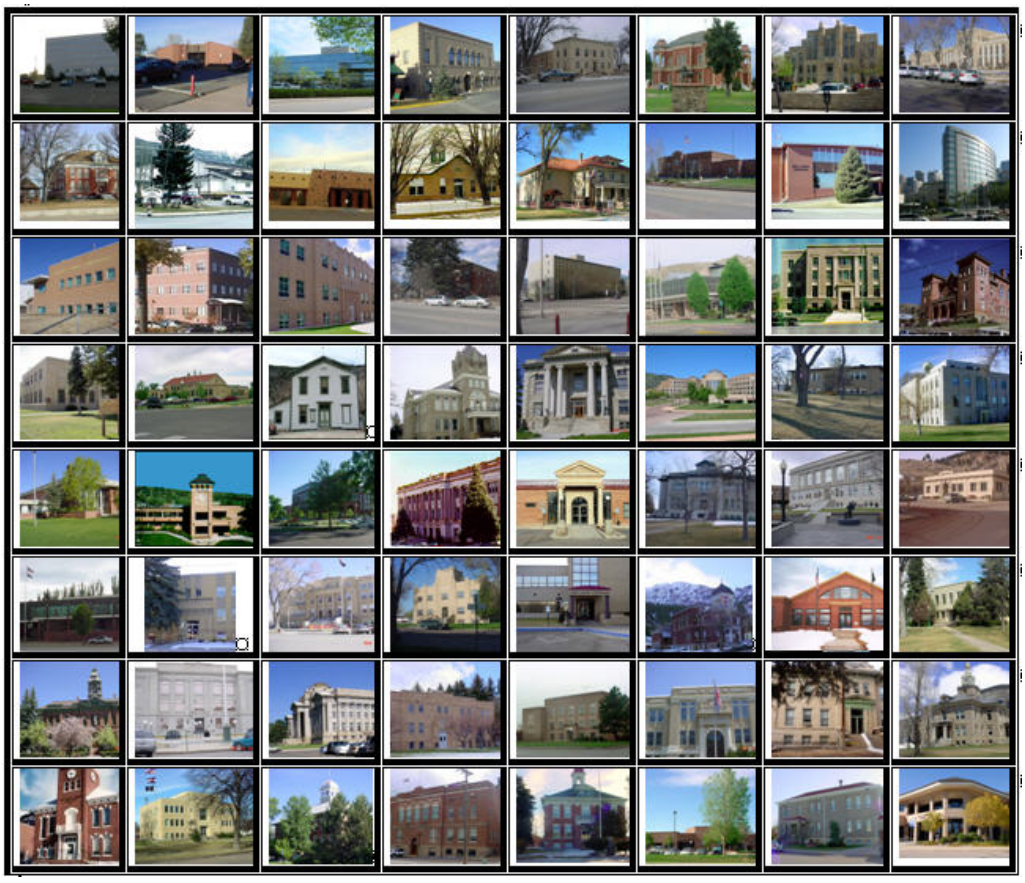
Boulder County Colorado

2012
BOULDER COUNTY
PROPERTY ASSESSMENT
STUDY



WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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September 15, 2012

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

RE: Final Report for the 2012 Colorado Property Assessment Study

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2012 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.

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

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INTRODUCTION

Colorado

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

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

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

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

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

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

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

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

Wildrose Audit has completed the Property Assessment Study for 2012 and is pleased to report its findings for Boulder County in the following report.

REGIONAL/HISTORICAL SKETCH OF BOULDER COUNTY

Regional Information

Boulder 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

Boulder County has a population of approximately 294,567 people with 396.46 people per square mile, according to the U.S. Census Bureau's 2010 census data. This represents a 1.12 percent change from the 2000 Census.

Boulder County was one of the original 17 counties created by the Territory of Colorado on January 11,1861. The county was named for Boulder City and Boulder Creek, so named because of the abundance of boulders in the area. Boulder County retains essentially the same borders as in 1861, although a small portion of its southeastern corner became part of the City and County of Broomfield in 2001.

In the early to mid 1800s, the nomadic Southern Arapaho Native American tribe frequently wintered at the base of the foothills in the Boulder area. Chief Niwot and his band called the site their home. Other nomadic tribes included the Utes, Cheyennes, Comanches, and Sioux.

The first recorded European settlers in the area were gold prospectors who arrived in 1858, when Boulder was part of the Nebraska Territory (The former boundary between Nebraska and Kansas territories is the present Baseline Road in Boulder). The "Boulder City Town Company" was founded on February 10, 1859. Boulder's first school house was built in 1860, followed by the creation of the Colorado Territory in 1861. In 1871 'Boulder City' was incorporated. In 1873 the railroad was extended to Boulder and, in 1890, the Boulder Railroad Depot was constructed to serve as a station for the Union Pacific Railroad. In 1876 Colorado was granted statehood, and in that same year the University of Colorado at Boulder opened.

Mining gold, silver, and coal continued to be a prominent part of the local economy until the mid 1900s. A coal miners strike lasted from 1910 to 1915, causing a military presence in nearby Louisville. Mining's relevance in the local economy declined in the 1940s, when the city began actively recruiting clean industry, such as the National Bureau of Standards, which today is the National Institute of Standards and Technology, home of the atomic clock. *(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 2009 and June 2010. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2010 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 Boulder County are:

Boulder County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	92	0.981	1.032	8.1	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	5,979	0.996	1.014	7.5	Compliant
Vacant Land	44	1.000	1.025	12.5	Compliant

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	.996	1.008	.049
2	.999	1.037	.112
3	1.025	.996	.112
4	.994	1.007	.059
5	1.003	1.017	.101
30	.986	1.006	.053
31	.999	1.037	.067
32	.971	1.006	.069
33	.982	1.017	.080
40	.984	1.019	.063
Overall	.996	1.014	.075

After applying the above described methodologies, it is concluded from the sales ratios that Boulder County is in compliance with SBOE, DPT, and Colorado State Statute valuation guidelines.

Recommendations

None

Random Deed Analysis

An additional analysis was performed as part of the Ratio Analysis. Ten randomly selected deeds with documentary fees were obtained from the Clerk and Recorder. These deeds were for sales that occurred from January 1, 2009 through June 30, 2010. These sales were then checked for inclusion on the Assessor's qualified or unqualified database.

Conclusions

After comparing the list of randomly selected deeds with the Assessor's database, Boulder County has accurately transferred sales data from the recorded deeds to the qualified or unqualified database.

