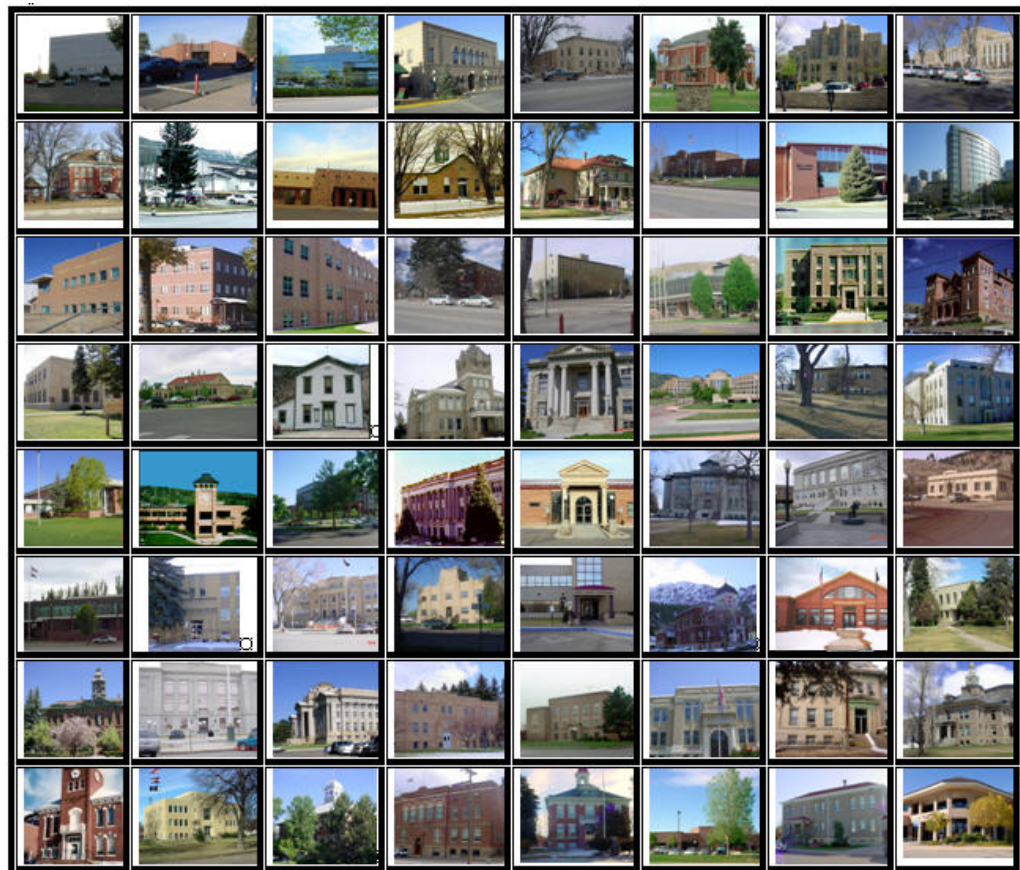




2013  
DOUGLAS COUNTY  
PROPERTY ASSESSMENT  
STUDY

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WILDROSE  
APPRAISAL, INCORPORATED  
Audit Division



September 15, 2013

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

**RE: Final Report for the 2013 Colorado Property Assessment Study**

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2013 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 dark ink, appearing to read "Harry J. Fuller". The signature is fluid and cursive, with a large, stylized "H" and "F".

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 2013 and is pleased to report its findings for Douglas County in the following report.

# REGIONAL/HISTORICAL SKETCH OF DOUGLAS COUNTY

## Regional Information

Douglas 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

Douglas County has a population of approximately 285,465 people with 339.84 people per square mile, according to the U.S. Census Bureau's 2010 census data. This represents a 62.41 percent change from the 2000 Census.

Douglas County was one of the original 17 counties created in the Colorado Territory by the Colorado Territorial Legislature on November 1, 1861. The county was named in honor of U.S. Senator Stephen A. Douglas of Illinois, who died five months before the county was created. The county seat was originally Franktown, but was moved to California Ranch in 1863, and then to Castle Rock in 1874. Although the county's boundaries originally extended eastward to the Kansas state border, in 1874 most of the eastern portion of the county became part of Elbert County.

Douglas County is the eighth most populous of the 64 counties of the State of Colorado. The county, sometimes nicknamed Dougco, is located midway between Colorado's two largest cities: Denver and Colorado Springs. The United States Census Bureau estimates that the county population was 280,621 in 2008, a 59.7% increase since U.S. Census 2000, making Douglas County one of the fastest growing counties in the United States. The county seat is Castle Rock, named after a small butte just north of the town.

Douglas County is lightly wooded, mostly with ponderosa pine, with broken terrain characterized by mesas and small streams. Cherry Creek and Plum Creek rise in Douglas County and flow north toward Denver and into the South Platte River. Both were subject to flash flooding in the past, Plum Creek being partially responsible for the Denver flood of 1965. Cherry Creek is now dammed.  
*(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 2011 and June 2012. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2012 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 Douglas County are:

<b>Douglas 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	100	0.991	1.090	20.6	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	11,053	1.000	1.012	7.8	Compliant
Vacant Land	231	1.000	1.100	20.9	Compliant

<b>Ratio Statistics for CURRTOT / TASP</b>			
<b>Group</b>	<b>Median</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>
1	1.000	1.011	.076
2	1.000	1.010	.065
3	.995	1.023	.093
4	1.000	1.008	.079
5	1.008	1.020	.122
6	.998	1.014	.124
7	1.024	1.336	.285
Overall	1.000	1.012	.076

After applying the above described methodologies, it is concluded from the sales ratios that Douglas County is in compliance

with SBOE, DPT, and Colorado State Statute valuation guidelines.

