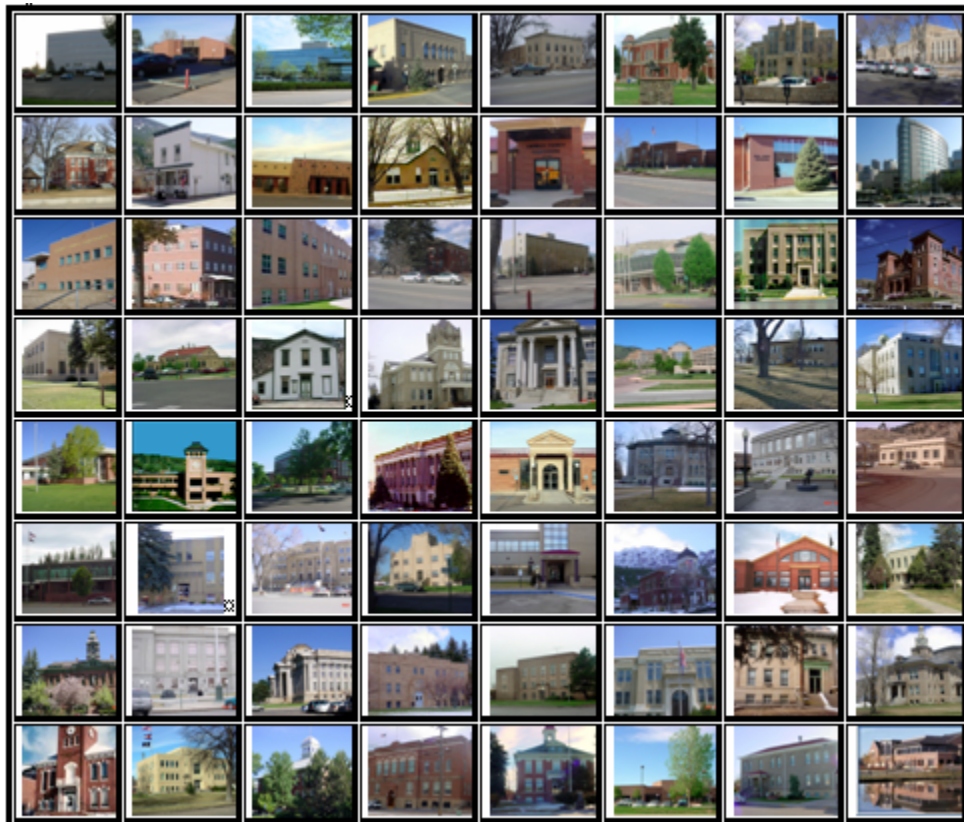# 2009
GRAND COUNTY
PROPERTY ASSESSMENT
STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

September 15, 2009

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

RE: Final Report for the 2009 Colorado Property Assessment Study

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2009 Colorado Property Assessment Study.

These reports are the result of two analyses: A procedural audit and a statistical audit.

The procedural audit examines all classes of property. It specifically looks at how the assessor develops economic areas, confirms and qualifies sales, develops time adjustments and performs periodic physical property inspections. The audit reviews the procedures for determining subdivision absorption and subdivision discounting. Valuation methodology is examined for residential properties and commercial properties. Procedures are reviewed for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests, and non-producing patented mining claims.

Statistical audits are performed on vacant land, residential properties, commercial/industrial properties and agricultural land. A statistical analysis is performed for personal property compliance on the eleven largest counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld. The remaining counties receive a personal property procedural study.

Wildrose Appraisal Inc. – Audit Division appreciates the opportunity to be of service to the State of Colorado. Please contact us with any questions or concerns.

Harry J. Fuller

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

TABLE OF CONTENTS

INTRODUCTION

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

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

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

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

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

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

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

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

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

REGIONAL/HISTORICAL SKETCH OF GRAND COUNTY

Regional Information

Grand County is located in the Western Slope region of Colorado. The Western Slope of Colorado refers to the region west of the Rocky Mountains. It includes Archuleta, Delta, Dolores, Eagle, Garfield, Grand, Gunnison, Hinsdale, Jackson, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel, and Summit counties.
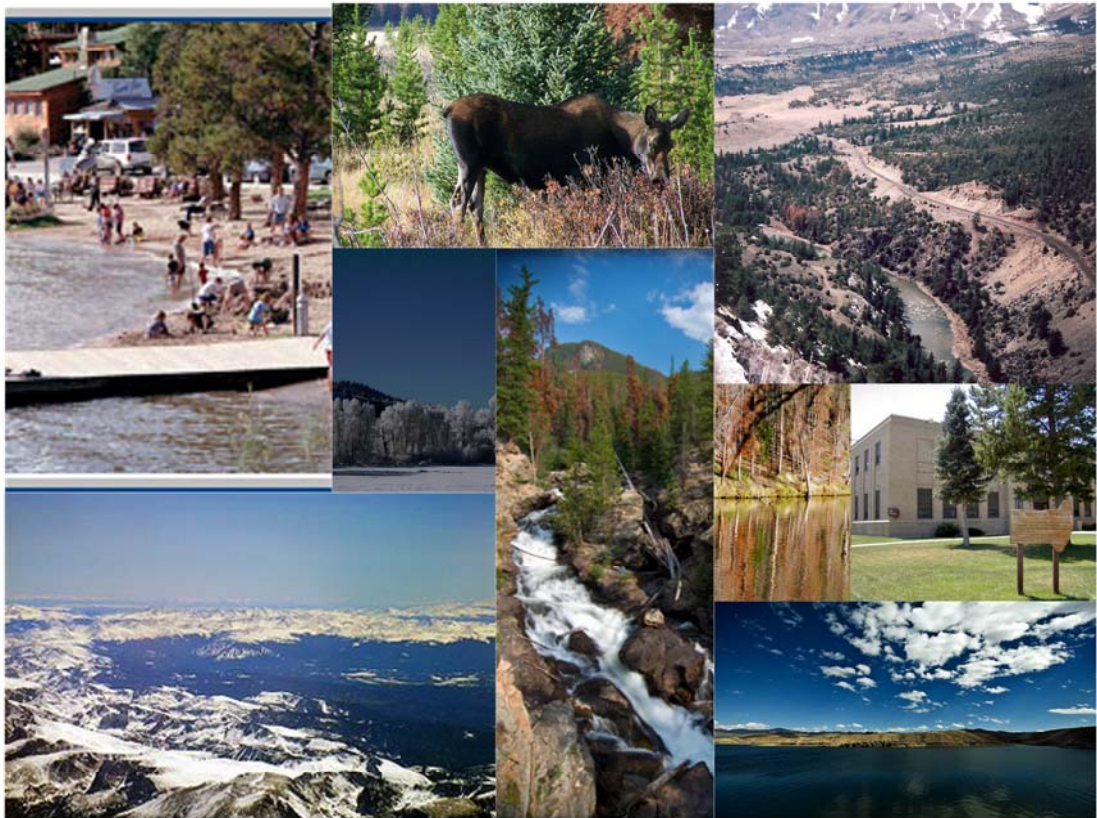
Historical Information

Grand County has a population of approximately 13,406 people with 6.7 people per square mile, according to the U.S. Census Bureau's 2006 estimated population data.

When Grand County was created February 2, 1874 it was carved out of Summit County and contained land to the western and northern borders of the state, which is now in present day Moffat County and Routt County. It was named after Grand Lake and the Grand River, an old name for the Colorado River, which has its headwaters in the county. On January 29, 1877 Routt County was created and Grand County shrunk down to its current western boundary. When valuable minerals were found in North Park, Grand County claimed the area as part of its county, a claim Larimer County also held. It took a decision by the Colorado Supreme Court in 1886 to declare North Park part of Larimer County, setting Grand County's northern boundary.

Grand Lake is the deepest and largest natural lake in Colorado and the area attracts an impressive divesity of wildlife. Prehistoric peoples, and later Native American Ute, Arapaho and Cheyenne tribes made annual pilgrimages to the area each summer to fish, hunt and reap the bounty of nature's harvest. It wasn't long before trappers, traders and explorers followed.