Recommendations

None

TIME TRENDING VERIFICATION

Methodology

While we recommend that counties use the inverted ratio regression analysis method to account for market (time) trending, some counties have used other IAAO-approved methods, such as the weighted monthly median approach. We are not auditing the methods used, but rather the results of the methods used. Given this range of methodologies used to account for market trending, we concluded that the best validation method was to examine the sale ratios for each class across the appropriate sale period. To be specific, if a county has considered and adjusted correctly for market trending, then the sale ratios should remain stable (i.e. flat) across the sale period. If a residual market trend is detected, then the county may or may not have addressed market trending adequately, and a further examination is warranted. This validation methodology also considers the number of sales and the length of the sale period. Counties with few sales across the sale period were carefully examined to determine if the statistical results were valid.

Conclusions

After verification and analysis, it has been determined that Boulder County has complied with the statutory requirements to analyze the effects of time on value in their county. Boulder 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

Boulder 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 2010 and 2012 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

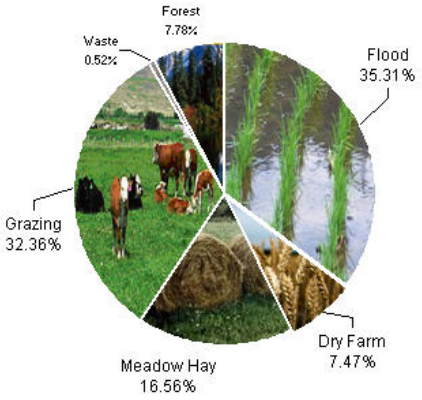
After applying the above described methodologies, it is concluded that Boulder County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

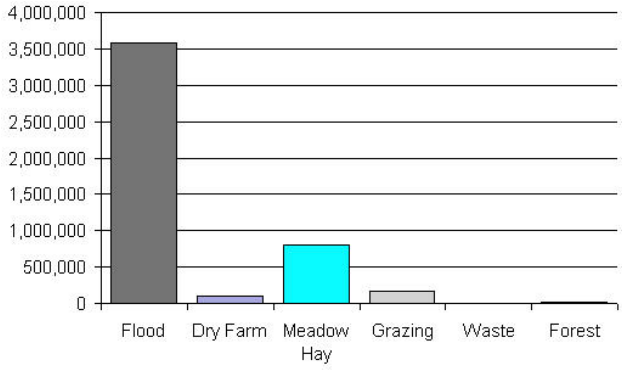
None

AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax Administrator (PTA), were applied properly. (See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

An analysis of the agricultural land data indicates an acceptable appraisal of this property type. Directives, commodity prices and expenses provided by the PTA were properly applied. County yields compared favorably to those published by Colorado Agricultural Statistics. Expenses used by the county were allowable expenses and were in an acceptable range. Grazing lands carrying capacities were in an acceptable range. The data analyzed resulted in the following ratios:

Boulder County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4117	Flood	24,539	146.00	3,578,740	3,713,022	0.96
4127	Dry Farm	5,193	19.00	99,569	107,532	0.93
4137	Meadow Hay	11,507	70.00	802,193	802,193	1.00
4147	Grazing	22,493	7.00	162,065	162,065	1.00
4177	Forest	5,404	2.00	11,424	11,424	1.00
4167	Waste	363	2.00	586	586	1.00
Total/Avg		**69,499**	**67.00**	**4,654,576**	**4,796,822**	**0.97**

Recommendations

None

Agricultural Outbuildings

Methodology

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

Conclusions

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

Recommendations

None

Agricultural Land Under Improvements

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.

Conclusions

Boulder 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 2012 for Boulder County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 45 sales listed as unqualified.

All of the sales in the unqualified sales sample had reasons that were clear and supportable.

Conclusions

Boulder County appears to be doing an excellent job of verifying their sales. WRA agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

Boulder County has submitted a written narrative describing the economic areas that make up the county's market areas. Boulder 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 Boulder County has adequately identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

Recommendations

None

NATURAL RESOURCES

Earth and Stone Products

Methodology

Under the guidelines of the Assessor's Reference Library (ARL), Volume 3, Natural Resource Valuation Procedures, the income approach was applied to determine value for production of earth and stone products. The number of tons was multiplied by an economic royalty rate determined by the Division of Property Taxation to determine income. The income was multiplied by a recommended Hoskold factor to determine the actual value. The Hoskold factor is determined by the life of the reserves or the lease. Value is based on two variables: life and tonnage. The operator determines these since there is no other means to obtain production data through any state or private agency.

Conclusions

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

Recommendations

None

Producing Oil and Gas Procedures

Methodology

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

STATUTORY REFERENCES

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

Actual value determined - when.

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

§ 39-1-103, C.R.S.

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

Valuation:

Valuation for assessment.

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

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

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

§ 39-7-102, C.R.S.

Conclusions

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

Recommendations

None

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2012 in Boulder County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year was accomplished by reducing the absorption period by one year. In instances where the number of sales within an approved plat was less than the absorption rate per year calculated for the plat, the absorption period was left unchanged.

Conclusions

Boulder 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.

Boulder County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural, commercial and ski area possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

Conclusions

Boulder 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

Boulder 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.

Boulder 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
- 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
- Secretary of State Business Search
- Leasing Company Information

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.

Boulder County submitted their personal property written audit plan and was current for the 2012 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 $5,500 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement
- Taxpayer requests
- Accounts filed in summary rather than itemized format