### **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 Douglas County has complied with the statutory requirements to analyze the effects of time on value in their county. Douglas 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

Douglas 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 2012 and 2013 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.

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

### Conclusions

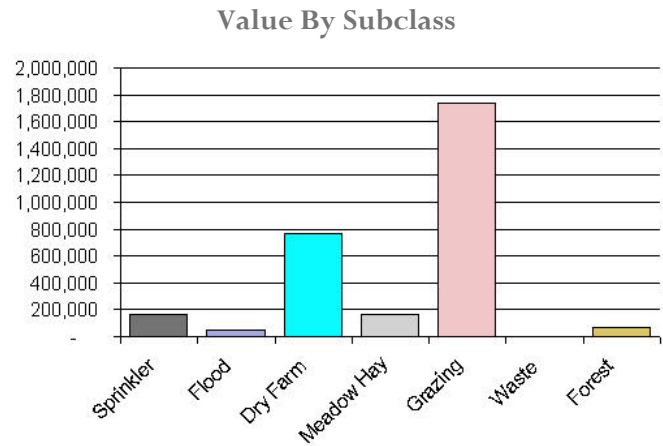
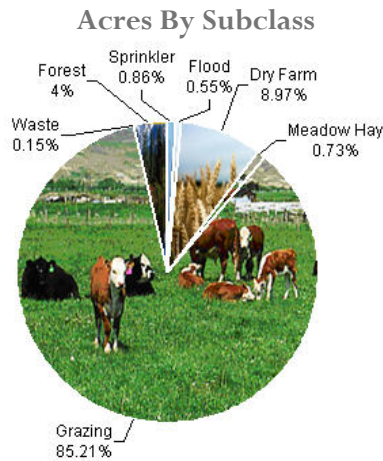
After applying the above described methodologies, it is concluded that Douglas County is reasonably treating its sold and unsold properties in the same manner.

### Recommendations

None



## AGRICULTURAL LAND STUDY



### Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax Administrator (PTA), were applied properly.

(See Assessor Reference Library Volume 3 Chapter 5.)

#### Conclusions

An analysis of the agricultural land data indicates an acceptable appraisal of this property type. Directives, commodity prices and expenses provided by the PTA were properly applied. 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:



Douglas County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4107	Sprinkler	1,713	94.00	160,558	160,558	1.00
4117	Flood	1,095	41.00	45,112	45,112	1.00
4127	Dry Farm	17,777	43.00	768,185	762,580	1.01
4137	Meadow Hay	1,447	114.00	165,284	165,284	1.00
4147	Grazing	168,910	10.00	1,734,507	1,734,507	1.00
4177	Forest	6,983	10.00	69,631	69,631	1.00
4167	Waste	292	2.00	510	510	1.00
Total/Avg		198,217	15.00	2,943,787	2,938,182	1.00

## 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

Douglas County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of agricultural outbuildings.

### Recommendations

None

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## Agricultural Land Under Improvements

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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 5.19 and 5.20 were being followed.

Douglas County utilized the following discovery method(s):

- Questionnaires
- Phone Interviews
- In-Person Interviews
- Written Correspondence
- Personal Knowledge of Owners and Tenants

- Database to track ag properties correspondence

### Conclusions

Douglas County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

### 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 2013 for Douglas County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 59 sales listed as unqualified.

All but one of the sales selected in the sample gave reasons that were clear and supportable. One sale had insufficient reason for disqualification.

For residential, commercial, and vacant land sales with considerations over \$500, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

The contractor has examined the manner in which sales have been classified as qualified or unqualified, including a listing of each step in the sales verification process, any adjustment procedures, and the county official responsible for making the final decision on qualification.

When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number



of properties or by value, from the prior year. The contractor has reviewed with the assessor any analysis indicating that sales data are inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to determine if the sales included in that code have been assigned appropriately.

If 50 percent or more of the sales are qualified, the contractor has reviewed a

statistically significant sample of unqualified sales, excluding sales that were disqualified for obvious reasons.

Douglas County did not qualify for in-depth subclass analysis.

### **Conclusions**

Douglas County appears to be doing an good 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**

Douglas County has submitted a written narrative describing the economic areas that make up the county's market areas. Douglas 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 Douglas 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 2013 in Douglas 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**

Douglas 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.

Douglas 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

Douglas 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

Douglas 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.

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

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

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.

Douglas County submitted their personal property written audit plan and was current for the 2013 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
- Accounts with greater than 10% change
- Incomplete or inconsistent declarations
- Accounts with omitted property



- Same business type or use
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- Accounts close to the \$7,000 actual value exemption status
- Accounts protested with substantial disagreement

Douglas County's median ratio is 1.00. 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**

Douglas County has employed adequate discovery, classification, documentation, valuation, and auditing procedures for their personal property assessment and is in compliance with SBOE requirements.