In the mid-1800s, European hunting parties discovered Grand Lake. Some hunters constructed summer lodges and hired local mountain men as guides. The area was permanently settled in 1867. Grand Lake Village's first full-time, year-round residents were an intriguing mix of miners (who participated in a brief mining boom) and hunting guides. In the late 1870s, silver was discovered in the rivers and mountains near Grand Lake. Prospectors bought supplies in local stores and established small mountain mining communities. Almost overnight, the town of Grand Lake transformed into a bustling economy. (*Wikipedia.org & www.grandlakechamber.com*)

RATIO ANALYSIS

Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 2007 and June 2008. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2008 in 6-month increments. If there were still fewer than 30 sales, supplemental appraisals were performed and treated as proxy sales. Residential sales for all counties using this method totaled at least 30 per county. For commercial sales, the total number analyzed was allowed, in some cases, to fall below 30. There were no sale quantity issues for counties requiring vacant land analysis or condominium analysis. Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either "Q" or "C." The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were "lost" because of trimming. For the largest 11 counties, the residential ratio statistics were broken down by economic area as well.

Conclusions

For this final analysis report, the minimum acceptable statistical standards allowed by the State Board of Equalization are:

ALLOWABLE STANDARDS RATIO GRID		
Property Class	Unweighted Median Ratio	Coefficient of Dispersion
Commercial/Industrial	Between .95-1.05	Less than 20.99
Condominium	Between .95-1.05	Less than 15.99
Single Family	Between .95-1.05	Less than 15.99
Vacant Land	Between .95-1.05	Less than 20.99

The results for Grand County are:

Grand County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	40	0.998	1.010	6	Compliant
Condominium	648	0.999	1.001	4.8	Compliant
Single Family	744	0.996	1.008	6.4	Compliant
Vacant Land	382	1.000	1.005	7.4	Compliant

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

Recommendations

None

Random Deed Analysis

An additional analysis was performed as part of the Ratio Analysis. Ten randomly selected deeds with documentary fees were obtained from the Clerk and Recorder. These deeds were for sales that occurred from January 1, 2007 through June 30, 2008. These sales were then checked for inclusion on the Assessor's qualified or unqualified database.

Conclusions

After comparing the list of randomly selected deeds with the Assessor's database, Grand 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 Grand County has complied with the statutory requirements to analyze the effects of time on value in their county. Grand 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

Grand County was tested for the equal treatment of sold and unsold properties to ensure that "sales chasing" has not occurred. The auditors employed a multi-step process to determine if sold and unsold properties were valued in a consistent manner.

All qualified residential and commercial class properties were examined using the unit value method, where the actual value per square foot was compared between sold and unsold properties. A class was considered qualified if it met the criteria for the ratio analysis. The median value per square foot for both groups was compared from an appraisal and statistical perspective. If no significant difference was indicated, then we concluded that no further testing was warranted and that the county was in compliance in terms of sold/unsold consistency.

If either residential or commercial differences were significant using the unit value method, or if data limitations made the comparison invalid, then the next step was to perform a ratio analysis comparing the 2008 and 2009 actual values for each qualified class of property. All qualified vacant land classes were tested using this method. The sale property ratios were arrayed using a range of 0.8 to 1.5, which theoretically excluded changes between years that were due to other unrelated changes in the property. These ratios were also stratified at the appropriate level of analysis. Once the percent change was determined for each appropriate class and sub-class, the next step was to select the unsold sample. This sample

was at least 1% of the total population of unsold properties and excluded any sale properties. The unsold sample was filtered based on the attributes of the sold dataset to closely correlate both groups. The ratio analysis was then performed on the unsold properties and stratified. The median and mean ratio distribution was then compared between the sold and unsold group. A non-parametric test such as the Mann-Whitney test for differences between independent samples was undertaken to determine whether any observed differential was significant. If this test determined that the unsold properties were treated in a manner similar to the sold properties, it was concluded that no further testing was warranted and that the county was in compliance.

If a class or sub-class of property was determined to be significantly different by this method, the final step was to perform a multi-variate mass appraisal model that developed ratio statistics from the sold properties that were then applied to the unsold sample. This test compared the measures of central tendency and confidence intervals for the sold properties with the unsold property sample. If this comparison was also determined to be significantly different, then the conclusion was that the county had treated the unsold properties in a different manner than sold properties.

These tests were supported by both tabular and chart presentations, along with saved sold and unsold sample files.

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

Conclusions

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

Recommendations

None

AGRICULTURAL LAND STUDY

Acres By Subclass

Forest 7.68%
Meadow Hay 12.31%
Grazing 80.01%

Value By Subclass
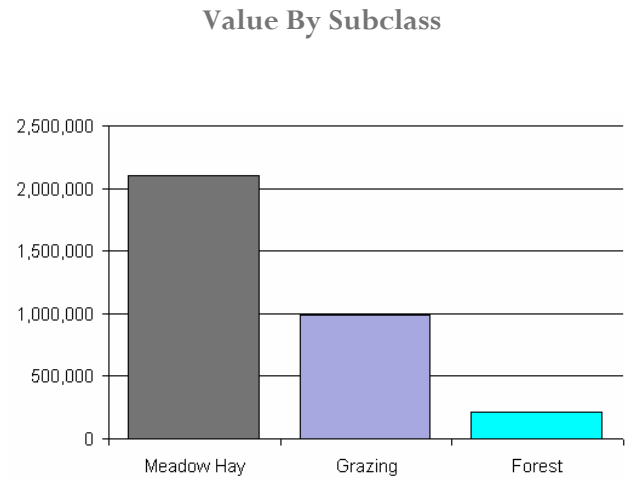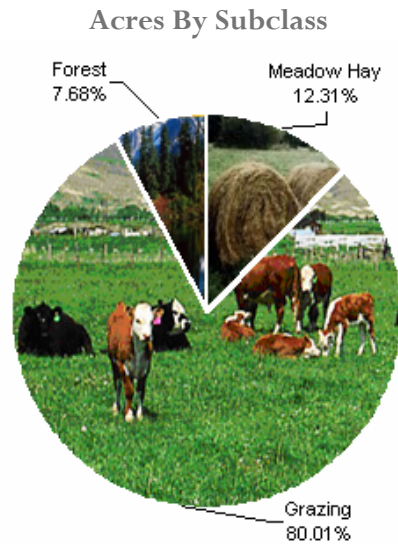
Agricultural Land

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:

				Grand County Agricultural Land Ratio Grid		
Abstract Code	**Land Class**	**Number Of Acres**	**County Value Per Acre**	**County Assessed Total Value**	**WRA Total Value**	**Ratio**
4137	Meadow Hay	30,850	68.23	2,104,790	2,104,790	1.00
4147	Grazing	200,531	4.95	992,422	992,422	1.00
4177	Forest	19,253	11.30	217,614	217,614	1.00
Total/Avg		**250,634**	**13.23**	**3,314,826**	**3,314,826**	**1.00**

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

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

Recommendations

None

SALES VERIFICATION

According to Colorado Revised Statutes:

A representative body of sales is required when considering the market approach to appraisal.

(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:

(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.

(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)

The assessor is required to use sales of real property only in the valuation process.

(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

WRA reviewed the sales verification procedures in 2009 for Grand County. This study was conducted by checking selected sales from the master sales list for the Jan 1, 2007 - June 30, 2008 valuation period. Specifically WRA selected 31 sales listed as unqualified. All but 2 of the sales selected in the sample gave reasons that were clear and supportable. Two sales had insufficient documentation.

Conclusions

Grand County appears to be doing a good job of verifying their sales. There are no recommendations.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

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

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2009 in Grand County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14). Discounting procedures were applied to all subdivisions where less than 80 percent of all sites were sold using the present worth method. The market approach was applied where 80 percent or more of the subdivision sites were sold. An absorption period was estimated for each subdivision that was discounted. An appropriate discount rate was developed using the summation method.

Subdivision land with structures was appraised at full market value.

Conclusions

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

Recommendations

None

P OSSESSORY I NTEREST P ROPERTIES

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.

Grand 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

Grand 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

Grand 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.

