

**2006**  
**Douglas County**

**PROPERTY ASSESSMENT STUDY**

**Prepared for The Colorado Legislative Council**



**ROCKY MOUNTAIN**  

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**VALUATION SPECIALISTS**

# Douglas County

## Property Assessment Study

### Table of Contents

- Introduction ..... 1
- Historical Sketch of Douglas County ..... 3
- Ratio Analysis ..... 4
- Time Trending Verification ..... 5
- Sold/Unsold Analysis ..... 6
- Agricultural Land Study ..... 8
  - Agricultural Land ..... 8
  - Agricultural Residences ..... 9
  - Agricultural Outbuildings ..... 9
- Sales Verification ..... 9
- Economic Area Review and Evaluation ..... 11
- Natural Resources ..... 11
  - Earth and Stone Products ..... 11
- Vacant Land ..... 12
- Possessory Interest Properties ..... 12
- Personal Property Audit ..... 13
- RMVS Auditor Staff ..... 16
- Appendices ..... 17

# 2006

## Property Assessment Study

### Douglas County

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#### INTRODUCTION

Beginning in 1967 and continuing through the present, the Tax Commission and its successor, the Division of Property Taxation, have conducted a sales valuation analysis (sales ratio study) each year. In the analysis, the sales prices of properties are compared to their assessed valuations to determine how well assessed valuations reflect real property values.

In 1982, the voters of Colorado approved an amendment to the State Constitution that affected the manner in which property is assessed. This amendment was proposed in anticipation of implementation of the 1977 level of value during 1983.

The Amendment requires appropriate consideration of the three approaches to value: cost, market, and income. There are two exceptions to this requirement. Residential property is valued on market only. Agricultural land is valued solely on the earning or productive capacity of such lands.

All property is assessed at 29% of actual value with two exceptions. Residential property, the first exception, is assessed at its yearly determined assessed rate. Producing mines and oil and gas leaseholds are the second exception and they are assessed at a portion of annual production.

Also, beginning in 1983, the State Board of Equalization (SBOE) was to review 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.

C.R.S. 39-1-104 (16)(a)(b) and (c) outlined how this was to be accomplished by stating that during each property tax year, the Director of Research of the Legislative Council shall contract with a private person for a valuation for assessment study. The study shall be conducted in all counties of the State to determine whether or not the assessor of each county has, in fact, used all manuals, formulas, and other directives required by law to arrive at the valuation for assessment of each and every class of real and personal property in the county. The person conducting the study shall sample each class of property in a statistically valid manner and the aggregate of such sampling shall equal at least one percent of all properties in each county of the State. The sampling shall show that the various areas, ages of buildings, economic conditions, and uses of properties have been sampled. Such study shall be completed and a final report of the findings and conclusions thereof shall be submitted to the State Board of Equalization by September 15 of the year in which the study is conducted.

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, develops time adjustments and performs and plans periodic physical property inspections. The audit also examines the procedures for adequately discovering, classifying and valuing agricultural residences and outbuildings, discovering subdivision build-out and subdivision discounting procedures. Valuation methodology for 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.

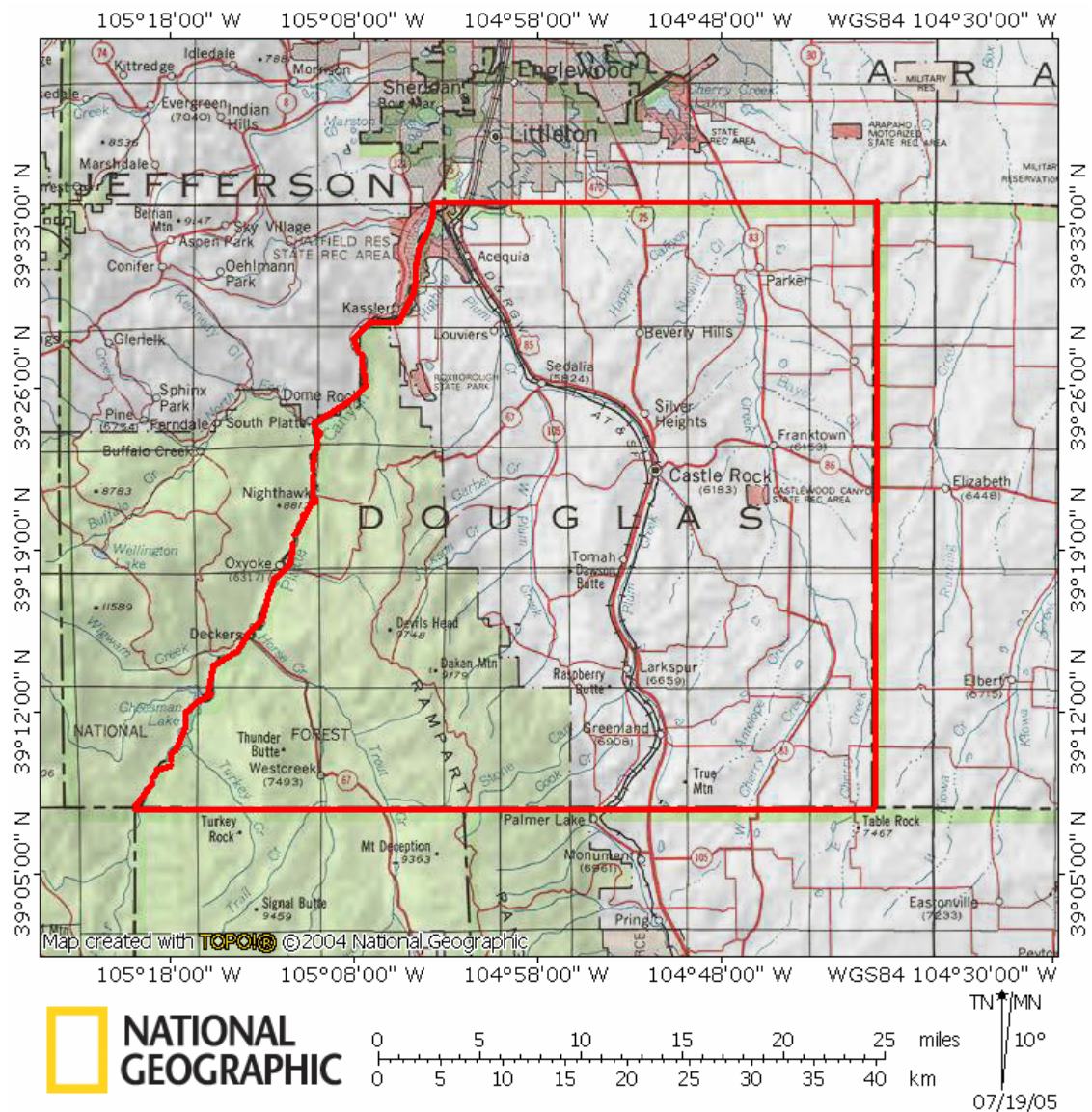
Statistical analysis is also performed on vacant land, residential properties, commercial/industrial properties, agricultural land, agricultural residences and outbuildings, other agricultural properties and personal property.