### **Recommendations**

None

## WILDROSE AUDITOR STAFF

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

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

**Steve Kane**, *Audit Statistician*

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

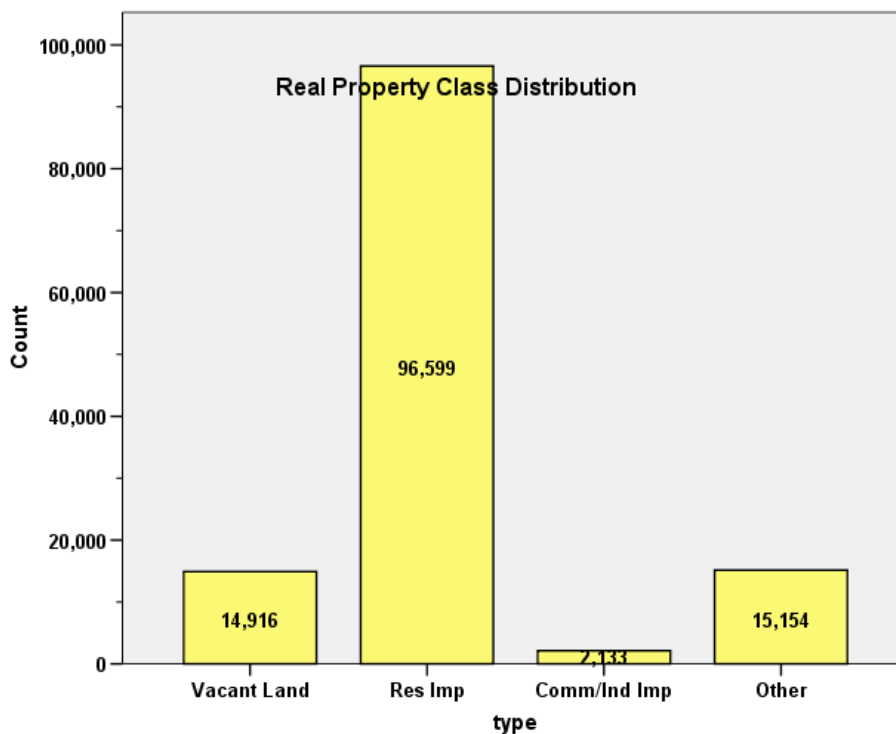
**J. Andrew Rodriguez**, *Field Analyst*

# APPENDICES

## STATISTICAL COMPLIANCE REPORT FOR DOUGLAS COUNTY 2013

### I. OVERVIEW

Douglas County is a metropolitan county located along Colorado's Front Range urban corridor. The county has a total of 128,802 real property parcels, according to data submitted by the county assessor's office in 2013. The following provides a breakdown of property classes for this county:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1112) accounted for over 90.4% of all vacant land parcels.

For residential improved properties, single family properties accounted for 92.8% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 1.7% of all such properties in this county.

## II. DATA FILES

The following sales analyses were based on the requirements of the 2013 Colorado Property Assessment Study. Information was provided by the Douglas Assessor's Office in June 2013. The data included all 5 property record files as specified by the Auditor.

## III. RESIDENTIAL SALES RESULTS

There were 11,053 qualified residential sales in the 24 month sale period ending June 30, 2012. The sales ratio analysis was analyzed as follows:

**Case Processing Summary**

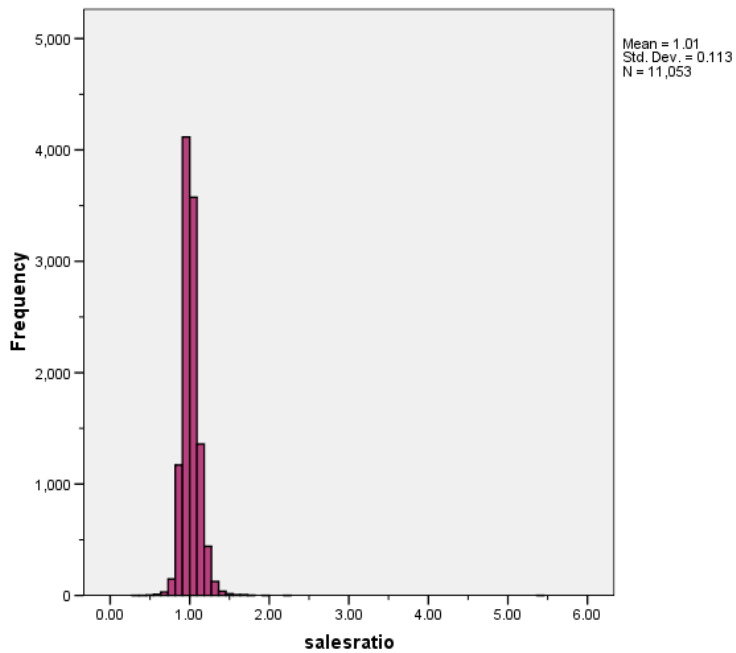
	Count	Percent
ECONAREA 1	3213	29.1%
2	4096	37.1%
3	835	7.6%
4	2491	22.5%
5	150	1.4%
6	245	2.2%
7	21	.2%
Overall	11051	100.0%
Excluded	2	
Total	11053	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.000	1.011	.076
2	1.000	1.010	.065
3	.995	1.023	.093
4	1.000	1.008	.079
5	1.008	1.020	.122
6	.998	1.014	.124
7	1.024	1.336	.285
Overall	1.000	1.012	.076

The above ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for residential sales; please note that Economic Area 7 had only 21 sales, so its ratio analysis results were not valid. 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.