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

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

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.

Grand County submitted their personal property written audit plan and was current for the 2009 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Businesses in a selected area
- Accounts with obvious discrepancies
- New businesses filing for the first time
- 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 $4,000 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement
- Accounts with questionable or suspicious information
- Businesses with new owners

Conclusions

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

Recommendations

None

WILDROSE AUDITOR STAFF

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

Steve Kane, *Audit Statistician/Field Analyst*

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

Andy Rodriguez, *Field Analyst*

A PPENDICES

EARLY REPORTING RESULTS
FOR GRAND COUNTY
2009

I. OVERVIEW

Grand County is a mountain resort located in north central Colorado.   The county has a total of 27,952 real property parcels, according to data submitted by the county assessor's office in 2009. The following provides a breakdown of property classes for this county:

Real Property Class Distribution
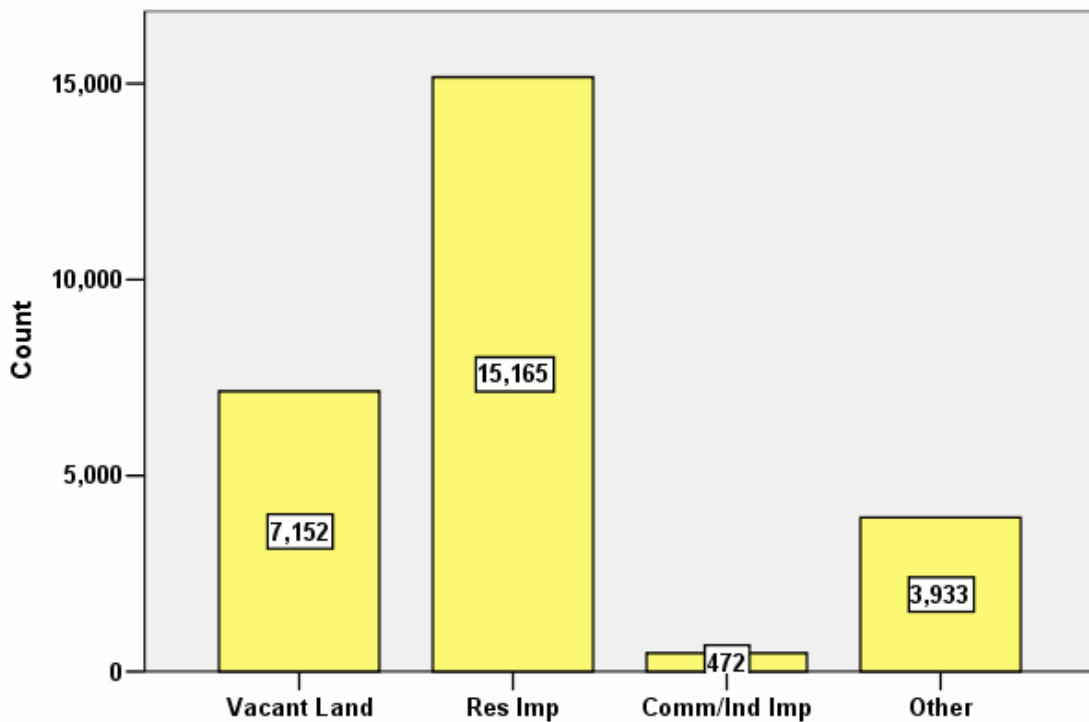
The vacant land class of properties was dominated by residential land. Residential lots (coded 100) accounted for 84% of all vacant land parcels.

For residential improved properties, single family properties accounted for 61% of all residential properties. Residential condominiums accounted for 31% of all residential improved properties. Based on the guidelines for the state audit statistical compliance analysis, we will analyze residential condominiums separately.

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

II. DATA FILES

The following sales analyses were based on the requirements of the 2009 Colorado Property Assessment Study. Information was provided by the Grand Assessor's Office on April 13, 2009. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

The following steps were taken to analyze the residential sales:

1. Selected qualified sales	1,849
2. Select improved sales	1,440
3. Select residential sales only	1,392
4. Sales between January 1, 2007 and June 30, 2008	1,392

The sales ratio analysis was analyzed as follows:

Residential Non-Condominiums (744 Sales)

Median	**0.996**
Price Related Differential	**1.008**
Coefficient of Dispersion	**.064**

Residential Condominiums (648 Sales)

Median	**0.999**
Price Related Differential	**1.001**
Coefficient of Dispersion	**.048**

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:

Residential Non-Condominiums
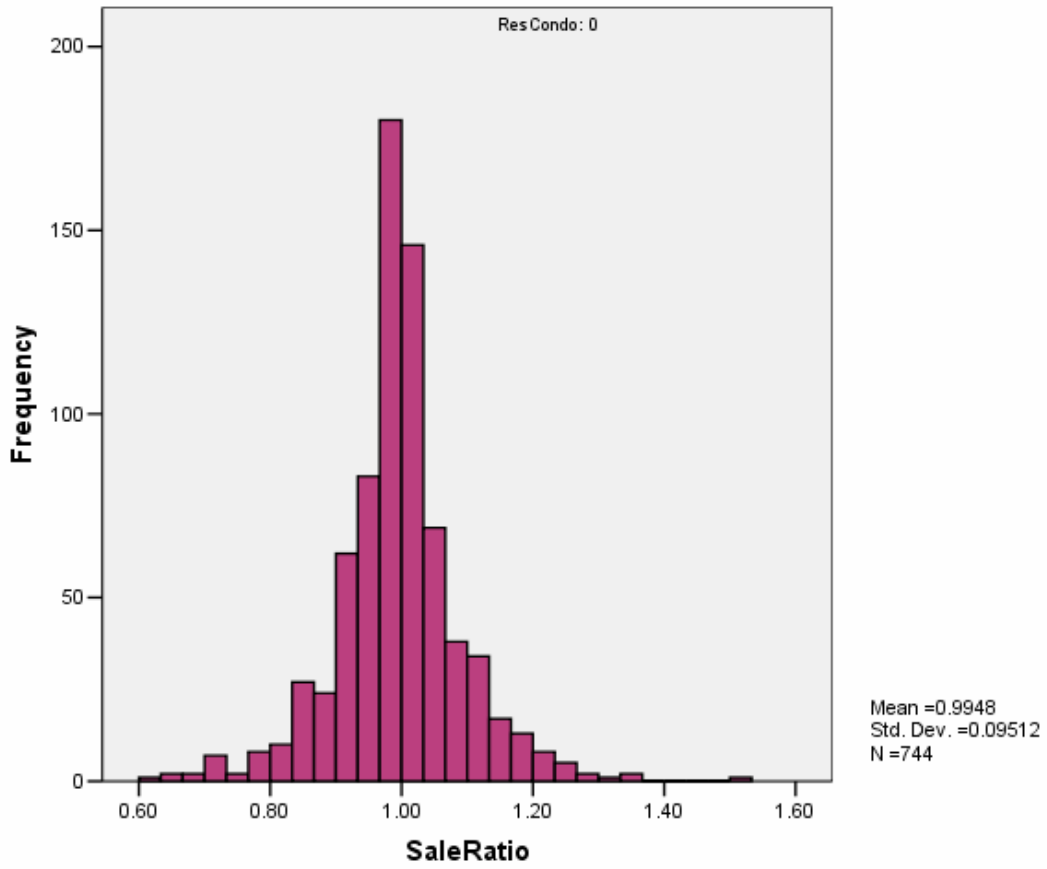
Residential Condominiums
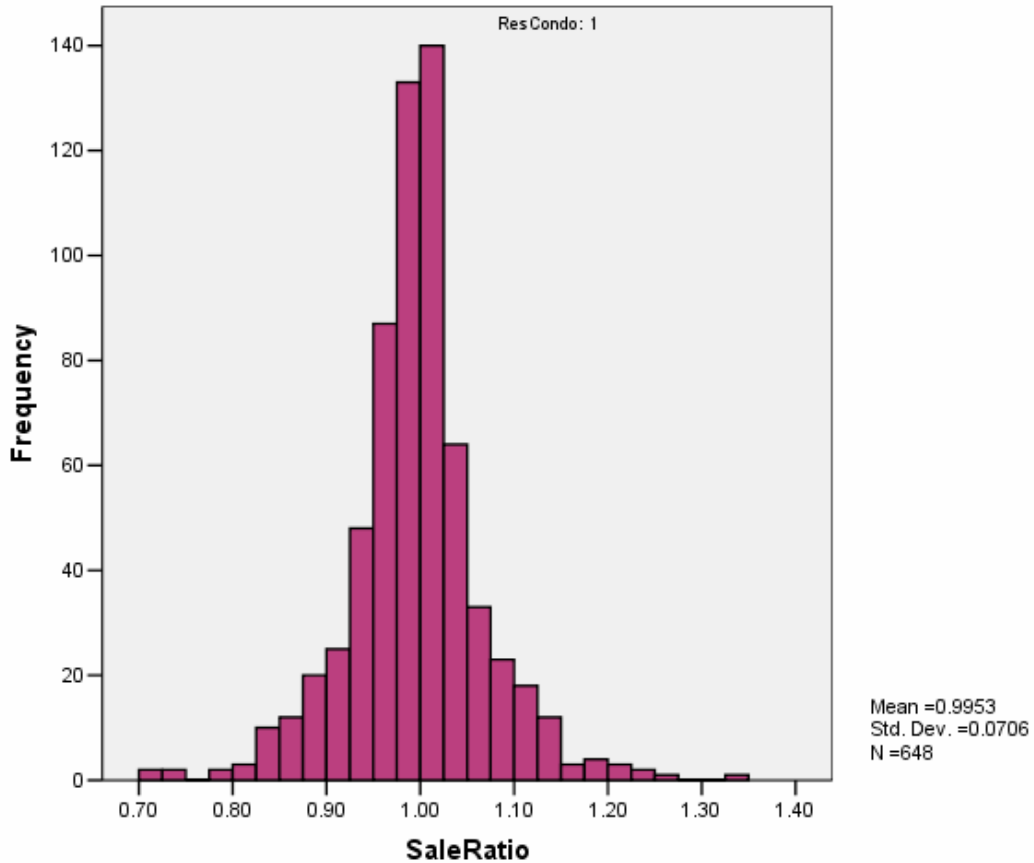
The above graphs indicate that the distribution of the sale ratios was within state mandated limits. No sales were trimmed.