RMVS has completed the Property Assessment Study for 2006 and is pleased to report its findings for Douglas County in the following report.

# HISTORICAL SKETCH OF DOUGLAS COUNTY

Douglas County was established in 1861 with 843 square miles and, according to the 2000 census, an approximate population of 175,766 people. It was named for Stephen A Douglas.

The county seat is Castle Rock, so named for the nearby castellated rock formation which was given its name by Dr. Edwin James, botanist of Major Stephen Long's 1820 expedition. (William Bright, Colorado Place Names, 3rd Edition, Johnson Books, 2004, p.54 and 32)



## 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 2003 and June 2004. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2004 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. Although we examined grouping smaller counties by economic region to augment commercial sale totals, we still examined each county individually for compliance. 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. In every case, we examined the loss in data from trimming to insure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method were 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 found for Douglas County are:

RATIO GRID					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	53	0.98	1.027	15	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	14,157	1.002	1.007	6.3	Compliant
Vacant Land	638	0.983	1.047	20.6	Compliant

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.001	1.005	.054
2	1.003	1.006	.060
3	.998	1.017	.083
4	1.002	1.005	.066
5	1.027	1.006	.102
6	.995	1.024	.150
7	1.068	1.078	.233
8	1.014	1.005	.087
<b>Overall</b>	<b>1.002</b>	<b>1.007</b>	<b>.063</b>

NOTE: Economic Area 7 has only 16 sales.

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 insure 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 2004 and 2006 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.

**Conclusions**

<b>SOLD/UNSOLD RESULTS</b>	
<b>Property Class</b>	<b>Result</b>
Commercial/Industrial	Compliant
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

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. 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>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>RMVS Total Value</b>	<b>Ratio</b>
4107	Sprinkler Irrigated	1,682	37.87	63,700	64,000	1.00
4117	Flood Irrigated	1,121	37.26	41,770	44,689	0.93
4127	Dry Farm	17,253	18.43	317,920	324,295	0.98
4137	Meadow Hay	1,492	74.71	111,460	114,316	0.98
4147	Dry Grazing	183,497	8.64	1,585,520	1,585,351	1.00
4177	Forest	6,812	6.75	45,950	45,141	1.02
4167	Waste	977	1.75	1,710	2,004	0.85
<b>Total/Avg</b>		<b>212,834</b>	<b>10.19</b>	<b>2,168,030</b>	<b>2,179,796</b>	<b>0.99</b>

### **Recommendations**

None

### **Agricultural Residences**

#### **Methodology**

The county analyzes single-family residential sales and uses the sales comparison approach to value residences situated on agricultural lands. These residences are valued in a manner similar to other single-family residences. The county utilizes building permits when available and uses-field discovery methods to locate new construction of agricultural residential structures. The county strives to physically review all agricultural residences on a periodic basis.

#### **Conclusions**

A comparison of the single-family residential sales to a sample of unsold agricultural residences indicated that agricultural residences were appraised in manner similar to the sold single-family residential properties. The overall level and uniformity of appraisals of agricultural residences have met State Board of Equalization standards. One can conclude, therefore, that agricultural residences were valued using appropriate appraisal procedures.

### **Recommendations**

None

### **Agricultural Outbuildings**

Douglas County is exempt from the Agricultural Outbuilding Study.

## **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. RMVS has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

RMVS has conducted a study of the sales verification procedures in 2006 for Douglas County. This study was performed by checking selected sales listed as verified by the county for the 2005-2006 valuation period. Specifically, RMVS selected 45 sales listed as verified but unqualified. Of the 45 sales checked, 42 gave reasons that were clear and supportable. The remaining 3 sales had insufficient documentation.

#### **Conclusions**

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

#### **Recommendations**

None

## **ECONOMIC AREA REVIEW AND EVALUATION**

### **Economic Area Narrative and Maps**

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

#### **Recommendations**

None.

## **NATURAL RESOURCES**

### **Earth and Stone Products**

#### **Methodology**

Under the guidelines of the Assessor's Reference Library (ARL), Volume 3, Natural Resource Valuation Procedures, the income approach was the primary method applied to find value for production of earth and stone products. The number of tons was multiplied by an economic location factor that represented the landlord's royalty. The landlord's share was multiplied by a recommended Hoskold factor to determine the actual value. The Hoskold factor was determined by the life of the reserves, or the lease. The value was primarily 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**

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

**Recommendations**

None

**VACANT LAND****Subdivision Discounting**

In 2006 subdivisions were reviewed. 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 more than 80 percent 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. In 2006, the county is currently applying the recommended methodology in ARL Volume 3 Chapter 4 page 7 in their subdivision discounting pertaining to the intervening year by either reducing the absorption period by one year prior to calculating present worth value for the modified absorption period or, if the number of sales within the approved plat since the current appraisal date is less than the absorption rate per year calculated for the plat, leaving the absorption period unchanged.

**Conclusions**

Douglas County has implemented proper procedures to adequately estimate value and expenses for subdivisions. Douglas County is also correctly applying the subdivision discounting procedures to qualifying subdivisions for the intervening year.