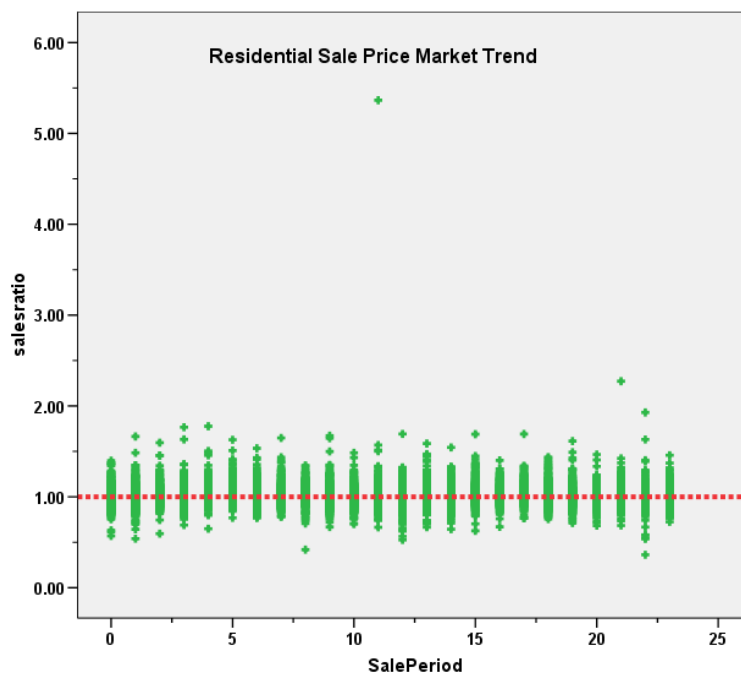
## Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending and stratified by economic area, as follows:

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

ECONAREA	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	1	(Constant)	1.014	.003		310.265	.000
		SalePeriod	.000	.000	-.010	-.591	.555
2	1	(Constant)	1.009	.002		415.517	.000
		SalePeriod	.000	.000	-.010	-.648	.517
3	1	(Constant)	1.018	.012		85.904	.000
		SalePeriod	-.001	.001	-.019	-.550	.583
4	1	(Constant)	1.023	.004		266.127	.000
		SalePeriod	-.001	.000	-.046	-2.285	.022
5	1	(Constant)	1.033	.026		39.242	.000
		SalePeriod	-.001	.002	-.032	-.392	.696
6	1	(Constant)	.997	.018		54.463	.000
		SalePeriod	.001	.001	.067	1.048	.296
7	1	(Constant)	.933	.236		3.947	.001
		SalePeriod	.007	.016	.106	.464	.648

a. Dependent Variable: salesratio



The above results indicated that there is no significant residual market trending for residential property sales when broken down by economic area, based on either statistical significance or the magnitude of any residual trending that was significant. We therefore concluded that the assessor has adequately considered market trending in their residential valuations overall.

### **Sold/Unsold Analysis**

In terms of the valuation consistency between sold and unsold residential properties, we compared the median and mean actual values per square foot for 2013 between each group. The data was analyzed both as a whole and broken down by economic area, as follows:

<b>Group</b>	<b>N</b>	<b>Median</b>	<b>Mean</b>
Unsold	84,963	\$135	\$142
Sold	11,053	\$143	\$150

<b>ECONAREA</b>	<b>Group</b>	<b>N</b>	<b>Median</b>	<b>Mean</b>
1	Unsold	23,825	\$126.44	\$132.73
	Sold	3,213	\$133.45	\$139.22
2	Unsold	32,627	\$143.27	\$148.45
	Sold	4,096	\$153.47	\$160.80
3	Unsold	6,583	\$143.09	\$155.41
	Sold	835	\$148.77	\$162.94
4	Unsold	16,002	\$120.41	\$134.40
	Sold	2,491	\$128.21	\$139.87
5	Unsold	1,933	\$141.54	\$145.91
	Sold	150	\$157.42	\$159.20
6	Unsold	2,989	\$156.05	\$163.63
	Sold	245	\$166.33	\$171.06
7	Unsold	485	\$126.46	\$134.65
	Sold	21	\$128.18	\$143.23

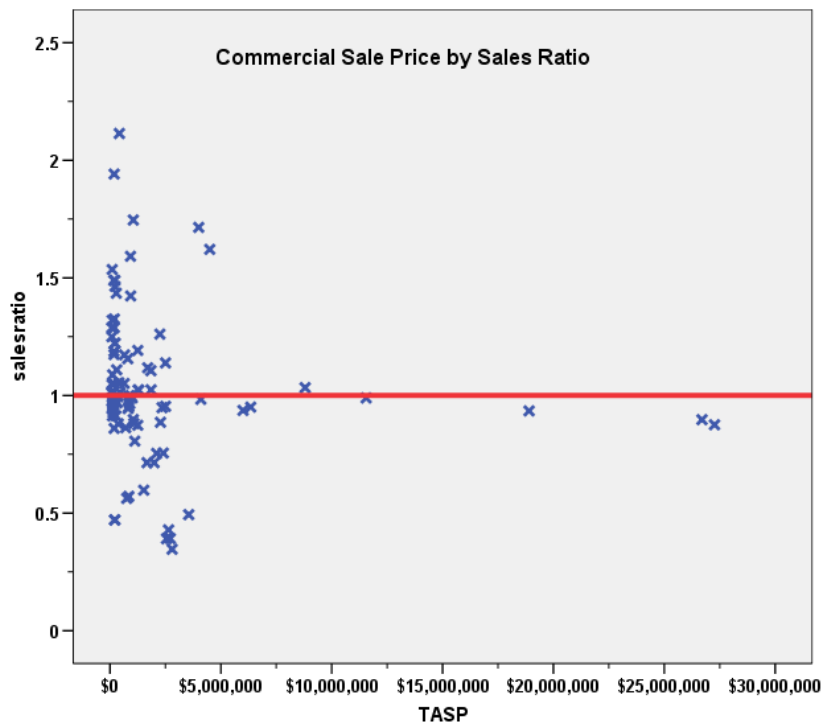
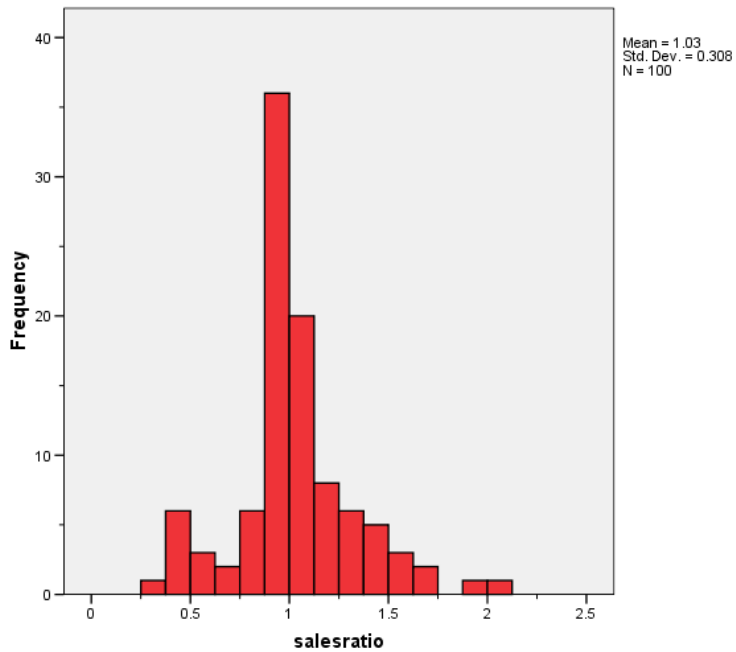
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