Residential Market Trend Analysis

We next analyzed the residential dataset using the 18-month sale period for any residual market trending. We stratified the sales by economic area, assigning residential condominiums under Economic Area 0, with the following results:

Coefficients[a]

EconomicArea	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
0	1	(Constant)	1.004	.006		178.490	.000
		saleperiod	-.001	.001	-.056	-1.466	.143
1	1	(Constant)	.986	.012		85.060	.000
		saleperiod	.001	.001	.055	.895	.371
2	1	(Constant)	.981	.014		70.169	.000
		saleperiod	.002	.001	.125	1.427	.156
3	1	(Constant)	.975	.026		38.151	.000
		saleperiod	.002	.003	.115	.829	.411
4	1	(Constant)	.970	.019		50.077	.000
		saleperiod	.002	.002	.093	1.122	.264
5	1	(Constant)	1.032	.041		25.020	.000
		saleperiod	-.005	.005	-.199	-.908	.375
6	1	(Constant)	.941	.031		30.167	.000
		saleperiod	.005	.003	.167	1.545	.126

a. Dependent Variable: SaleRatio

The above analysis indicated that the assessor has adequately addressed market trending in the valuation of residential properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median actual value per square foot for 2009 between each group, stratified by subdivision, as follows:

SUBCODE	sold	N	Median	Mean
255	0	22	$335	$348
	1	19	$335	$358
	Total	41	$335	$353
257	0	13	$214	$233
	1	19	$377	$380
	Total	32	$370	$320
300	0	199	$234	$253
	1	13	$215	$208
	Total	212	$232	$251
500	0	81	$137	$140
	1	7	$140	$168
	Total	88	$137	$142
520	0	73	$159	$165
	1	7	$164	$179
	Total	80	$163	$166
610	0	130	$135	$139

	1	11	$126	$135
	Total	141	$135	$139
615	0	85	$142	$143
	1	7	$116	$124
	Total	92	$141	$142
625	0	73	$163	$166
	1	12	$173	$176
	Total	85	$164	$168
1007	0	8	$546	$551
	1	10	$611	$614
	Total	18	$611	$586
1098	0	31	$365	$359
	1	25	$352	$368
	Total	56	$356	$363
1130	0	93	$179	$193
	1	13	$177	$181
	Total	106	$179	$192
1201	0	10	$400	$350
	1	14	$409	$408
	Total	24	$406	$384
1237	0	68	$499	$498
	1	7	$523	$533
	Total	75	$508	$501
1239	0	12	$481	$498
	1	14	$588	$564
	Total	26	$523	$534
1258	0	9	$586	$575
	1	15	$586	$595
	Total	24	$586	$588
1273	0	16	$236	$236
	1	7	$245	$244
	Total	23	$238	$238
1280	0	398	$236	$260
	1	17	$270	$258
	Total	415	$236	$260
1412	0	48	$628	$614
	1	152	$628	$615
	Total	200	$628	$615
1515	0	56	$134	$137
	1	13	$137	$137
	Total	69	$136	$137
1710	0	34	$209	$232
	1	6	$207	$210
	Total	40	$209	$229

1773	0	225	$236	$242
	1	21	$263	$266
	Total	246	$238	$244
1859	0	4	$391	$419
	1	31	$374	$376
	Total	35	$374	$381
1860	0	67	$206	$207
	1	9	$193	$209
	Total	76	$204	$208
2020	0	51	$150	$154
	1	6	$149	$145
	Total	57	$150	$154
2170	0	30	$185	$190
	1	6	$187	$189
	Total	36	$185	$190
2215	0	25	$217	$222
	1	8	$198	$216
	Total	33	$214	$220
2553	0	72	$266	$272
	1	38	$256	$254
	Total	110	$262	$266
2651	0	26	$245	$243
	1	17	$269	$267
	Total	43	$254	$252
2800	0	16	$238	$239
	1	8	$238	$242
	Total	24	$238	$240
2950	0	101	$271	$282
	1	9	$264	$329
	Total	110	$271	$286
3026	0	9	$269	$269
	1	7	$267	$267
	Total	16	$268	$268
4126	0	16	$288	$275
	1	7	$273	$276
	Total	23	$279	$275
5258	0	14	$243	$250
	1	10	$265	$264
	Total	24	$252	$256
5500	0	91	$77	$72
	1	11	$61	$67
	Total	102	$77	$72
5510	0	139	$77	$73
	1	11	$77	$73

	Total	150	$77	$73
5625	0	44	$452	$453
	1	6	$452	$458
	Total	50	$452	$454
5660	0	47	$236	$232
	1	10	$237	$231
	Total	57	$236	$232
5661	0	45	$240	$237
	1	13	$225	$229
	Total	58	$238	$235
5665	0	41	$209	$216
	1	11	$205	$213
	Total	52	$208	$216
5671	0	91	$280	$285
	1	6	$289	$296
	Total	97	$280	$285
5950	0	69	$126	$141
	1	11	$126	$144
	Total	80	$126	$142
6026	0	18	$302	$300
	1	7	$310	$319
	Total	25	$306	$305
6305	0	34	$221	$226
	1	12	$221	$224
	Total	46	$221	$226
6360	0	10	$157	$157
	1	8	$157	$157
	Total	18	$157	$157
6440	0	38	$226	$226
	1	8	$230	$232
	Total	46	$227	$227
6651	0	51	$243	$239
	1	8	$235	$231
	Total	59	$243	$238
6662	0	32	$239	$241
	1	7	$250	$263
	Total	39	$240	$245
6682	0	21	$279	$309
	1	6	$289	$288
	Total	27	$287	$304
6750	0	204	$582	$570
	1	26	$581	$570
	Total	230	$582	$570
9030	0	269	$205	$244