Boulder 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

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

Recommendations

None

WILDROSE AUDITOR STAFF

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

Steve Kane, *Audit Statistician*

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

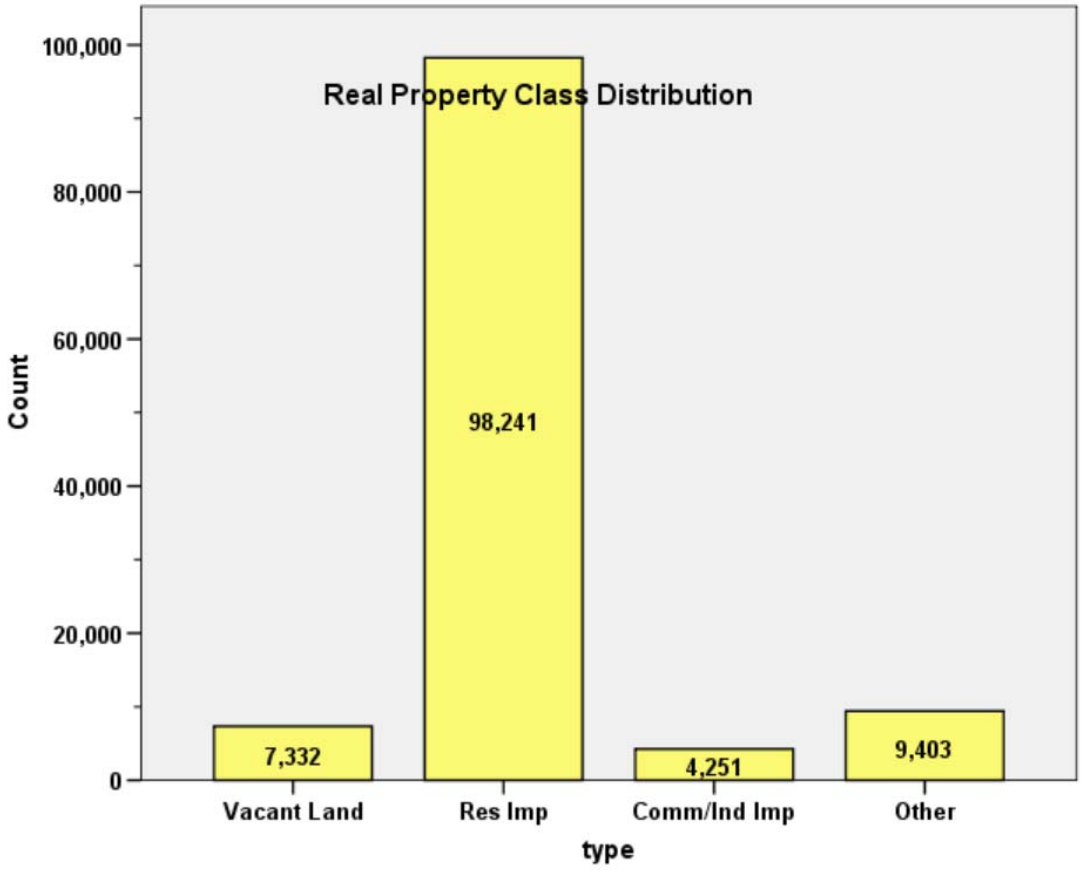
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT
FOR BOULDER COUNTY
2012

I. OVERVIEW

Boulder County is an urban county located along Colorado's front range. The county has a total of 119,227 real property parcels, according to data submitted by the county assessor's office in 2012. 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, 1100 and 1112) accounted for 73.8% of all vacant land parcels.

For residential improved properties, single family properties accounted for 82.6% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3.6% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2012 Colorado Property Assessment Study. Information was provided by the Boulder Assessor's Office in April 2012. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

The following steps were taken to analyze the residential sales:

1. All sales	30,863
2. Qualified sales	8,387
3. Improved sales	8,169
4. Select residential sales only	8,004
5. Sale between January 2009 and June 2010	5,979

The sales ratio analysis was analyzed as follows:

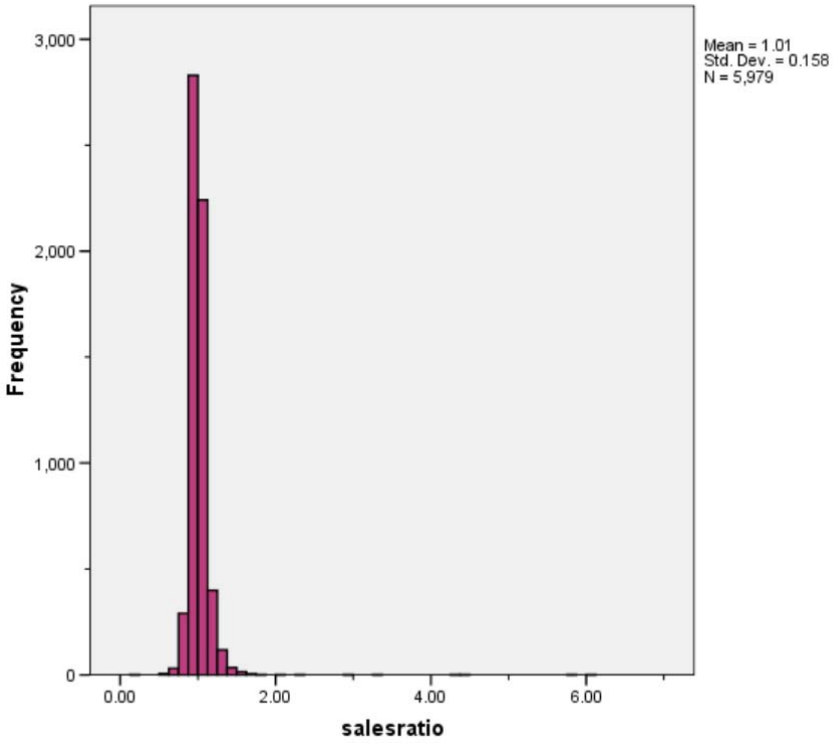
Case Processing Summary

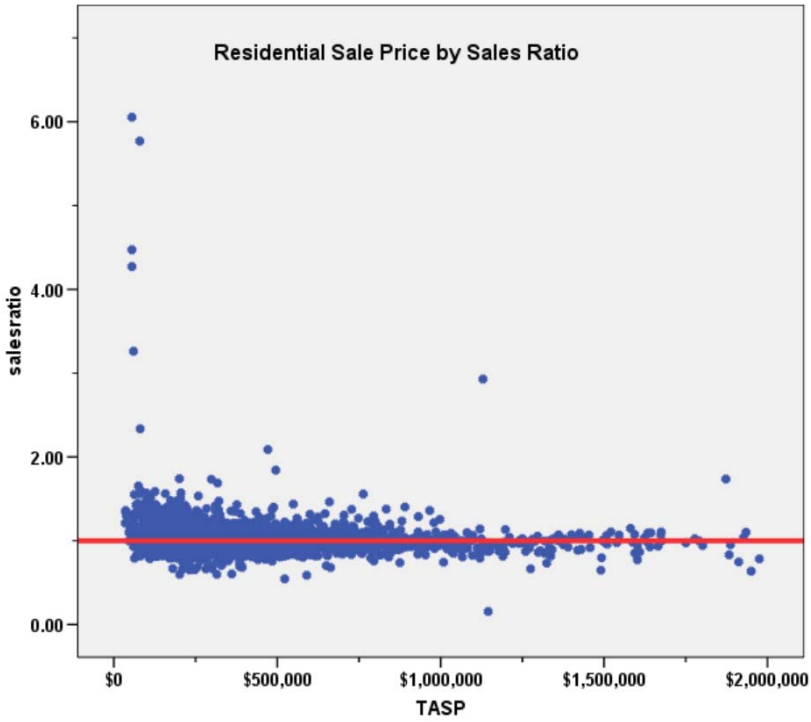
		Count	Percent
ECONAREA	1	1057	17.7%
	2	278	4.7%
	3	187	3.1%
	4	1451	24.3%
	5	1582	26.5%
	30	386	6.5%
	31	449	7.5%
	32	362	6.1%
	33	195	3.3%
	40	30	.5%
Overall		5977	100.0%
Excluded		2	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	.996	1.008	.049
2	.999	1.037	.112
3	1.025	.996	.112
4	.994	1.007	.059
5	1.003	1.017	.101
30	.986	1.006	.053
31	.999	1.037	.067
32	.971	1.006	.069
33	.982	1.017	.080
40	.984	1.019	.063
Overall	.996	1.014	.075