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

There were 100 qualified commercial and industrial sales in the 18 month sale period ending June 30, 2012. The sales ratio analysis was analyzed as follows:

Median	<b>0.991</b>
Price Related Differential	<b>1.090</b>
Coefficient of Dispersion	<b>.206</b>

The above table indicates that the Douglas County commercial/industrial sales ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:



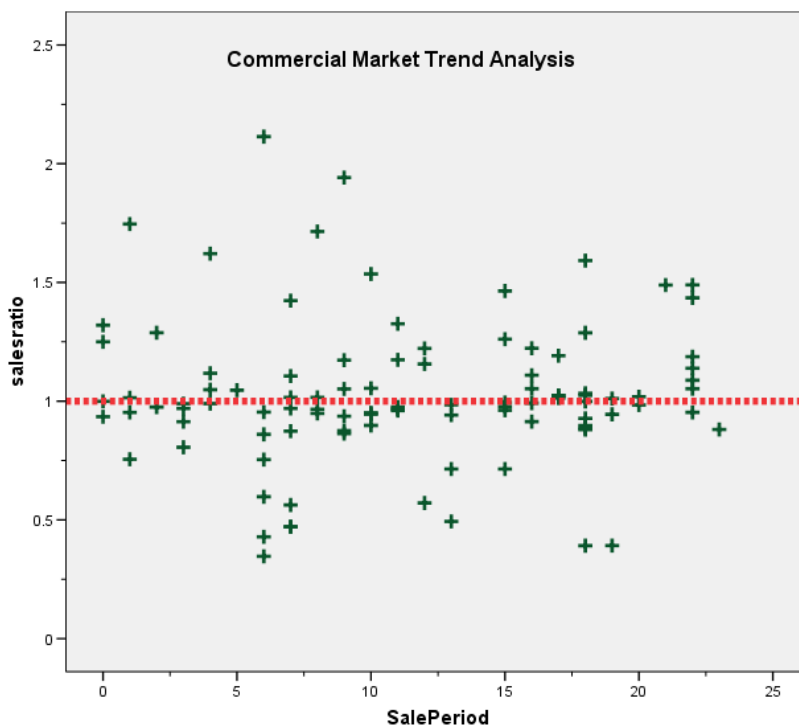
## Commercial/Industrial Market Trend Analysis

The 100 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)	1.020	.062		16.389	.000
	SalePeriod	.001	.005	.018	.182	.856

a. Dependent Variable: salesratio



There was no residual market trending present in the commercial/industrial 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 and mean values per square foot between sold and unsold properties, as follows:

Group	N	Median	Mean
Unsold	1,861	\$122.00	\$147.21
Sold	100	\$140.00	\$135.07

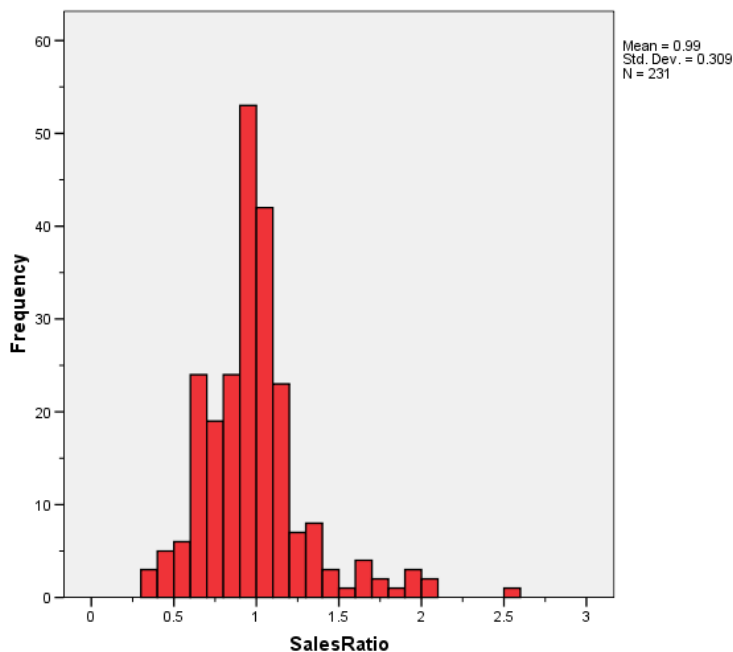
The above results indicated that sold and unsold commercial properties were valued consistently.