	1	11	$197	$220
	Total	280	$205	$243
Total	0	3359	$226	$254
	1	737	$298	$359
	Total	4096	$236	$273

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

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

The following steps were taken to analyze the commercial sales:

1. Selected qualified sales	1,849
2. Select improved sales	1,440
3. Select commercial sales only	40
4. Sales between January 1, 2007 and June 30, 2008	40

The sales ratio analysis was analyzed as follows:

Median	**0.998**
Price Related Differential	**1.010**
Coefficient of Dispersion	**.060**

The above tables indicate that the Grand 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 =1
Std. Dev. =0.105
N =40
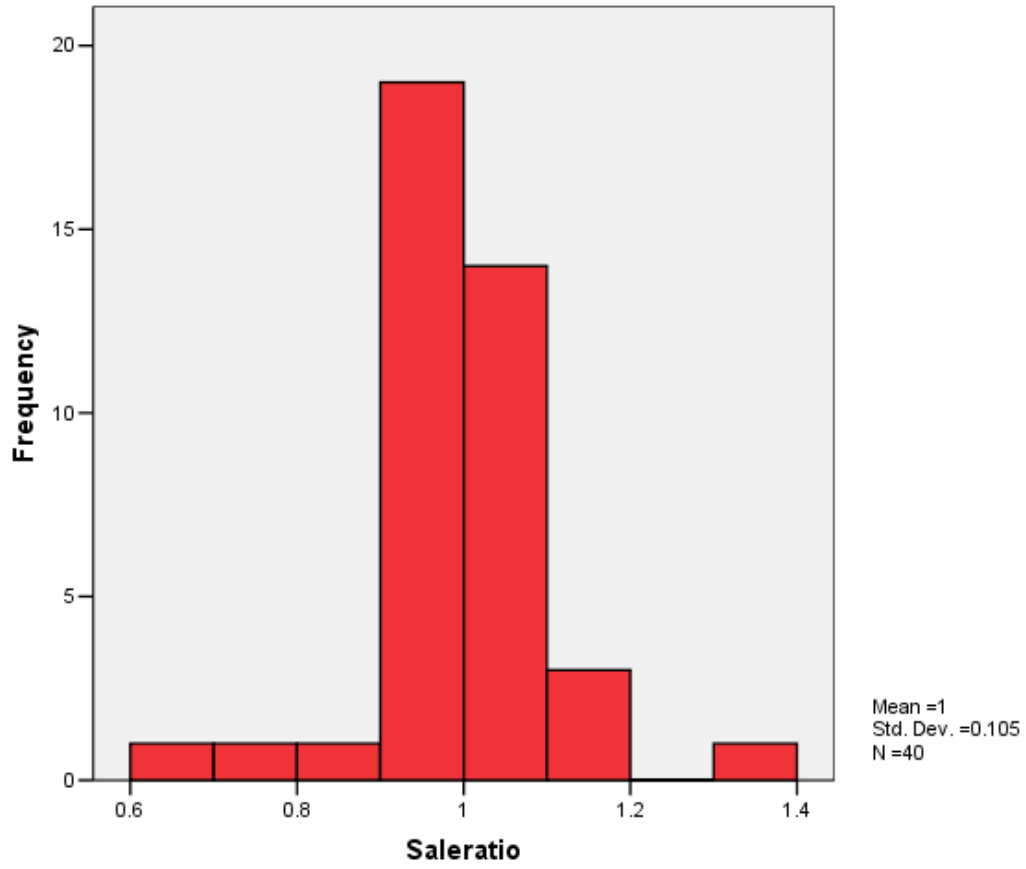
Commercial Sale Price by Sales Ratio
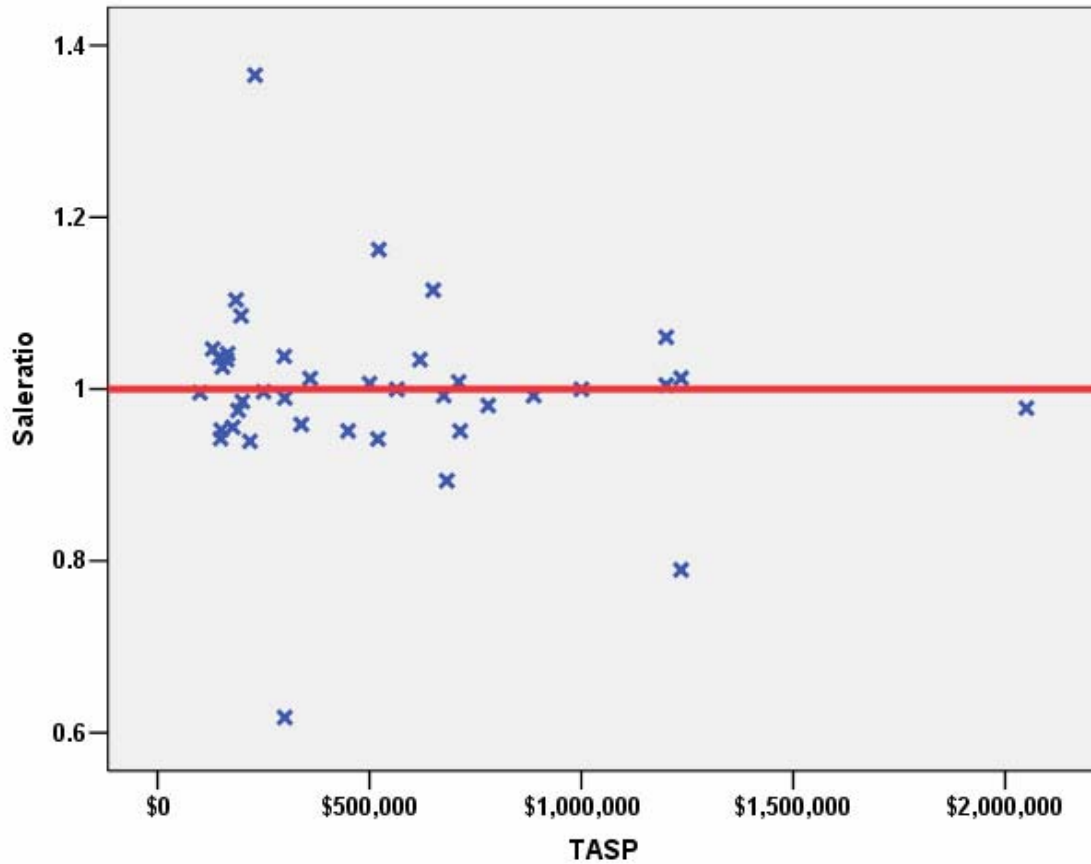
Commercial Market Trend Analysis

The assessor did not apply any market trend adjustment to the commercial dataset. The 40 commercial sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.962	.038		25.124	.000
	saleperiod	.004	.004	.173	1.085	.285

a. Dependent Variable: Saleratio

Commercial Market Trend Analysis

The market trend results indicated no statistically significant trend. We concur that no market trend adjustments were warranted for properties in this class for Grand County.

Sold/Unsold Analysis

We compared the median actual value per square foot between sold and unsold commercial properties to determine if the assessor was valuing each group consistently. While this is a challenge to prove in this county, given the small number of sales and the overall diversity of commercial/industrial properties across six economic areas, the following results indicate that based on the median actual value, both groups were valued overall in a consistent manner:

Subclass	Group	No, Props	Median Val / SF	Mean Val / SF
2212	Unsold	37	$174	$208
	Sold	7	$232	$226
2215	Unsold	16	$178	$171
	Sold	4	$90	$104

2220	Unsold	12	$220	$260
	Sold	3	$240	$299
2230	Unsold	86	$136	$155
	Sold	13	$135	$190
2235	Unsold	14	$81	$129
	Sold	5	$135	$138
2240	Unsold	8	$151	$175
	Sold	2	$151	$151
Total	Unsold	193	$169	$178
	Sold	38	$184	$188

While there were several subclasses of properties that had sold properties valued at a higher median rate, there were other classes where the opposite was the case.