**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 pages 71 through 104 in accordance with the requirements of 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL

Volume 3, Section 7.79: 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. This county under audit has been reviewed for their procedures and adherence to guidelines when assessing and valuing possessory interest properties. The county under audit 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. Douglas County also is correctly and consistently applying 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 requirements are outlined as follows:

Use ARL Volume 5 including current discovery, classification, and documentation procedures, and including 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 50,000 population, RMVS 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 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.

Douglas County submitted their personal property written audit plan and was current for the 2006 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 \$2,500 actual value exemption status
- Accounts protested with substantial disagreement
- Random sample of accounts not audited during the last 5 years



RMVS 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.

Douglas County's median ratio is 1.01. 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 statistical compliance with SBOE requirements.

**Recommendations**

None

## **RMVS AUDITOR STAFF**

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**Katie Linné, Administrative Assistant**

## APPENDICES

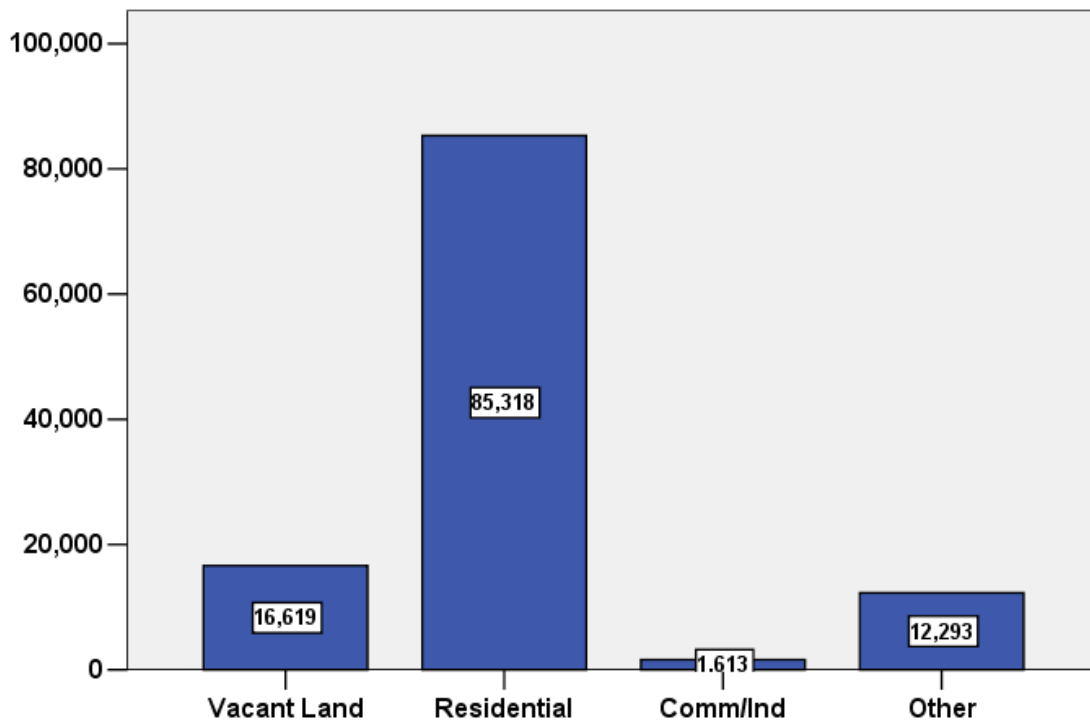
# STATISTICAL ANALYSIS FOR DOUGLAS COUNTY

2006

## I. OVERVIEW

Douglas County is an urban county located in the Front Range region of Colorado. The county has a total of 115,843 properties, according to data submitted by the county assessor's office in 2006. The following table provides a breakdown of property classes covered in this analysis:

**Property Class Distribution**



The vacant land class of properties was dominated by residential land. Vacant Residential Land (coded 0100) accounted for 86% of all vacant land parcels.

For residential improved properties, single family properties accounted for 94% of all residential improved parcels. No sub-class breakdowns were indicated. There were 8 economic areas indicated for residential properties. Each will be analyzed separately.

Commercial and industrial properties accounted for only 1,613 parcels.

## **II. SALES FILE**

The following sale analyses were based on the requirements of the 2006 Property Assessment Study, based on information provided by the Douglas County Assessor's Office. The assessor provided a sale file with 28,333 total sales. These sales spanned the period July 2002 to July 2004. The 18-month period between January 2003 and June 2004 will be used to test ratio compliance for each class.

Further data reductions will be described in each property class section.

## **III. RESIDENTIAL SALES RESULTS**

<b><u>Steps</u></b>	<b><u>Results</u></b>
1. Selected sales coded as "Q"	20,442 Sales
2. Selected improved sales (Status = "I")	18,598 Sales
3. Selected sale with subclass codes 1112 to 1230	18,468 Sales
4. Sales between 1/2003 and 6/2004	14,209 Sales

The following frequency table indicates the number of residential improved sales by economic area for Douglas County:

**Case Processing Summary**

		Count	Percent
Econarea	1	3855	27.2%
	2	5955	42.1%
	3	1292	9.1%
	4	2632	18.6%
	5	88	.6%
	6	76	.5%
	7	16	.1%
	8	243	1.7%
Overall		14157	100.0%
Excluded		52	
Total		14209	

The 14,157 sales with identified economic areas were analyzed using the required measurements for the level of assessment, as well as for the quality of the assessment. The analysis was broken down by economic area, as follows:

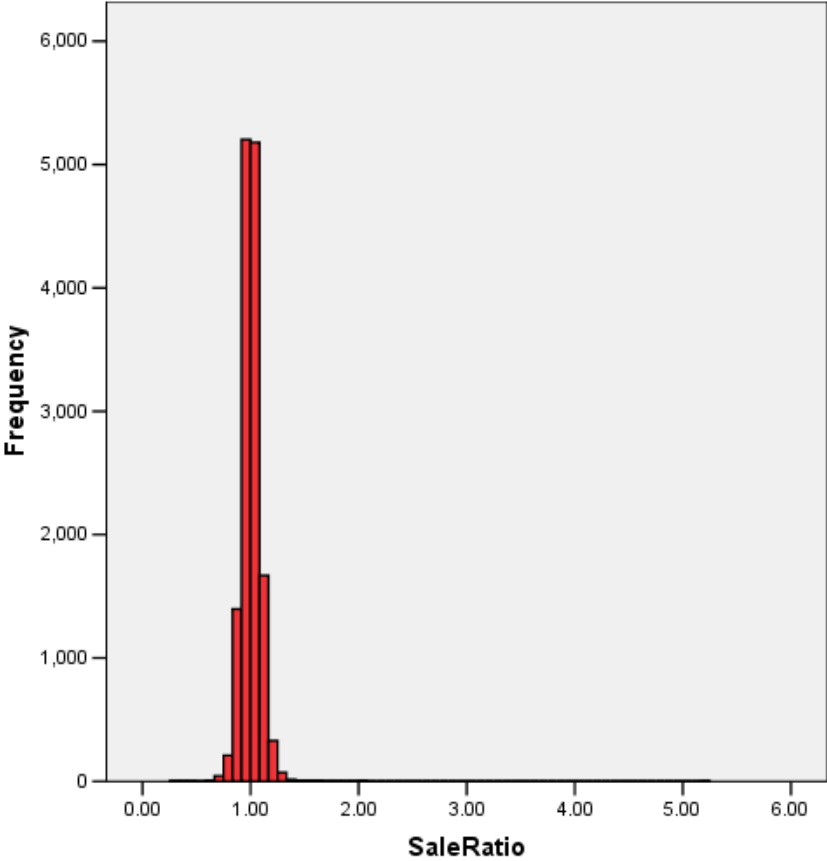
**Ratio Statistics for CURRTOT / TASP**

<b>Group</b>	<b>Median</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>
<b>1</b>	<b>1.001</b>	<b>1.005</b>	<b>.054</b>
<b>2</b>	<b>1.003</b>	<b>1.006</b>	<b>.060</b>
<b>3</b>	<b>.998</b>	<b>1.017</b>	<b>.083</b>
<b>4</b>	<b>1.002</b>	<b>1.005</b>	<b>.066</b>
<b>5</b>	<b>1.027</b>	<b>1.006</b>	<b>.102</b>
<b>6</b>	<b>.995</b>	<b>1.024</b>	<b>.150</b>
<b>7</b>	<b>1.068</b>	<b>1.078</b>	<b>.233</b>
<b>8</b>	<b>1.014</b>	<b>1.005</b>	<b>.087</b>
<b>Overall</b>	<b>1.002</b>	<b>1.007</b>	<b>.063</b>

**NOTE: Economic Area 7 has only 16 sales.**

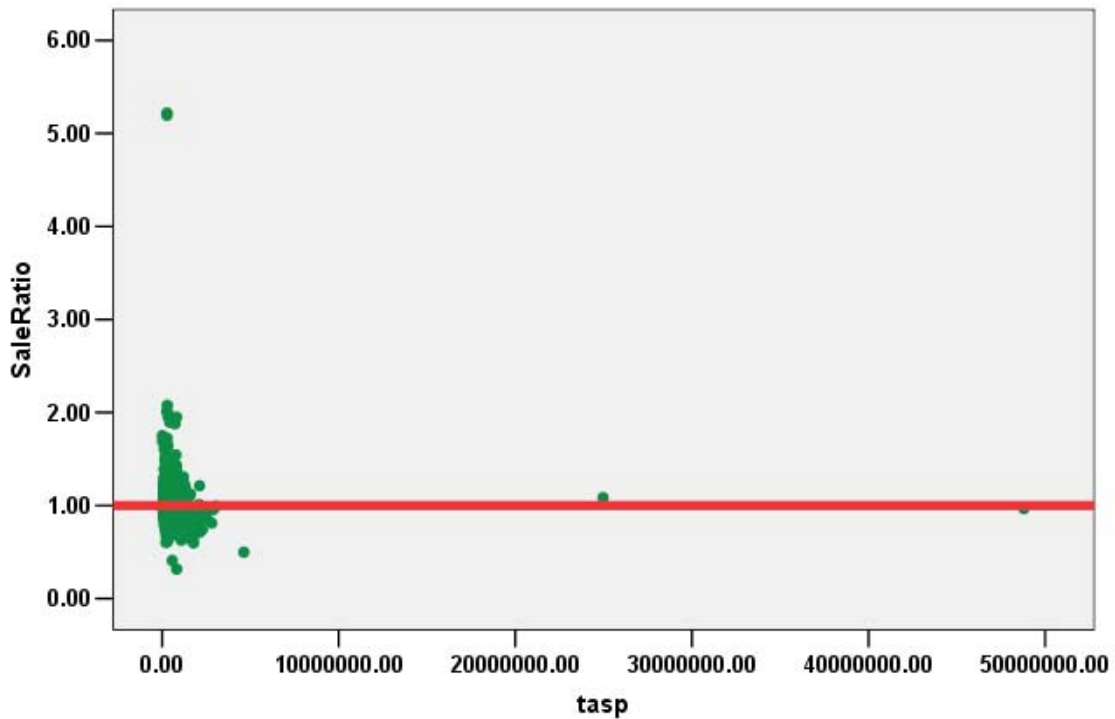
Please note that Economic Area 7 has only 16 sales and is not statistically significant. All of the economic areas with sufficient sales are in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE), as well as the overall ratio statistics. The following graphical exhibits describe further the sales ratio distribution for these properties:

### RESIDENTIAL SALE RATIO ANALYSIS



Mean =1.0062  
Std. Dev. =0.10027  
N =14,157

### Sale Ratio by Sale Price- Residential Properties



The above graphs indicate that the distribution of the sale ratios was within state mandated limits, and that there were no significant price related differential issues.