## V. VACANT LAND SALE RESULTS

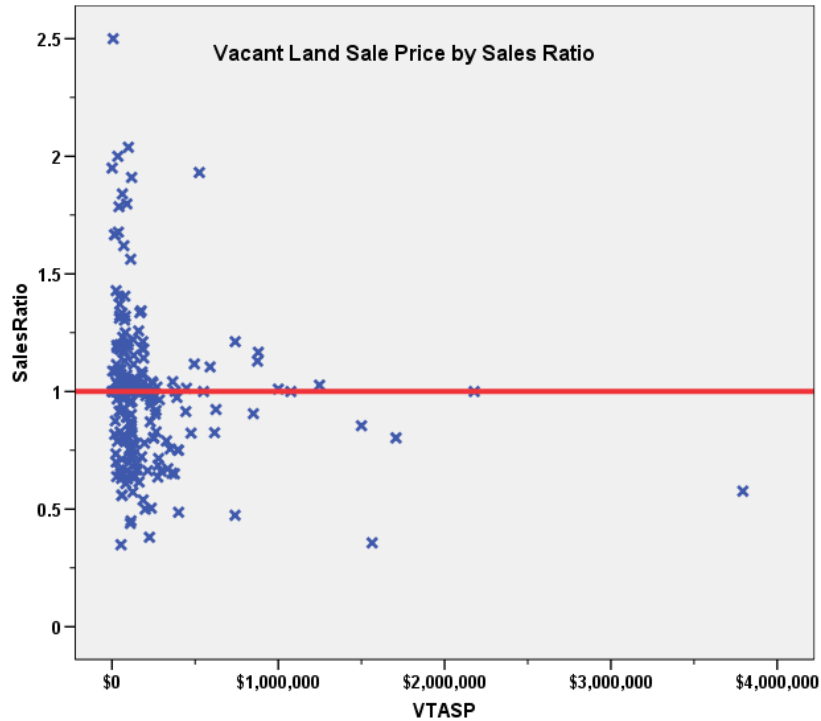
There were 243 qualified vacant land sales in the 18 month sale period ending June 30, 2012. We trimmed 12 sales based on their extreme sales ratios, resulting in a total of 231 sales. The sales ratio analysis was analyzed as follows:

Ratio Statistics for currInd / Vtasp	
Median	1.000
Price Related Differential	1.100
Coefficient of Dispersion	.209

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:







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

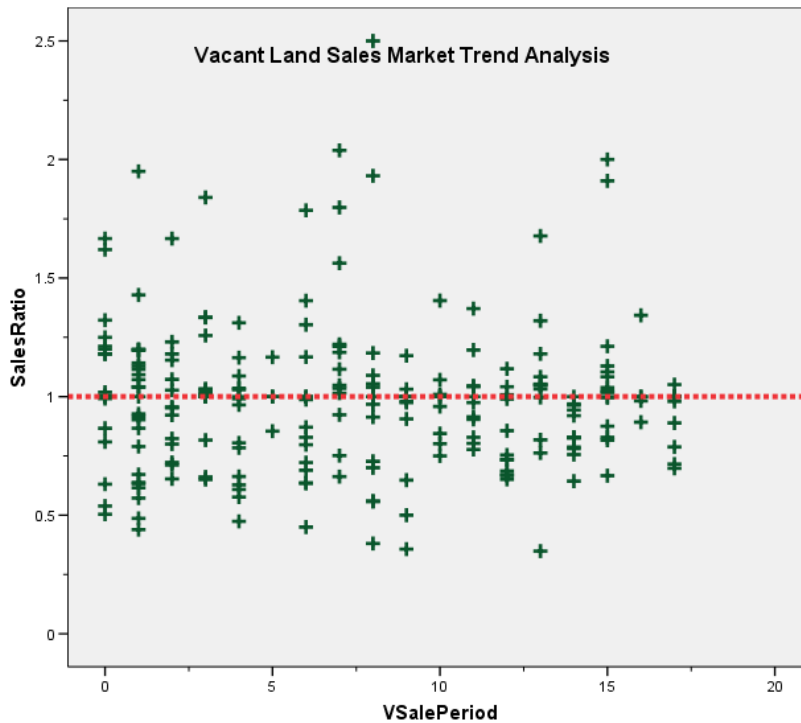
### Vacant Land Market Trend Analysis

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)	1.005	.035		28.528	.000
VSalePeriod	-.002	.004	-.037	-.565	.572

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 2012 and 2013 between each group, as follows:

Group	No. Sales	Median	Mean
Unsold	9,650	1.000	1.263
Sold	213	0.920	1.003

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 2013.

## VI. CONCLUSIONS

Based on this 2013 audit statistical analysis, residential, commercial and vacant land properties were found to be in compliance with state guidelines.

## STATISTICAL ABSTRACT

### Residential

**Ratio Statistics for CURRTOT / TASP**

ECONAREA	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
		Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
1	1.012	1.009	1.016	1.000	.999	1.003	95.2%	1.001	.994	1.008	1.011	.076	10.2%
2	1.008	1.005	1.011	1.000	.999	1.002	95.3%	.998	.991	1.004	1.010	.065	8.8%
3	1.013	1.000	1.026	.995	.988	1.003	95.5%	.990	.977	1.003	1.023	.093	19.0%
4	1.016	1.011	1.020	1.000	1.000	1.004	95.0%	1.007	1.000	1.014	1.008	.079	10.8%
5	1.024	.997	1.051	1.008	.990	1.024	95.9%	1.004	.973	1.036	1.020	.122	16.6%
6	1.013	.993	1.033	.998	.975	1.023	95.9%	.999	.977	1.022	1.014	.124	15.9%
7	1.034	.847	1.222	1.024	.752	1.266	97.3%	.774	.517	1.032	1.336	.295	39.9%