V. VACANT LAND SALE RESULTS

The following steps were taken to analyze vacant land sales:

1. Selected qualified sales — 1,849
2. Select vacant land sales — 382
3. Sales between January 1, 2007 and June 30, 2008 — 382

The sales ratio analysis was analyzed as follows:

Median	**1.000**
Price Related Differential	**1.005**
Coefficient of Dispersion	**.074**

The above tables indicate that the Grand County vacant land sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:

Mean =0.9899
Std. Dev. =0.11838
N =382
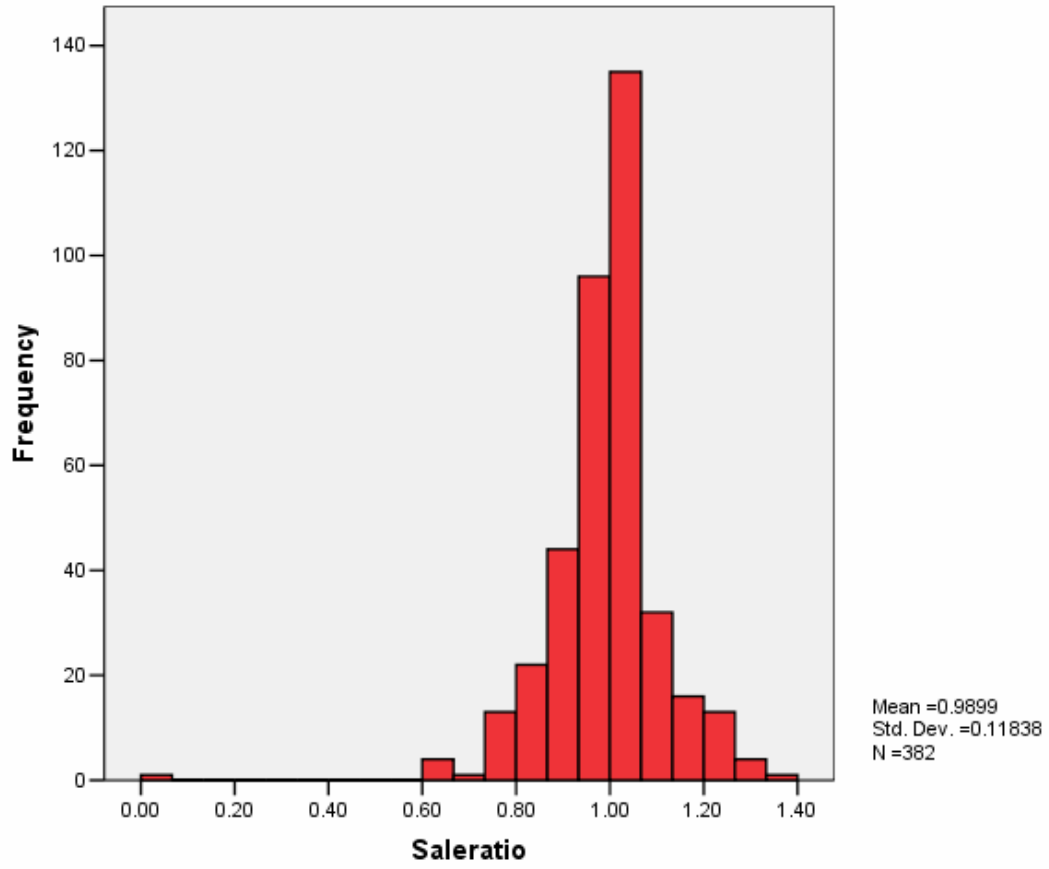
Vacant Land Sale Price by Sales Ratio

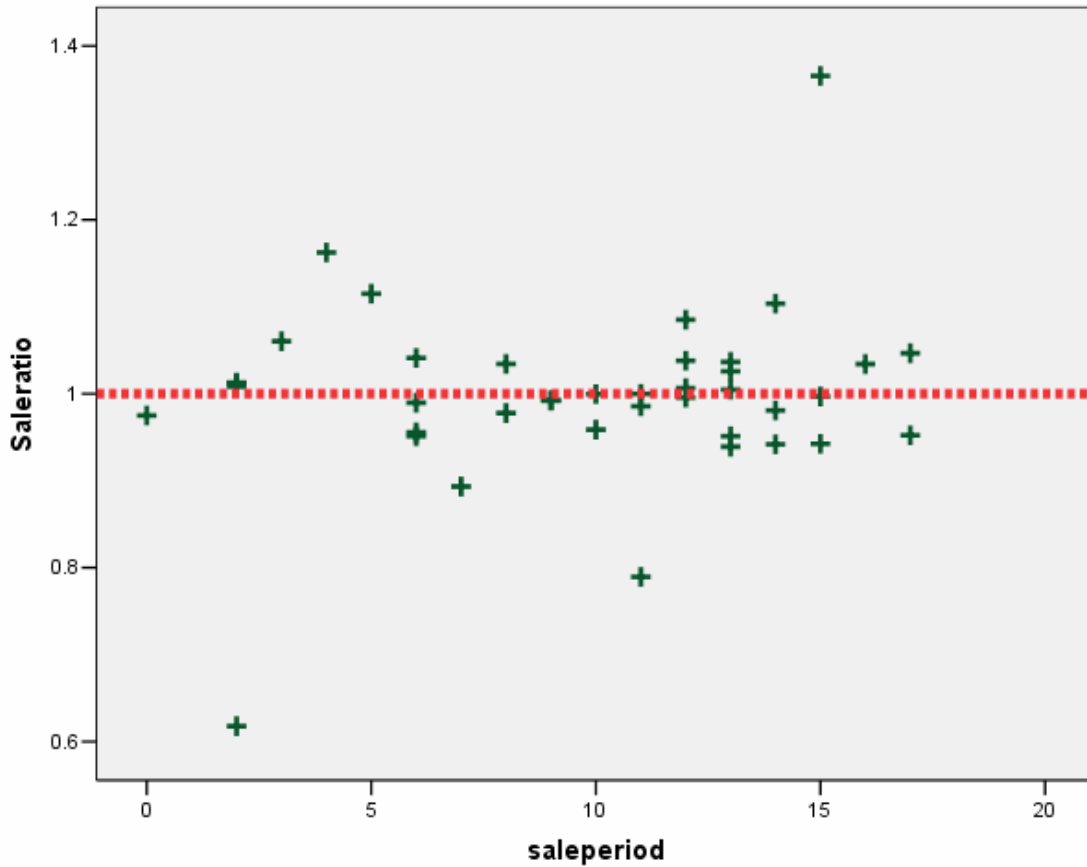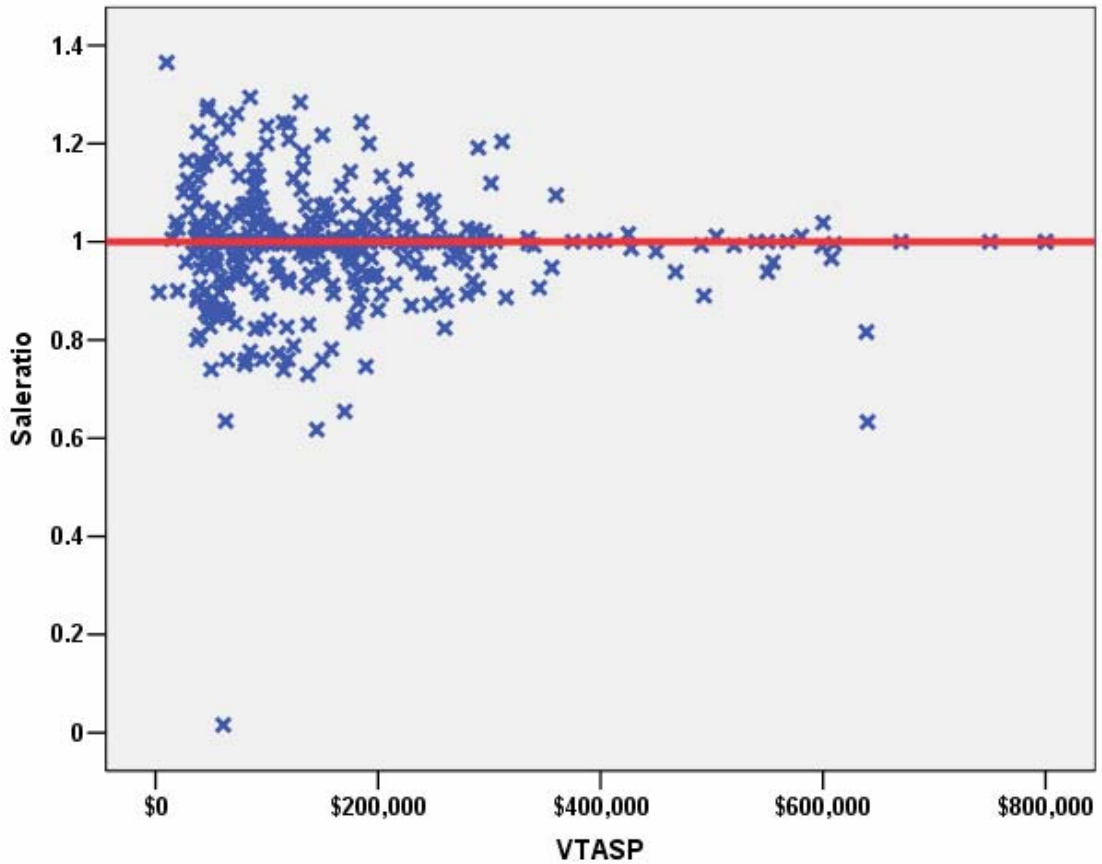**Vacant Land Market Trend Analysis**