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





NOTE: Extreme values omitted for clarity of XY chart

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

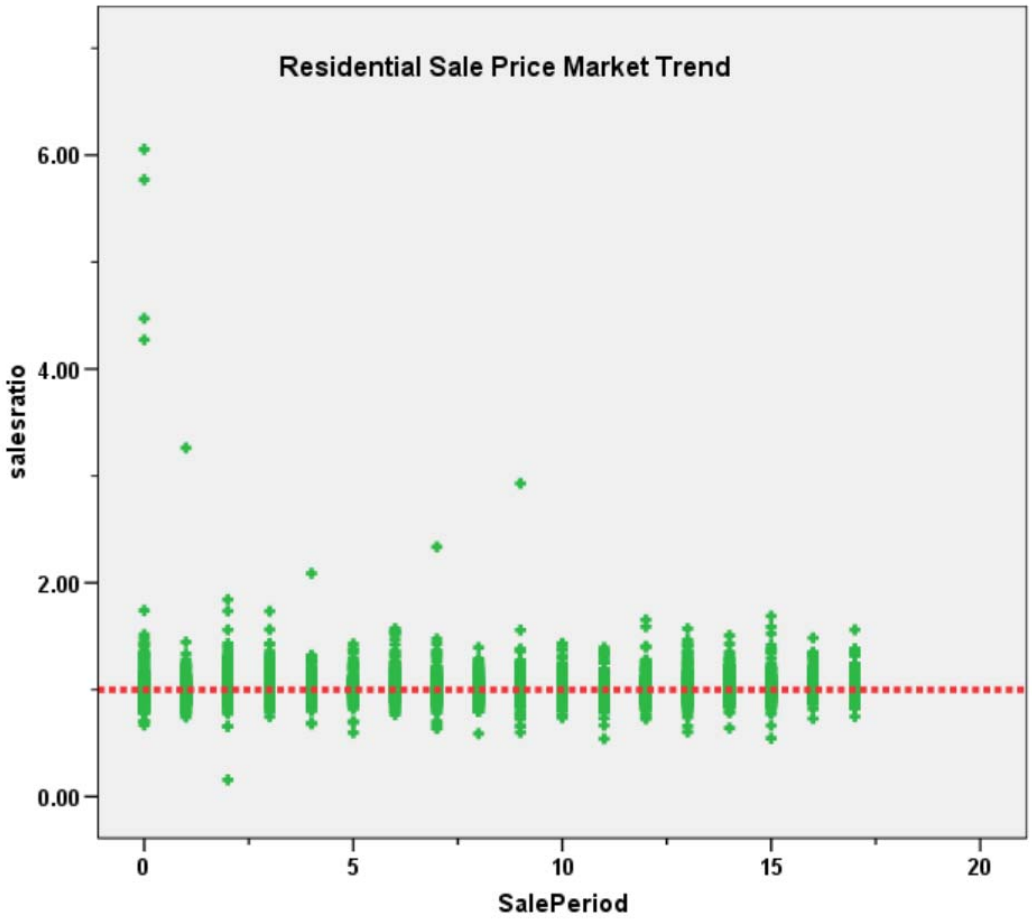
Residential Market Trend Analysis

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

Coefficients[a]

ECONAREA	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	1	(Constant)	.998	.004		232.601	.000
		SalePeriod	.000	.000	.015	.499	.618
2	1	(Constant)	1.006	.022		45.224	.000
		SalePeriod	.001	.002	.028	.469	.639
3	1	(Constant)	1.060	.025		42.113	.000
		SalePeriod	.001	.003	.013	.180	.857
4	1	(Constant)	.989	.004		242.192	.000
		SalePeriod	.001	.000	.076	2.913	.004
5	1	(Constant)	1.043	.011		94.071	.000
		SalePeriod	-.001	.001	-.019	-.746	.456
30	1	(Constant)	.989	.007		139.564	.000
		SalePeriod	5.947E-5	.001	.004	.080	.936
31	1	(Constant)	.990	.008		120.848	.000
		SalePeriod	.000	.001	.020	.418	.676
32	1	(Constant)	.988	.010		103.782	.000
		SalePeriod	-3.005E-5	.001	-.002	-.029	.977
33	1	(Constant)	1.003	.018		56.556	.000
		SalePeriod	-.001	.002	-.025	-.354	.724
40	1	(Constant)	.986	.034		29.040	.000
		SalePeriod	-.001	.004	-.030	-.160	.874

a. Dependent Variable: salesratio



There was no significant residual market trending present in the sale ratio data for most economic areas; the one economic area with a statistically significant residual trend was not significant in terms of the magnitude of those trends. We therefore concluded that the assessor has adequately addressed market trending in the valuation of residential properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median actual value per square foot for 2012 between each group. The data was analyzed both as a whole and broken down by economic area, as follows:

Group	N	Median	Mean
Unsold	92,158	$200	$330
Sold	5,978	$198	$224

ECONAREA	Group	N	Median Val/SF	Mean Val/SF
1	**Unsold**	19,457	$324.58	$378.30
	Sold	1,056	$319.10	$335.03

2	**Unsold**	8,017	$224.24	$505.87
	Sold	278	$233.00	$245.65
3	**Unsold**	4,998	$235.40	$346.77
	Sold	187	$238.31	$262.19
4	**Unsold**	21,288	$197.04	$376.03
	Sold	1,451	$196.25	$202.62
5	**Unsold**	24,646	$147.57	$186.68
	Sold	1,582	$150.10	$156.91
30	**Unsold**	3,569	$203.96	$213.34
	Sold	386	$203.48	$216.25
31	**Unsold**	3,737	$271.42	$282.38
	Sold	449	$317.69	$335.68
32	**Unsold**	3,268	$161.45	$162.99
	Sold	362	$166.64	$168.09
33	**Unsold**	1,816	$121.14	$124.82
	Sold	195	$127.31	$134.28
40	**Unsold**	976	$167.77	$2,009.52
	Sold	30	$167.76	$212.08