#### Residential Market Trend Analysis

To determine if market trending was adequately accounted for in the residential valuation for Douglas County, we regressed the sale ratios across the 24-month sale period for Douglas County, as follows:

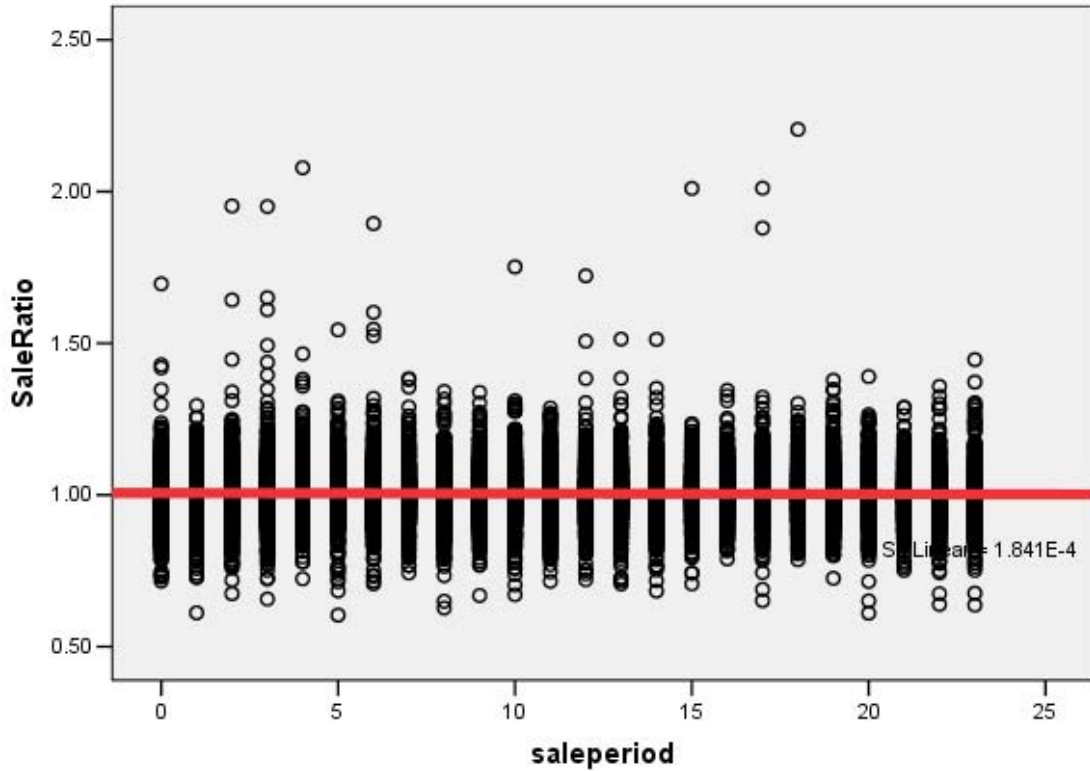


**Coefficients<sup>a</sup>**

Econarea	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	1	(Constant)	1.005	.002		528.134	.000
		saleperiod	.000	.000	-.039	-2.783	.005
2	1	(Constant)	1.005	.002		593.658	.000
		saleperiod	5.54E-005	.000	.005	.418	.676
3	1	(Constant)	.987	.036		27.276	.000
		saleperiod	.003	.003	.024	1.007	.314
4	1	(Constant)	1.008	.003		361.586	.000
		saleperiod	.000	.000	-.011	-.673	.501
5	1	(Constant)	1.078	.024		45.383	.000
		saleperiod	-.005	.002	-.267	-2.973	.004
6	1	(Constant)	1.042	.089		11.707	.000
		saleperiod	.002	.007	.030	.287	.775
7	1	(Constant)	1.201	.102		11.816	.000
		saleperiod	-.007	.008	-.194	-.861	.400
8	1	(Constant)	1.026	.013		76.968	.000
		saleperiod	-.001	.001	-.029	-.514	.607

a. Dependent Variable: SaleRatio

## Residential Market Trend Analysis



The above table indicates that overall there were no economic areas with significant market trend factors. The two economic areas with statistically significant market trends had trend amounts that were less than 1% per month.

## Sold/Unsold Analysis

In terms of the consistent treatment of residential sold and unsold properties, we examined the median actual values per square foot for each group. The following table indicates that both groups were valued in a consistent manner:

**Descriptives**

Sold		Statistic	Std. Error
BaseValue .00	Mean	146.3382	.13605
	95% Confidence Interval for Mean	Lower Bound	146.0716
		Upper Bound	146.6049
	5% Trimmed Mean	143.6243	
	Median	138.7077	
	Variance	1200.389	
	Std. Deviation	34.64663	
	Minimum	15.59	
	Maximum	300.00	
	Range	284.41	
	Interquartile Range	31.09	
	Skewness	1.391	.010
	Kurtosis	3.432	.019
	1.00	Mean	146.2481
95% Confidence Interval for Mean		Lower Bound	145.7221
		Upper Bound	146.7742
5% Trimmed Mean		143.1529	
Median		139.2398	
Variance		946.707	
Std. Deviation		30.76861	
Minimum		30.00	
Maximum		299.85	
Range		269.86	
Interquartile Range		26.48	
Skewness		1.844	.021
Kurtosis		5.334	.043

**Unsold**

**Sold**

#### IV. COMERCIAL/INDUSTRIAL SALE RESULTS

##### Commercial Sales

The following diagrams describe the data reduction process for commercial/industrial sales:

<u>Steps</u>	<u>Results</u>
1. Selected sales coded as “Q”	20,442 Sales
2. Selected improved sales (Status = “I”)	18,598 Sales
3. Selected sale with subclass codes 2112 to 3115	70 Sales
4. Sales between 1/2003 and 6/2004	55 Sales
5. Trimmed two extreme sales	53 Sales