The assessor did not apply any market trend adjustment to the vacant land dataset. The 382 vacant land sales were analyzed, examining the sale ratios across the 18 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.973	.015		66.127	.000
	Vsaleperiod	.002	.001	.064	1.243	.215

a. Dependent Variable: Saleratio

Vacant Land Market Trend Analysis
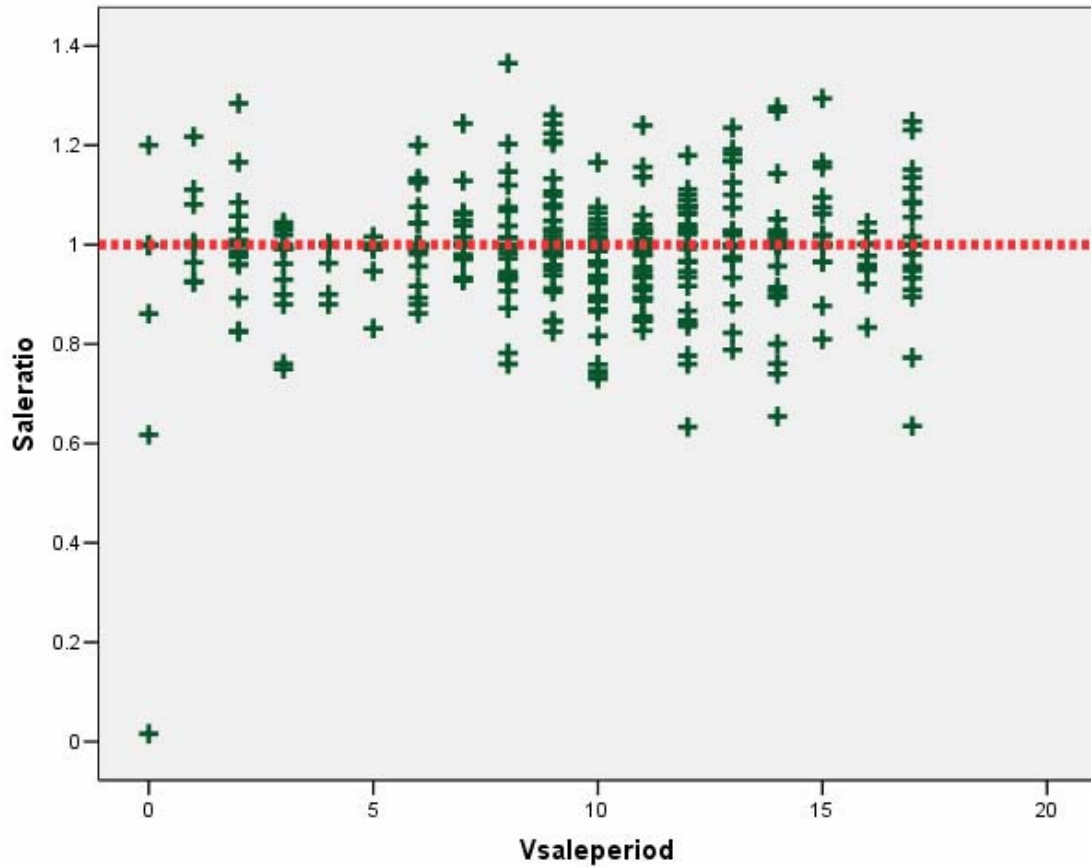
The market trend results indicated no statistically significant trend. We concur that no market trend adjustments were warranted for properties in this class for Grand County.

Sold/Unsold Analysis

We compared the median change in actual value between 2008 and 2009 for vacant land properties to determine if sold and unsold properties were valued consistently.   We performed the analysis stratifying the properties by subdivision, as follows:

SUBDIVNO	sold	N	Median	Mean
258.00	0	40	1.7569	1.6262
	1	9	1.3177	1.7162
	Total	49	1.7569	1.6427
520.00	0	59	.8824	.8916
	1	11	.8531	.8534
	Total	70	.8824	.8856
1130.00	0	38	1.3839	1.3839

	1	6	1.3839	1.4162
	Total	44	1.3839	1.3883
1236.00	0	29	1.0321	1.0132
	1	14	1.0321	.9498
	Total	43	1.0321	.9926
1280.00	0	118	.8543	.8559
	1	11	.8543	.8924
	Total	129	.8543	.8590
1496.00	0	66	1.2158	1.2765
	1	8	1.1888	1.2583
	Total	74	1.2158	1.2745
1713.00	0	25	.9856	.9856
	1	6	.9854	.9044
	Total	31	.9856	.9699
1773.00	0	300	1.0400	1.0008
	1	17	1.0400	1.0767
	Total	317	1.0400	1.0049
1853.00	0	44	1.1471	1.1131
	1	14	1.1261	1.1132
	Total	58	1.1471	1.1131
1854.00	0	66	.8600	.8850
	1	7	.7396	.7865
	Total	73	.8556	.8756
2170.00	0	21	1.1009	1.1009
	1	7	1.1009	1.1009
	Total	28	1.1009	1.1009
2226.00	0	35	.9115	.9139
	1	9	.9115	.9264
	Total	44	.9115	.9164
2230.00	0	101	1.0280	1.1586
	1	11	1.0280	1.1414
	Total	112	1.0280	1.1569
2234.00	0	31	1.2023	1.1768
	1	10	1.1226	1.3200
	Total	41	1.2023	1.2118
2416.00	0	24	1.1951	1.1951
	1	6	1.1951	1.1592
	Total	30	1.1951	1.1879
2546.00	0	27	2.0446	2.2296
	1	29	2.3946	2.2927
	Total	56	2.3946	2.2623
Total	0	1024	1.0321	1.0885
	1	175	1.1009	1.2947
	Total	1199	1.0400	1.1186

The above results when stratified by subdivision indicated that sold and unsold vacant land properties were valued consistently.

V. AGRICULTURAL IMPROVEMENTS ANALYSIS

The final statistical verification concerned the assigned actual values for agricultural residential improvements. We compared the actual value per square foot rate for this group and compared it to rates assigned to residential single family improvements in Grand County.