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

**Ratio Statistics for CURRTOT / TASP**

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
1.029	.968	1.090	.991	.966	1.023	96.5%	.944	.877	1.011	1.090	.206	29.9%

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

### Vacant Land

**Ratio Statistics for CURRLND / VTASP**

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
.988	.948	1.029	1.000	.975	1.000	95.2%	.899	.826	.971	1.100	.209	31.3%

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



**Residential Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

	Count	Percent
SPRec LT \$25K	1	.0%
\$25K to \$50K	11	.1%
\$50K to \$100K	107	1.0%
\$100K to \$150K	365	3.3%
\$150K to \$200K	929	8.4%
\$200K to \$300K	3972	35.9%
\$300K to \$500K	4125	37.3%
\$500K to \$750K	1077	9.7%
\$750K to \$1,000K	294	2.7%
Over \$1,000K	172	1.6%
Overall	11053	100.0%
Excluded	0	
Total	11053	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LT \$25K	1.458	1.000	.000	.%
\$25K to \$50K	1.068	1.030	.209	39.3%
\$50K to \$100K	1.071	1.002	.121	17.1%
\$100K to \$150K	1.023	.999	.102	25.3%
\$150K to \$200K	1.027	1.001	.082	10.6%
\$200K to \$300K	1.005	1.000	.066	9.0%
\$300K to \$500K	.995	1.001	.068	9.5%
\$500K to \$750K	.985	1.000	.088	11.9%
\$750K to \$1,000K	.983	.999	.126	17.8%
Over \$1,000K	.923	.997	.133	17.9%
Overall	1.000	1.012	.076	11.4%

## Subclass

### Case Processing Summary

	Count	Percent
ABSTRIMP 1212	10318	93.4%
1220	1	.0%
1225	4	.0%
1230	719	6.5%
1277	11	.1%
Overall	11053	100.0%
Excluded	0	
Total	11053	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1212	1.000	1.009	.076	11.4%
1220	.978	1.000	.000	.%
1225	.945	1.000	.017	2.2%
1230	1.000	1.010	.078	11.0%
1277	.738	.975	.241	30.1%
Overall	1.000	1.012	.076	11.4%

## Improvement Age

**Case Processing Summary**

	Count	Percent
AgeRec Over 100	3	.0%
75 to 100	4	.0%
50 to 75	39	.4%
25 to 50	999	9.0%
5 to 25	7583	68.6%
5 or Newer	2425	21.9%
Overall	11053	100.0%
Excluded	0	
Total	11053	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	1.007	1.013	.060	11.0%
75 to 100	.864	1.233	.505	75.8%
50 to 75	.998	1.188	.191	32.3%
25 to 50	1.001	1.015	.103	14.1%
5 to 25	1.000	1.012	.074	11.2%
5 or Newer	1.002	1.009	.068	9.7%
Overall	1.000	1.012	.076	11.4%

## Improved Area

### Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	3	.0%
	500 to 1,000 sf	161	1.5%
	1,000 to 1,500 sf	1640	14.8%
	1,500 to 2,000 sf	2790	25.2%
	2,000 to 3,000 sf	4388	39.7%
	3,000 sf or Higher	2071	18.7%
Overall		11053	100.0%
Excluded		0	
Total		11053	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LE 500 sf	1.373	1.073	.100	17.4%
500 to 1,000 sf	1.006	1.025	.119	19.4%
1,000 to 1,500 sf	.992	1.008	.074	10.1%
1,500 to 2,000 sf	1.000	1.006	.065	8.9%
2,000 to 3,000 sf	1.000	1.009	.070	9.6%
3,000 sf or Higher	1.004	1.026	.099	16.6%
Overall	1.000	1.012	.076	11.4%

## Improvement Quality

**Case Processing Summary**

		Count	Percent
QUALITY	Average	7238	65.5%
	Excele	172	1.6%
	Fair	20	.2%
	Good	2754	24.9%
	Very Go	869	7.9%
Overall		11053	100.0%
Excluded		0	
Total		11053	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Average	1.000	1.009	.069	9.5%
Excele	1.013	1.044	.156	21.0%
Fair	1.007	1.562	.253	43.2%
Good	1.001	1.015	.077	10.5%
Very Go	1.009	1.021	.108	20.2%
Overall	1.000	1.012	.076	11.4%



## Improvement Condition

**Case Processing Summary**

		Count	Percent
CONDITION	Average	1249	11.3%
	Badly Worn	2	.0%
	Good	9798	88.6%
	Very Good	4	.0%
Overall		11053	100.0%
Excluded		0	
Total		11053	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Average	1.001	1.019	.099	14.1%
Badly Worn	1.683	1.380	.350	49.5%
Good	1.000	1.011	.073	10.9%
Very Good	1.037	1.013	.075	9.2%
Overall	1.000	1.012	.076	11.4%

### Commercial Median Ratio Stratification

#### Sale Price

**Case Processing Summary**

	Count	Percent
SPRec \$50K to \$100K	8	8.0%
\$100K to \$150K	13	13.0%
\$150K to \$200K	13	13.0%
\$200K to \$300K	9	9.0%
\$300K to \$500K	7	7.0%
\$500K to \$750K	4	4.0%
\$750K to \$1,000K	10	10.0%
Over \$1,000K	36	36.0%
Overall	100	100.0%
Excluded	0	
Total	100	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
\$50K to \$100K	1.148	.998	.146	17.6%
\$100K to \$150K	.967	.998	.048	6.3%
\$150K to \$200K	1.016	.991	.200	32.9%
\$200K to \$300K	1.222	.991	.253	34.9%
\$300K to \$500K	1.013	.984	.202	44.9%
\$500K to \$750K	.957	1.016	.208	28.3%
\$750K to \$1,000K	.994	.995	.176	29.1%
Over \$1,000K	.936	.999	.241	35.0%
Overall	.991	1.090	.206	31.3%