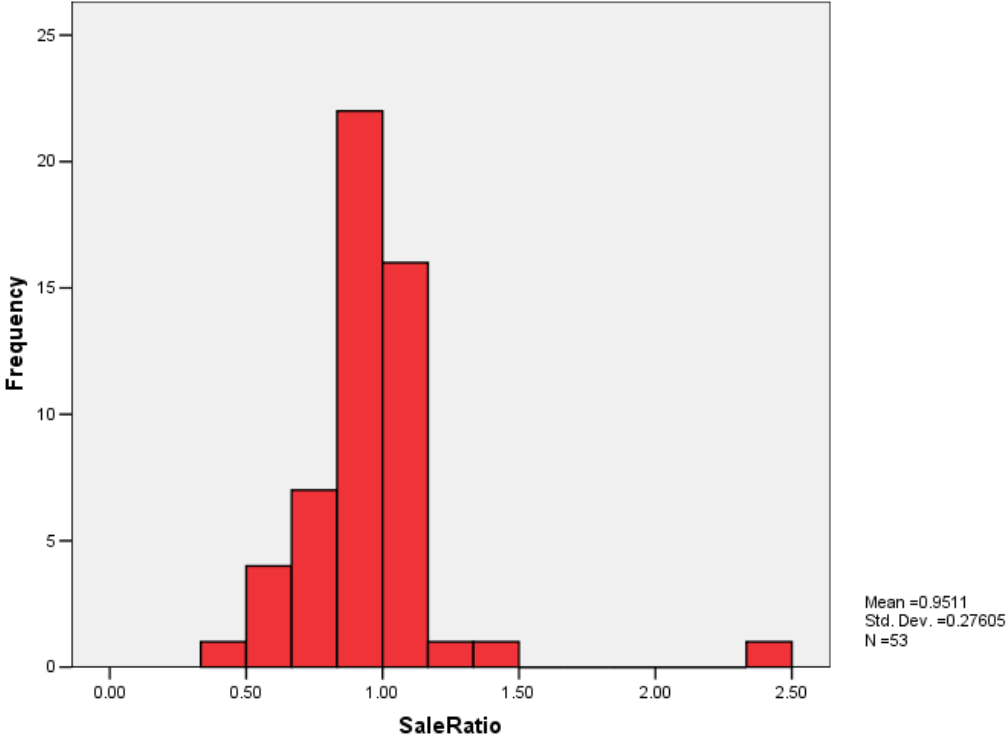
The following ratio analysis indicates the results:

##### **Ratio Statistics for CURRTOT / TASP**

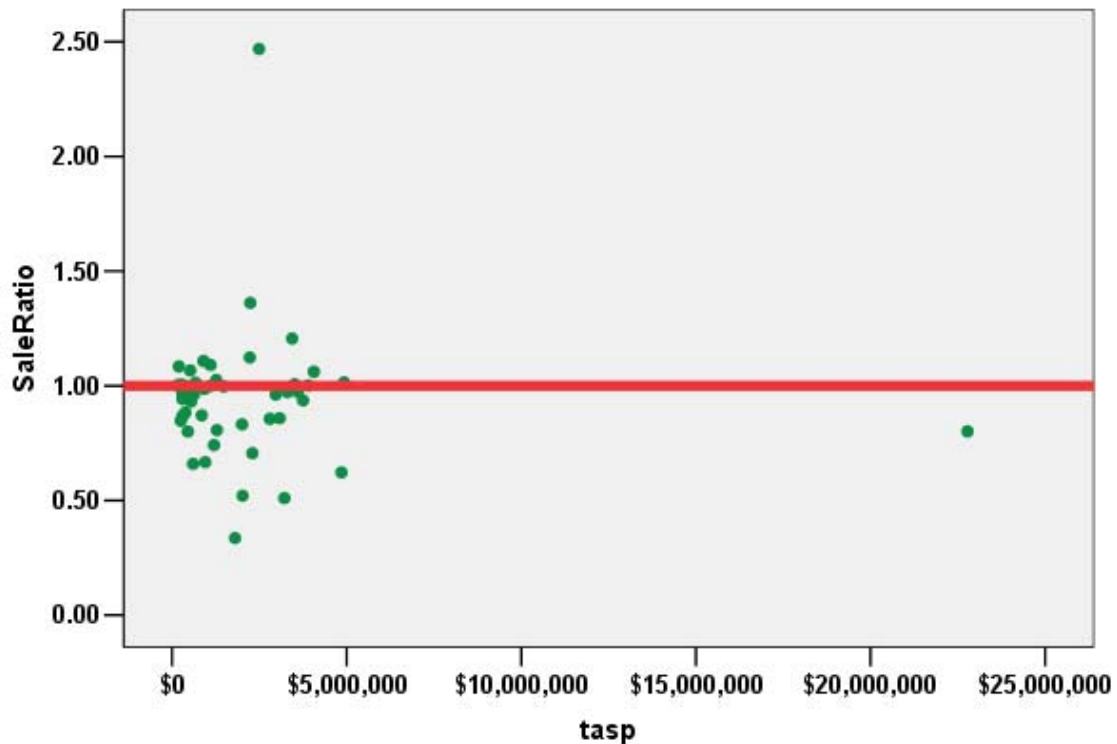
Median	<b>.980</b>
Price Related Differential	<b>1.027</b>
Coefficient of Dispersion	<b>.150</b>