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

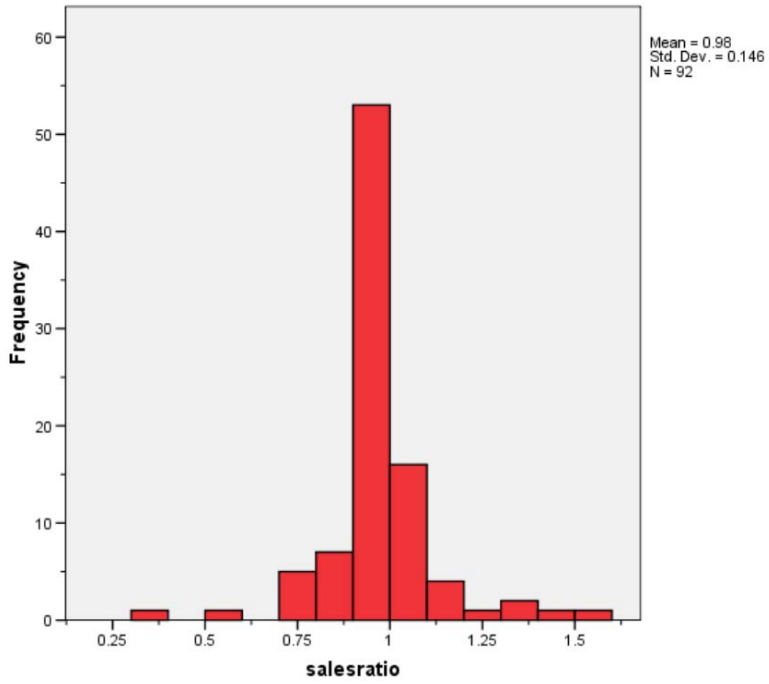
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

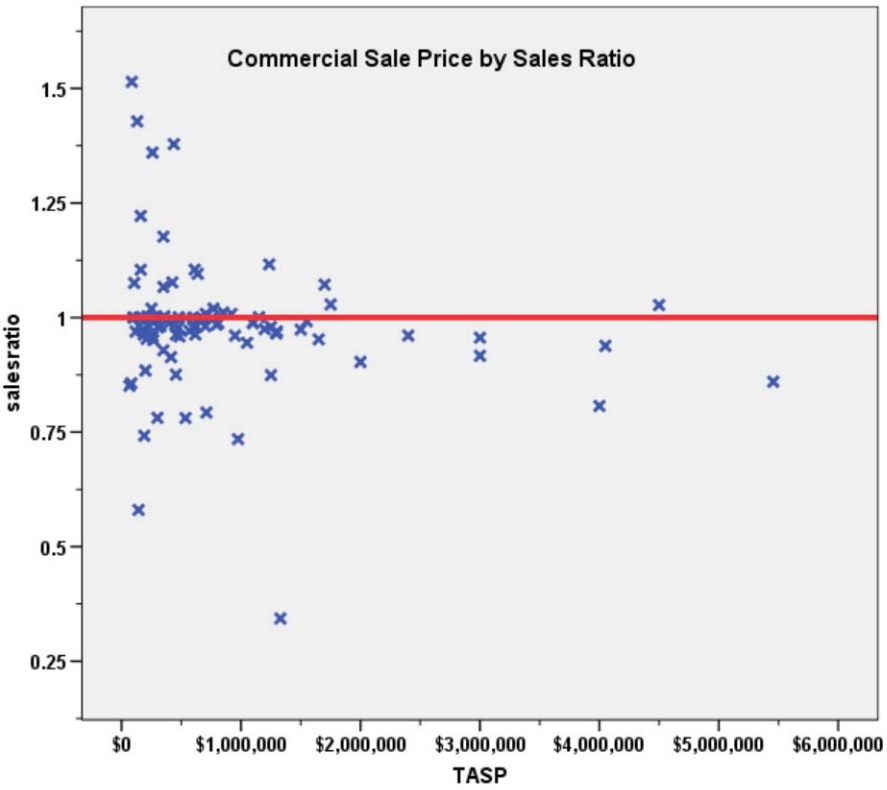
1. All sales	30,863
2. Qualified sales	8,387
3. Improved sales	8,169
4. Select commercial/industrial sales only	146
5. Sales between January 1, 2009 and June 30, 2010	92

The sales ratio analysis was analyzed as follows:

Median	**0.981**
Price Related Differential	**1.032**
Coefficient of Dispersion	**.081**

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


Mean = 0.98
Std. Dev. = 0.146
N = 92
Frequency
salesratio
0
10
20
30
40
50
60
0.25
0.5
0.75
1
1.25
1.5


Commercial Sale Price by Sales Ratio
salesratio
TASP
0.25
0.5
0.75
1
1.25
1.5
$0
$1,000,000
$2,000,000
$3,000,000
$4,000,000
$5,000,000
$6,000,000

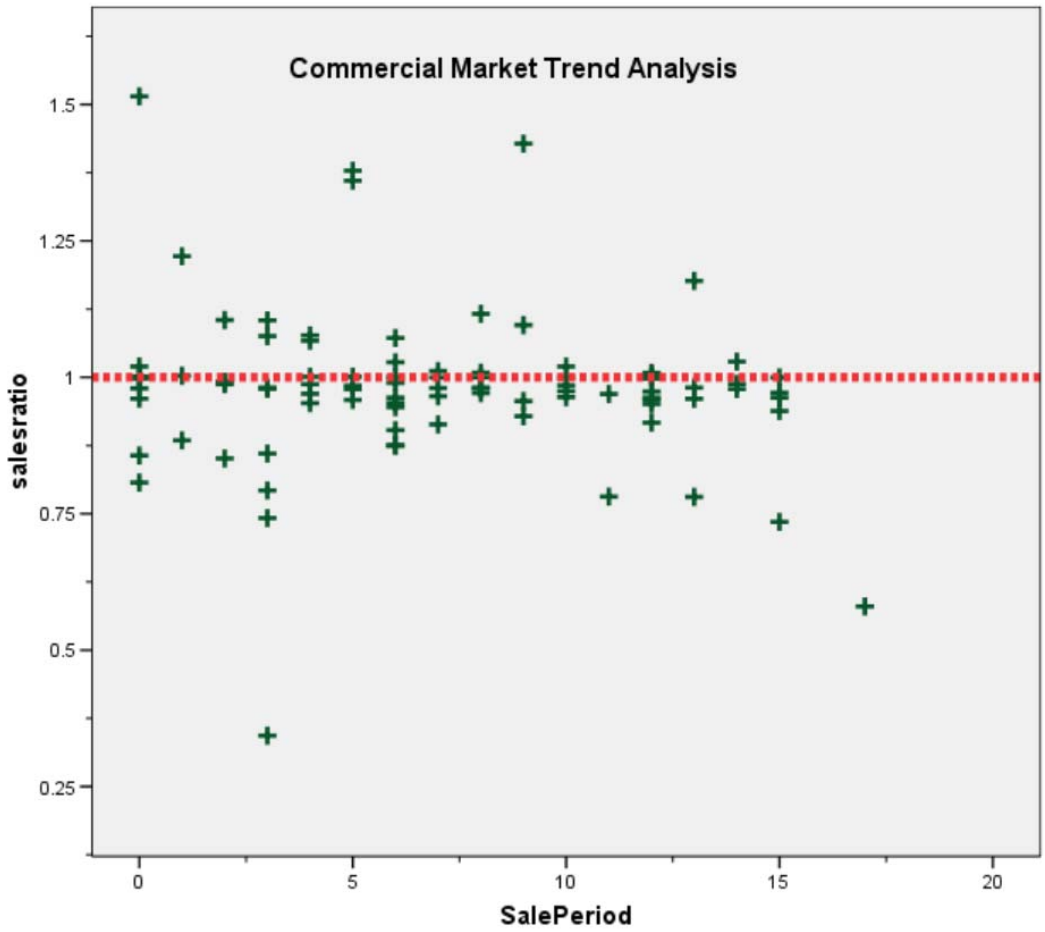
Commercial/Industrial Market Trend Analysis