## Subclass

### Case Processing Summary

	Count	Percent
ABSTRIMP 2212	24	24.0%
2220	13	13.0%
2225	2	2.0%
2230	13	13.0%
2235	6	6.0%
2245	11	11.0%
3212	5	5.0%
3215	1	1.0%
3230	25	25.0%
Overall	100	100.0%
Excluded	0	
Total	100	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation	
				Median Centered	
2212	.989	1.155	.244	34.6%	
2220	1.054	1.207	.171	31.5%	
2225	1.340	.849	.279	39.5%	
2230	.913	.915	.150	26.4%	
2235	.792	1.148	.525	65.1%	
2245	1.288	1.137	.199	28.2%	
3212	.945	1.153	.130	27.5%	
3215	1.192	1.000	.000	.%	
3230	.984	1.015	.074	14.1%	
Overall	.991	1.090	.206	31.3%	

## Improvement Age

**Case Processing Summary**

	Count	Percent
AgeRec 75 to 100	1	1.0%
50 to 75	4	4.0%
25 to 50	9	9.0%
5 to 25	40	40.0%
5 or Newer	46	46.0%
Overall	100	100.0%
Excluded	0	
Total	100	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
75 to 100	1.174	1.000	.000	.%
50 to 75	1.151	1.046	.189	22.9%
25 to 50	.994	1.035	.137	27.7%
5 to 25	.999	1.084	.169	24.1%
5 or Newer	.976	1.191	.252	38.3%
Overall	.991	1.090	.206	31.3%

## Improved Area

**Case Processing Summary**

	Count	Percent
ImpSFRec 500 to 1,000 sf	9	9.0%
1,000 to 1,500 sf	25	25.0%
1,500 to 2,000 sf	5	5.0%
2,000 to 3,000 sf	8	8.0%
3,000 sf or Higher	53	53.0%
Overall	100	100.0%
Excluded	0	
Total	100	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
500 to 1,000 sf	1.019	1.015	.124	21.4%
1,000 to 1,500 sf	.984	1.018	.127	20.2%
1,500 to 2,000 sf	1.326	.986	.103	13.8%
2,000 to 3,000 sf	1.052	1.154	.301	42.5%
3,000 sf or Higher	.954	1.047	.234	35.7%
Overall	.991	1.090	.206	31.3%

## Improvement Quality

### Case Processing Summary

		Count	Percent
QUALITY	Average	53	53.0%
	Good	46	46.0%
	Very Go	1	1.0%
Overall		100	100.0%
Excluded		0	
Total		100	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Average	.975	1.066	.233	35.4%
Good	1.014	1.111	.171	26.1%
Very Go	.756	1.000	.000	.%
Overall	.991	1.090	.206	31.3%

## Improvement Condition

**Case Processing Summary**

		Count	Percent
CONDITION	Average	15	15.0%
	Good	85	85.0%
Overall		100	100.0%
Excluded		0	
Total		100	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Average	1.051	1.130	.200	33.3%
Good	.984	1.082	.205	30.7%
Overall	.991	1.090	.206	31.3%

## Vacant Land Median Ratio Stratification

### Sale Price

**Case Processing Summary**

	Count	Percent
SPRec LT \$25K	17	7.4%
\$25K to \$50K	30	13.0%
\$50K to \$100K	60	26.0%
\$100K to \$150K	44	19.0%
\$150K to \$200K	19	8.2%
\$200K to \$300K	28	12.1%
\$300K to \$500K	15	6.5%
\$500K to \$750K	7	3.0%
\$750K to \$1,000K	4	1.7%
Over \$1,000K	7	3.0%
Overall	231	100.0%
Excluded	0	
Total	231	

**Ratio Statistics for CURRLND / VTASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LT \$25K	1.008	1.090	.309	52.0%
\$25K to \$50K	1.102	.995	.196	27.4%
\$50K to \$100K	1.003	.988	.212	31.0%
\$100K to \$150K	.861	1.002	.211	30.4%
\$150K to \$200K	1.038	1.005	.183	24.9%
\$200K to \$300K	.953	1.004	.137	20.5%
\$300K to \$500K	.790	.989	.183	23.1%
\$500K to \$750K	1.000	1.029	.289	45.4%
\$750K to \$1,000K	1.070	1.000	.089	11.2%
Over \$1,000K	.855	1.056	.216	30.2%
Overall	1.000	1.100	.209	31.0%



## Subclass

**Case Processing Summary**

	Count	Percent
ABSTRLND 100	130	56.3%
200	6	2.6%
300	1	.4%
510	1	.4%
520	1	.4%
540	1	.4%
550	2	.9%
1112	80	34.6%
1125	3	1.3%
2112	3	1.3%
2120	1	.4%
2130	2	.9%
Overall	231	100.0%
Excluded	0	
Total	231	

**Ratio Statistics for CURRLND / VTASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
100	1.000	1.086	.238	33.2%
200	.992	1.094	.352	50.5%
300	.722	1.000	.000	.%
510	1.000	1.000	.000	.%
520	1.950	1.000	.000	.%
540	1.000	1.000	.000	.%
550	.914	1.050	.100	14.1%
1112	.998	1.117	.160	25.9%
1125	1.000	1.247	.176	30.9%
2112	1.011	.976	.067	13.0%
2120	1.000	1.000	.000	.%
2130	1.068	.989	.135	19.1%
Overall	1.000	1.100	.209	31.0%