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

### COMMERCIAL SALE RATIO ANALYSIS



### Sale Ratio by Sale Price- Commercial Properties



### Commercial Market Trend Analysis

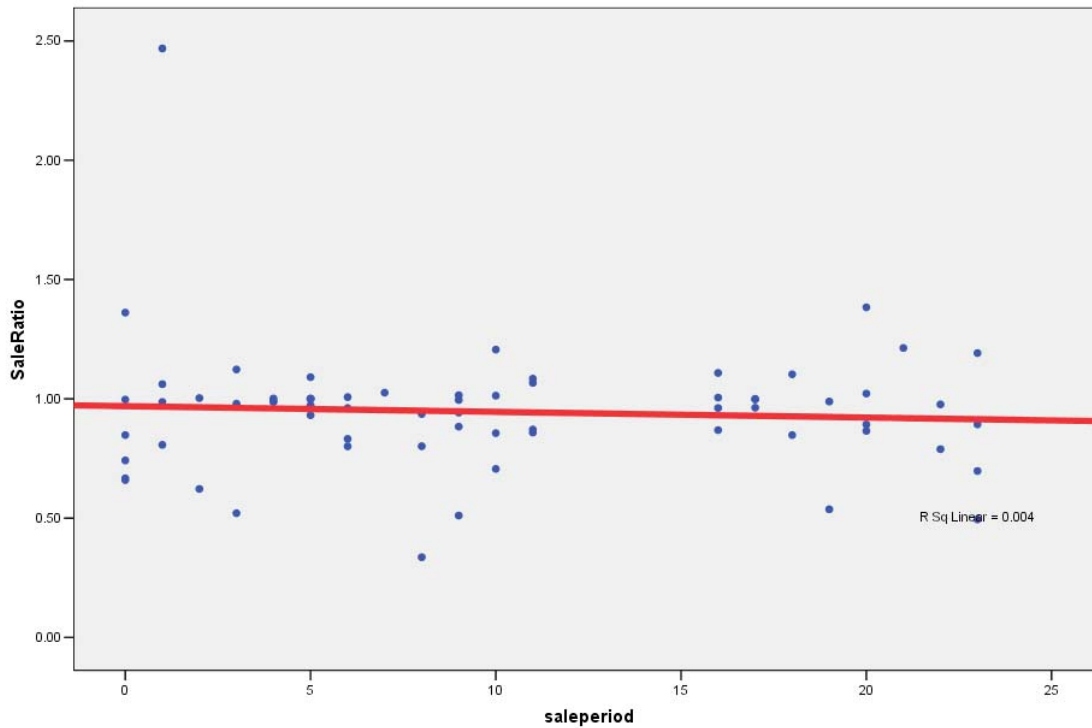
According to the Douglas County Assessor, there were not enough commercial properties by subclass to apply any significant market trending. As noted, there were only 53 commercial and industrial sales for Douglas County that occurred during the 18-month sale period, although a total of 70 sales were used during the 24-month period prior to June 30, 2004. As with the residential sale ratio analysis, we regressed the commercial/industrial sale ratios across the 24-month period prior to June 30, 2004, with the following results:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.969	.055		17.712	.000
	saleperiod	-.002	.004	-.066	-.537	.593

a. Dependent Variable: SaleRatio

**Commercial Market Trend Analysis**



The auditors concur with Douglas County that no sale trend should be applied.

**Sold/Unsold Analysis**

In terms of the consistent treatment of commercial and industrial sold and unsold properties, we compared the median change in value (per square foot) between 2004 and 2006 for each group. We broke the analysis down by subclass and economic area to further stratify the comparison, with the following results:

Group	No. Props	Median	Mean	Minimum	Maximum
UNSOLD	1,111	1.0626	1.0937	.75	1.50
SOLD	53	1.1397	1.1381	.79	1.50

The above indicates that overall, Douglas County has valued sold and unsold commercial/industrial properties in a consistent manner.

## V. VACANT LAND SALE RESULTS

### Steps

### Results

- |   |              |
|---|--------------|
| 1. Selected sales coded as “Q”  | 20,442 Sales |
| 2. Selected improved sales (Status = “V”) and Previous Improved Value = 0 | 808 Sales    |
| 3. Selected sale with subclass codes LT 4000                              | 722 Sales    |
| 4. Sales between 1/2003 and 6/2004  | 638 Sales    |

The **638** vacant land sales were analyzed using the required measurements for the level of assessment, as well as for the quality of the assessment. The following ratio analysis indicates the results:

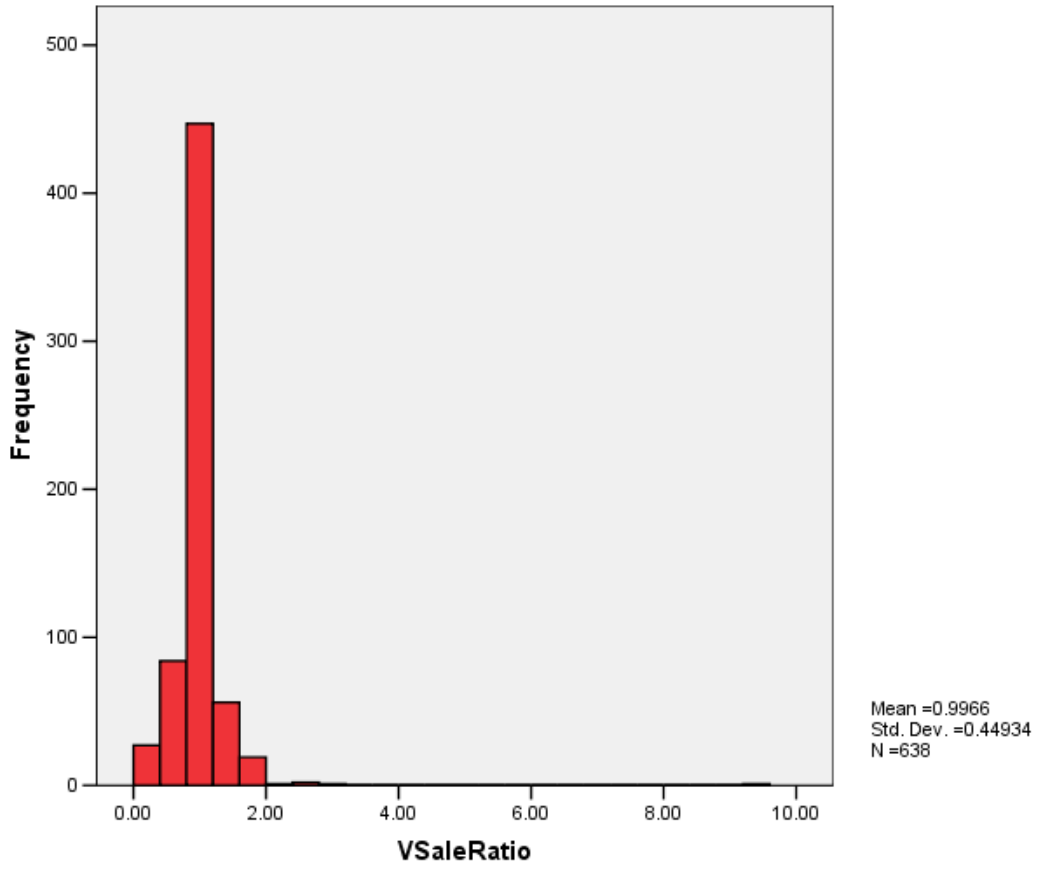
#### **OVERALL** Ratio Statistics for CURRLND / VTASP

Median	<b>.983</b>
Price Related Differential	<b>1.047</b>
Coefficient of Dispersion	<b>.206</b>