The assessor did apply market trend adjustments to the commercial/industrial dataset. The 92 commercial/industrial sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.007	.027		37.198	.000
	SalePeriod	-.004	.003	-.121	-1.153	.252

a. Dependent Variable: salesratio



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

Sold/Unsold Analysis

We compared the median value per square foot between sold and unsold commercial properties by subclass to determine if they were valued consistently, as follows:

SubClass	Group	No. Props	Median Val/SF	Mean Val/SF
2212	**Unsold**	566	$115.10	$152.02
	Sold	14	$154.58	$181.43
2220	**Unsold**	497	$134.85	$159.52
	Sold	4	$146.41	$148.85
2230	**Unsold**	84	$117.13	$133.09
	Sold	3	$162.37	$163.39
2234	**Unsold**	200	$205.66	$206.32
	Sold	5	$229.75	$236.33
2237	**Unsold**	93	$165.00	$174.31
	Sold	4	$287.42	$272.34
2238	**Unsold**	98	$100.33	$130.53
	Sold	3	$67.18	$114.25
2245	**Unsold**	625	$235.56	$243.74
	Sold	24	$301.15	$316.17
3215	**Unsold**	318	$67.77	$73.21
	Sold	13	$82.80	$84.10
3230	**Unsold**	238	$95.00	$86.12
	Sold	4	$95.00	$97.75

We also compared the median and mean change in value between 2010 and 2012 for sold and unsold commercial properties, as follows:

Group	No. Sales	Median	Mean
Unsold	4,093	0.98	1.07
Sold	92	1.00	1.09

Overall, we concluded that sold and unsold properties by subclass were values consistently.

V. VACANT LAND SALE RESULTS

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

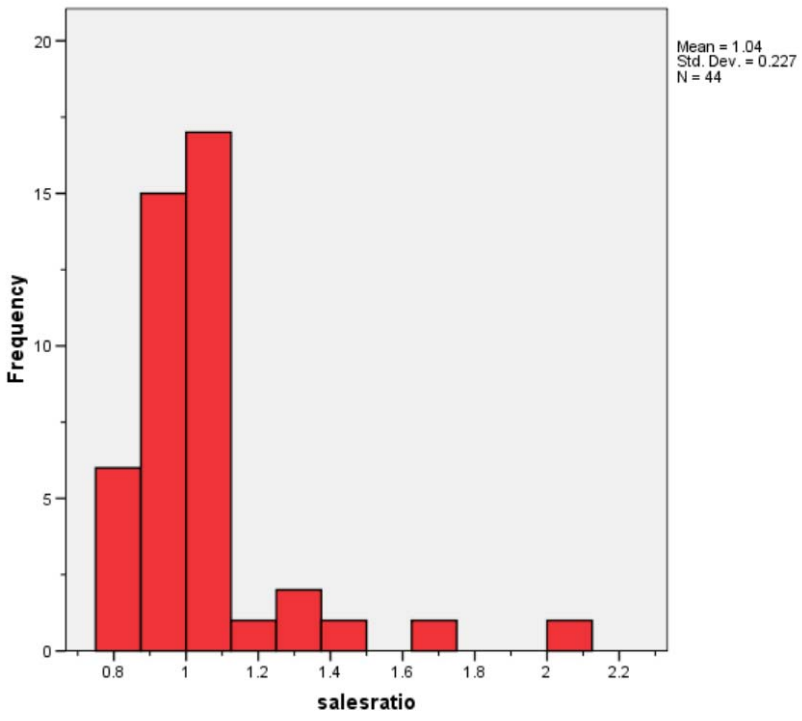
1. All sales	30,863
2. Qualified sales	8,387
3. Vacant land sales	93
4. Residential & commercial/industrial vacant land sales	63
5. Sales between January 1, 2009 and June 30, 2010	44

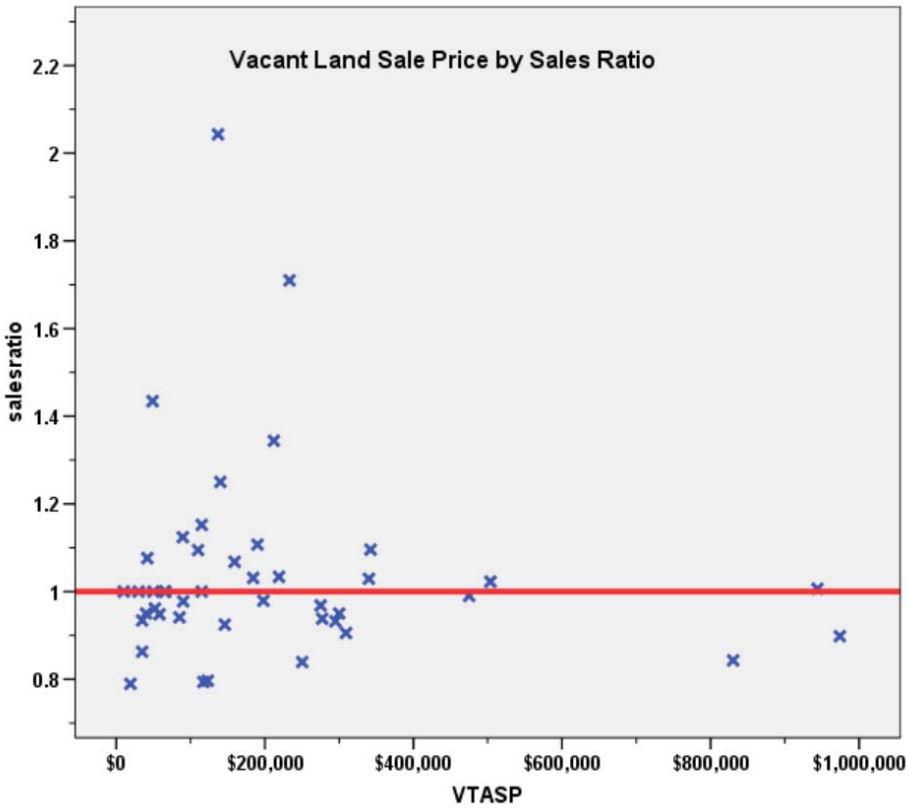
The sales ratio analysis was analyzed as follows:

Ratio Statistics for currInd / Vtasp

Median	**1.000**
Price Related Differential	**1.025**
Coefficient of Dispersion	**0.125**

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.

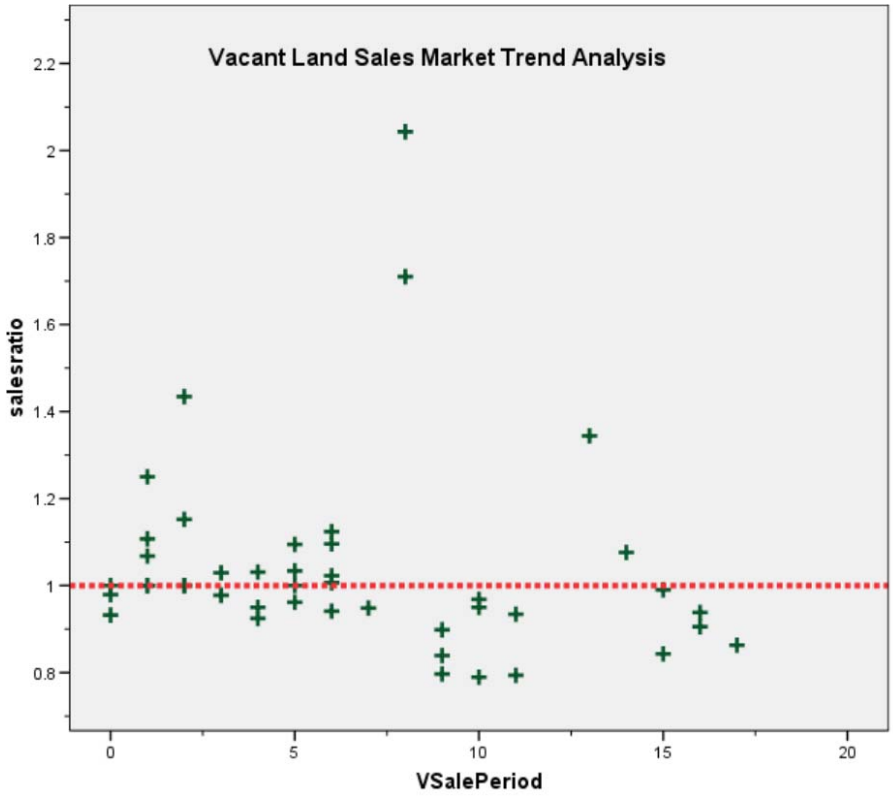
Vacant Land Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.083	.058		18.803	.000
	VSalePeriod	-.007	.007	-.143	-.934	.356

a. Dependent Variable: salesratio



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

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in value for 2008 and 2012 between each group. We stratified the vacant land properties by subdivision and found overall consistency. The following results present the comparison results by subdivision for sold and unsold properties for subdivision with at least 2 sales:

Group	No. Sales	Median	Mean
Unsold	5,295	1.0000	1.1915
Sold	42	0.9110	1.1647

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 2012.

VI. CONCLUSIONS

Based on this 2012 audit statistical analysis, residential, commercial/industrial and vacant land properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT
Residential

Ratio Statistics for CURRTOT / TASP

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.010	1.006	1.014	.996	.994	.998	95.1%	.996	.991	1.001	1.014	.075	15.6%

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

Commercial Land

Ratio Statistics for CURRTOT / TASP

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
.981	.951	1.011	.981	.972	.998	95.3%	.951	.917	.984	1.032	.081	14.8%

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

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.040	.971	1.109	1.000	.950	1.023	95.1%	1.014	.947	1.081	1.025	.125	21.9%

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.