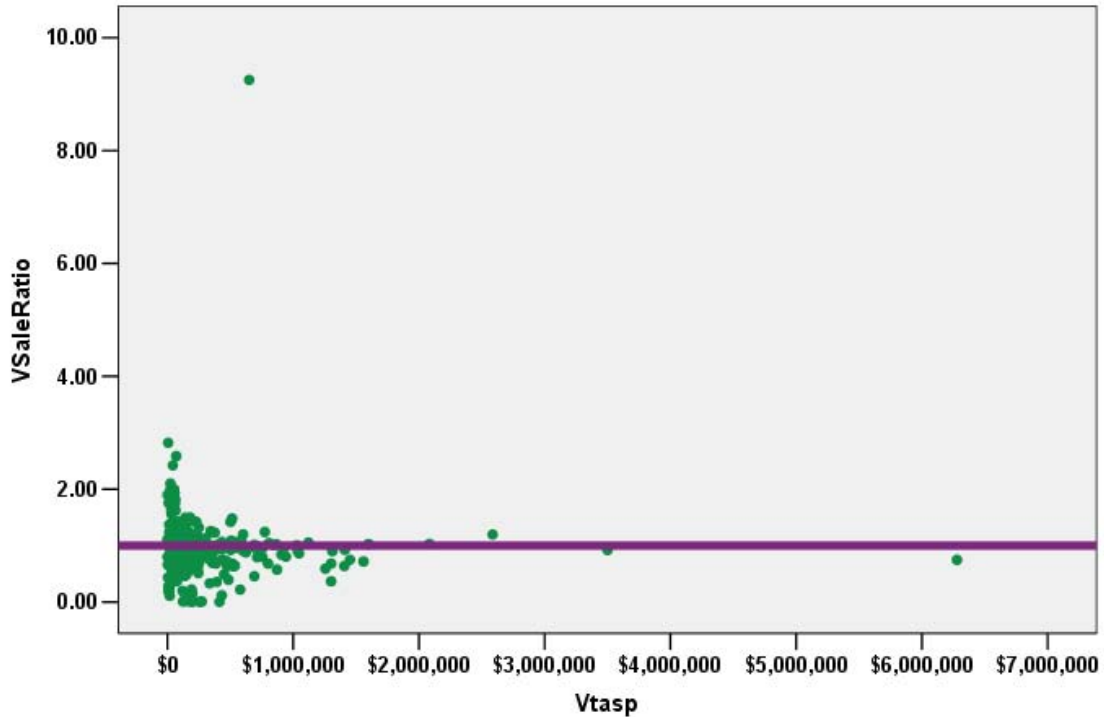
The following histogram and scatter plot describe the sales ratio distribution for these vacant land sales:



### VACANT LAND SALE RATIO ANALYSIS



### Sale Ratio by Sale Price- Vacant Land Properties



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

### Vacant Land Market Trend Analysis

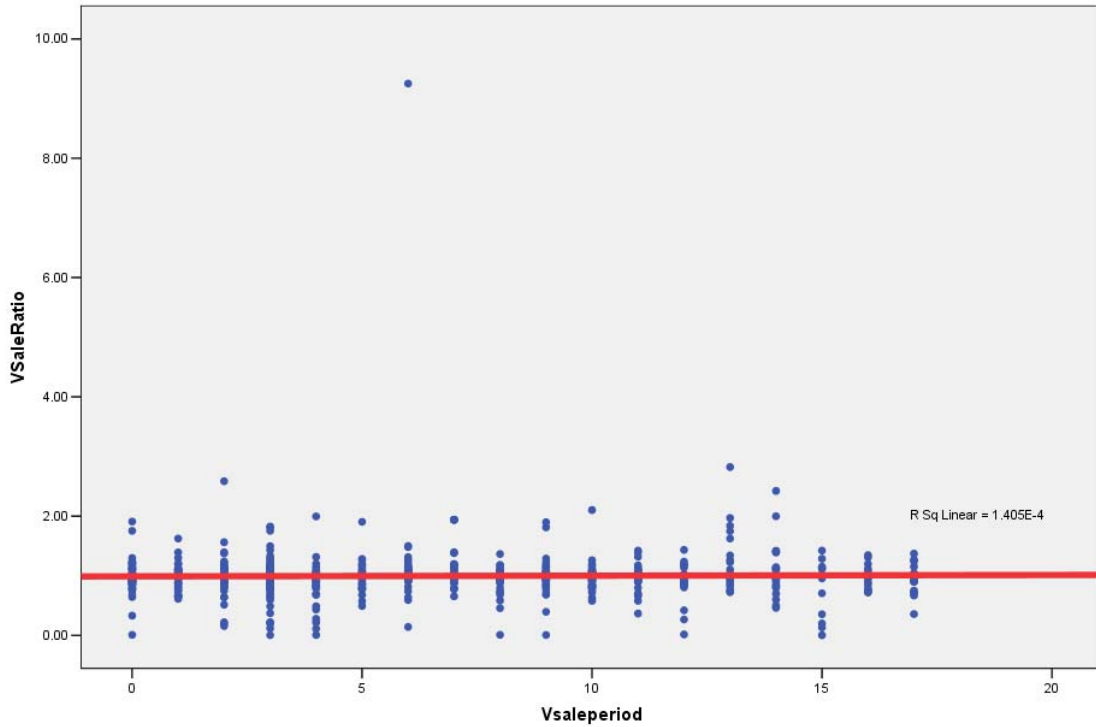
Vacant land sales were also adjusted over the 24-month sale period. We verified that Douglas County adequately accounted for market trending by analyzing the sale ratios across the sale period. The following analysis shows that no significant market trend factor was present for the 18-month sale period:

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

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.989	.030		33.105	.000
	Vsaleperiod	.001	.004	.012	.299	.765

a. Dependent Variable: VSaleRatio

### Vacant Land Market Trend Analysis



### Sold/Unsold Analysis

In terms of the consistent treatment of vacant land sold and unsold properties, we examined the median percent change in value between these two groups. The following table compares these groups:

Group	N	Median	Mean
Unsold	6,539	1.1000	1.1180
Sold	518	1.1000	1.1209

### VII. CONCLUSIONS

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