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$25K to $50K	8	.1%
	$50K to $100K	86	1.4%
	$100K to $150K	420	7.0%
	$150K to $200K	942	15.8%
	$200K to $300K	1648	27.6%
	$300K to $500K	1815	30.4%
	$500K to $750K	686	11.5%
	$750K to $1,000K	191	3.2%
	Over $1,000K	183	3.1%
Overall		5979	100.0%
Excluded		0	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
$25K to $50K	1.177	1.011	.091	11.1%
$50K to $100K	1.117	1.037	.334	85.0%
$100K to $150K	1.024	1.002	.104	14.1%
$150K to $200K	.989	1.001	.072	10.4%
$200K to $300K	.997	1.001	.068	9.8%
$300K to $500K	.992	.999	.062	9.3%
$500K to $750K	.997	.999	.057	8.7%
$750K to $1,000K	.995	1.000	.070	11.0%
Over $1,000K	.971	1.010	.101	20.7%
Overall	.996	1.014	.075	15.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1212	4499	75.2%
	1215	56	.9%
	1220	20	.3%
	1221	1	.0%
	1225	10	.2%
	1230	1393	23.3%
Overall		5979	100.0%
Excluded		0	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1212	.999	1.013	.077	17.3%
1215	1.000	1.024	.087	13.9%
1220	.971	1.019	.085	13.1%
1221	.971	1.000	.000	.%
1225	.991	1.023	.018	2.9%
1230	.987	1.022	.066	9.8%
Overall	.996	1.014	.075	15.9%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	120	2.0%
	75 to 100	111	1.9%
	50 to 75	427	7.1%
	25 to 50	2519	42.1%
	5 to 25	2360	39.5%
	5 or Newer	442	7.4%
Overall		5979	100.0%
Excluded		0	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	.970	1.044	.124	26.9%
75 to 100	.981	1.005	.085	12.6%
50 to 75	.999	1.019	.080	14.0%
25 to 50	.996	1.013	.073	10.8%
5 to 25	.998	1.003	.065	10.3%
5 or Newer	.987	1.055	.111	42.5%
Overall	.996	1.014	.075	15.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	50	.8%
	500 to 1,000 sf	1161	19.4%
	1,000 to 1,500 sf	1985	33.2%
	1,500 to 2,000 sf	1228	20.5%
	2,000 to 3,000 sf	1150	19.2%
	3,000 sf or Higher	405	6.8%
Overall		5979	100.0%
Excluded		0	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
LE 500 sf	.976	1.011	.079	11.2%
500 to 1,000 sf	.988	1.015	.078	13.7%
1,000 to 1,500 sf	.992	1.012	.071	12.8%
1,500 to 2,000 sf	.999	1.016	.073	20.0%
2,000 to 3,000 sf	1.000	1.017	.072	17.7%
3,000 sf or Higher	1.001	1.024	.090	16.5%
Overall	.996	1.014	.075	15.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1	16	.3%
	2	25	.4%
	3	2931	49.0%
	4	2288	38.3%
	5	593	9.9%
	6	126	2.1%
Overall		5979	100.0%
Excluded		0	
Total		5979	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1	.977	1.075	.162	22.2%
2	.953	1.122	.248	53.7%
3	.993	1.015	.076	13.2%
4	.994	1.006	.065	15.3%
5	1.007	1.022	.090	24.6%
6	.999	1.045	.102	15.2%
Overall	.996	1.014	.075	15.9%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$50K to $100K	4	4.3%
	$100K to $150K	7	7.6%
	$150K to $200K	7	7.6%
	$200K to $300K	11	12.0%
	$300K to $500K	17	18.5%
	$500K to $750K	15	16.3%
	$750K to $1,000K	7	7.6%
	Over $1,000K	24	26.1%
Overall		92	100.0%
Excluded		0	
Total		92	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
$50K to $100K	.928	.988	.217	37.3%
$100K to $150K	1.000	1.007	.139	24.7%
$150K to $200K	.972	1.010	.108	15.8%
$200K to $300K	.980	1.002	.072	14.0%
$300K to $500K	.985	1.001	.066	12.2%
$500K to $750K	.998	.999	.051	9.0%
$750K to $1,000K	.988	1.005	.052	10.7%
Over $1,000K	.968	1.008	.073	15.0%
Overall	.981	1.032	.081	14.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1712	1	1.1%
	2087	1	1.1%
	2212	14	15.2%
	2220	4	4.3%
	2221	1	1.1%
	2222	1	1.1%
	2227	1	1.1%
	2230	3	3.3%
	2231	2	2.2%
	2234	5	5.4%
	2235	2	2.2%
	2237	4	4.3%
	2238	3	3.3%
	2245	27	29.3%
	2672	1	1.1%
	2737	1	1.1%
	3210	2	2.2%
	3215	13	14.1%
	3230	5	5.4%
	3235	1	1.1%
Overall		92	100.0%
Excluded		0	
Total		92	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation: Median Centered
1712	1.428	1.000	.000	.%
2087	.975	1.000	.000	.%
2212	.982	1.027	.069	10.3%
2220	.999	1.012	.025	4.6%
2221	1.000	1.000	.000	.%
2222	1.000	1.000	.000	.%
2227	1.116	1.000	.000	.%
2230	.978	.999	.017	2.5%
2231	1.141	1.009	.031	4.4%
2234	1.020	1.061	.099	18.5%
2235	.941	1.003	.013	1.9%
2237	.968	1.006	.030	5.7%
2238	.876	.932	.087	13.2%
2245	.981	1.006	.092	17.2%
2672	.938	1.000	.000	.%
2737	.953	1.000	.000	.%
3210	1.001	1.001	.011	1.5%
3215	.980	1.038	.051	9.0%
3230	1.000	1.540	.166	33.3%
3235	1.027	1.000	.000	.%
Overall	.981	1.032	.081	14.9%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	8	8.7%
	75 to 100	4	4.3%
	50 to 75	9	9.8%
	25 to 50	32	34.8%
	5 to 25	31	33.7%
	5 or Newer	8	8.7%
Overall		92	100.0%
Excluded		0	
Total		92	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
Over 100	.971	1.018	.150	25.1%
75 to 100	1.000	.979	.081	13.7%
50 to 75	.998	1.070	.125	21.3%
25 to 50	.987	.991	.058	9.2%
5 to 25	.975	1.022	.061	12.0%
5 or Newer	.985	1.124	.119	25.4%
Overall	.981	1.032	.081	14.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	4	4.3%
	LE 500 sf	2	2.2%
	500 to 1,000 sf	10	10.9%
	1,000 to 1,500 sf	10	10.9%
	1,500 to 2,000 sf	13	14.1%
	2,000 to 3,000 sf	10	10.9%
	3,000 sf or Higher	43	46.7%
Overall		92	100.0%
Excluded		0	
Total		92	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation: Median Centered
0	.854	1.622	.160	34.6%
LE 500 sf	.776	.978	.252	35.7%
500 to 1,000 sf	.990	1.037	.067	17.7%
1,000 to 1,500 sf	1.000	1.017	.079	14.5%
1,500 to 2,000 sf	.978	1.008	.056	9.2%
2,000 to 3,000 sf	.991	1.018	.146	22.7%
3,000 sf or Higher	.985	1.020	.054	8.1%
Overall	.981	1.032	.081	14.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1	5	5.4%
	2	3	3.3%
	3	66	71.7%
	4	18	19.6%
Overall		92	100.0%
Excluded		0	
Total		92	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation
				Median Centered
1	1.000	1.002	.027	5.3%
2	.951	1.008	.013	2.0%
3	.981	1.031	.082	14.9%
4	.976	1.049	.102	18.0%
Overall	.981	1.032	.081	14.9%

Vacant Land Median Ratio Stratification

Case Processing Summary

		Count	Percent
ABSTRLND	100	25	56.8%
	200	1	2.3%
	300	1	2.3%
	520	6	13.6%
	530	3	6.8%
	540	3	6.8%
	550	1	2.3%
	600	2	4.5%
	1112	1	2.3%
	2130	1	2.3%
Overall		44	100.0%
Excluded		0	
Total		44	

Ratio Statistics for CURRLND / VTASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation: Median Centered
100	1.023	1.005	.163	28.4%
200	.950	1.000	.000	.%
300	.990	1.000	.000	.%
520	1.000	.952	.051	10.0%
530	.932	.987	.053	10.5%
540	1.034	1.084	.085	14.0%
550	.905	1.000	.000	.%
600	.984	1.011	.016	2.3%
1112	.938	1.000	.000	.%
2130	.898	1.000	.000	.%
Overall	1.000	1.025	.125	23.1%