The following indicates that agricultural residential improvements were valued in a manner similar to the single family residential improvements in this county:

Descriptives

Abstrimp				Statistic	Std. Error
ImpValSF	1212	Mean		$135.19	$2.800
		95% Confidence Interval for Mean	Lower Bound	$129.68	
			Upper Bound	$140.70	
		5% Trimmed Mean		$1̶3̶3̶.̶0̶7̶	
		Median		$135.25	
		Variance		2̶4̶8̶5̶.̶4̶5̶6̶	
		Std. Deviation		$49.855	
		Minimum		$24	
		Maximum		$352	
		Range		$327	
		Interquartile Range		$64	
		Skewness		.487	.137
		Kurtosis		1.151	.273
	4277	Mean		$148.90	$4.136
		95% Confidence Interval for Mean	Lower Bound	$140.77	
			Upper Bound	$157.03	
		5% Trimmed Mean		$1̶4̶2̶.̶8̶6̶	
		Median		$132.40	
		Variance		6̶9̶9̶4̶.̶9̶5̶2̶	
		Std. Deviation		$83.636	
		Minimum		$4	
		Maximum		$648	
		Range		$644	
		Interquartile Range		$91	
		Skewness		1.991	.121
		Kurtosis		7.597	.241

VI. CONCLUSIONS

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

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP

Mean		.995
95% Confidence Interval for Mean	Lower Bound	.991
	Upper Bound	.999
Median		.998
95% Confidence Interval for Median	Lower Bound	.996
	Upper Bound	.999
	Actual Coverage	95.6%
Weighted Mean		.989
95% Confidence Interval for Weighted Mean	Lower Bound	.984
	Upper Bound	.994
Price Related Differential		1.006
Coefficient of Dispersion		.057
Coefficient of Variation	Mean Centered	8.5%

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

Commercial/Industrial

Ratio Statistics for CURRTOT / TASP

Mean		.999
95% Confidence Interval for Mean	Lower Bound	.966
	Upper Bound	1.033
Median		.998
95% Confidence Interval for Median	Lower Bound	.981
	Upper Bound	1.013
	Actual Coverage	96.2%
Weighted Mean		.989
95% Confidence Interval for Weighted Mean	Lower Bound	.956
	Upper Bound	1.023
Price Related Differential		1.010
Coefficient of Dispersion		.060
Coefficient of Variation	Mean Centered	10.5%

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

Vacant Land

Ratio Statistics for CURRLND / VTASP

Mean		.990
95% Confidence Interval for Mean	Lower Bound	.978
	Upper Bound	1.002
Median		1.000
95% Confidence Interval for Median	Lower Bound	1.000
	Upper Bound	1.000
	Actual Coverage	95.4%
Weighted Mean		.985
95% Confidence Interval for Weighted Mean	Lower Bound	.973
	Upper Bound	.997
Price Related Differential		1.005
Coefficient of Dispersion		.074
Coefficient of Variation	Mean Centered	12.0%

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

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	48	3.4%
	$25K to $50K	16	1.1%
	$50K to $100K	41	2.9%
	$100K to $150K	70	5.0%
	$150K to $200K	149	10.7%
	$200K to $300K	367	26.4%
	$300K to $500K	335	24.1%
	$500K to $750K	278	20.0%
	$750K to $1,000K	51	3.7%
	Over $1,000K	37	2.7%
Overall		1392	100.0%
Excluded		0	
Total		1392	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.001	1.016	.076	10.7%
$25K to $50K	.920	1.000	.114	14.5%
$50K to $100K	1.000	1.002	.091	12.7%
$100K to $150K	.994	.999	.060	8.8%
$150K to $200K	1.000	1.000	.069	10.9%
$200K to $300K	.999	1.000	.050	7.6%
$300K to $500K	1.000	1.000	.055	8.1%
$500K to $750K	.989	1.001	.052	7.2%
$750K to $1,000K	1.000	1.000	.032	5.0%
Over $1,000K	.968	1.003	.050	7.3%
Overall	.998	1.006	.057	8.5%

Subclass

Case Processing Summary

		Count	Percent
Abstrimp	0	1	.1%
	1212	686	49.3%
	1214	2	.1%
	1215	10	.7%
	1220	1	.1%
	1230	648	46.6%
	1236	44	3.2%
Overall		1392	100.0%
Excluded		0	
Total		1392	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	1.007	1.000	.000	.
1212	.996	1.008	.063	9.4%
1214	.901	1.001	.026	3.7%
1215	.908	.981	.118	15.1%
1220	.869	1.000	.000	.
1230	.999	1.001	.048	7.1%
1236	1.000	1.043	.077	10.7%
Overall	.998	1.006	.057	8.5%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	1	.1%
	Over 100	2	.1%
	75 to 100	9	.6%
	50 to 75	34	2.4%
	25 to 50	396	28.4%
	5 to 25	389	27.9%
	5 or Newer	561	40.3%
Overall		1392	100.0%
Excluded		0	
Total		1392	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	1.007	1.000	.000	.
Over 100	.857	.999	.155	21.9%
75 to 100	.974	1.041	.110	15.2%
50 to 75	.960	.999	.101	16.4%
25 to 50	.998	1.009	.061	9.4%
5 to 25	.999	1.004	.053	8.0%
5 or Newer	.999	1.010	.052	7.2%
Overall	.998	1.006	.057	8.5%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	1	.1%
	LE 500 sf	103	7.4%
	500 to 1,000 sf	483	34.7%
	1,000 to 1,500 sf	412	29.6%
	1,500 to 2,000 sf	241	17.3%
	2,000 to 3,000 sf	126	9.1%
	3,000 sf or Higher	26	1.9%
Overall		1392	100.0%
Excluded		0	
Total		1392	

Ratio Statistics for CURRTOT / TASP

				Coefficient of Variation
Group	Median	Price Related Differential	Coefficient of Dispersion	Median Centered
0	1.007	1.000	.000	.
LE 500 sf	.999	.979	.079	10.8%
500 to 1,000 sf	.997	1.007	.058	8.7%
1,000 to 1,500 sf	.997	1.003	.048	6.9%
1,500 to 2,000 sf	1.001	1.009	.056	8.5%
2,000 to 3,000 sf	.997	1.015	.062	10.0%
3,000 sf or Higher	.999	1.026	.047	8.9%
Overall	.998	1.006	.057	8.5%

Improvement Quality

Case Processing Summary

		Count	Percent
Qual	1.00	2	.1%
	2.00	15	1.1%
	2.50	1	.1%
	3.00	95	6.8%
	3.25	1	.1%
	3.33	1	.1%
	3.50	11	.8%
	3.67	2	.1%
	4.00	718	51.6%
	4.50	27	1.9%
	5.00	450	32.4%
	6.00	68	4.9%
Overall		1391	100.0%
Excluded		1	
Total		1392	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation — Median Centered
1.00	1.123	1.056	.070	9.9%
2.00	1.067	1.031	.072	8.7%
2.50	.987	1.000	.000	.
3.00	.999	1.011	.069	10.6%
3.25	1.533	1.000	.000	.
3.33	1.015	1.000	.000	.
3.50	1.002	1.039	.105	16.8%
3.67	1.007	1.001	.004	.6%
4.00	.997	1.000	.057	8.5%
4.50	.999	1.004	.045	6.0%
5.00	.998	1.009	.052	7.4%
6.00	.999	1.018	.052	7.5%
Overall	.998	1.006	.057	8.5%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$50K to $100K	1	2.5%
	$100K to $150K	4	10.0%
	$150K to $200K	8	20.0%
	$200K to $300K	6	15.0%
	$300K to $500K	4	10.0%
	$500K to $750K	9	22.5%
	$750K to $1,000K	3	7.5%
	Over $1,000K	5	12.5%
Overall		40	100.0%
Excluded		0	
Total		40	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$50K to $100K	.996	1.000	.000	.
$100K to $150K	.994	1.002	.047	5.5%
$150K to $200K	1.030	1.000	.039	5.1%
$200K to $300K	.993	1.014	.143	24.0%
$300K to $500K	.983	.999	.028	3.2%
$500K to $750K	1.000	1.003	.060	8.5%
$750K to $1,000K	.992	.999	.006	1.0%
Over $1,000K	1.005	1.000	.061	11.2%
Overall	.998	1.010	.060	10.5%

Subclass

Case Processing Summary

		Count	Percent
PredUse	2212	7	17.5%
	2215	5	12.5%
	2220	4	10.0%
	2230	13	32.5%
	2235	5	12.5%
	2240	2	5.0%
	2245	4	10.0%
Overall		40	100.0%
Excluded		0	
Total		40	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2212	.959	1.063	.071	10.6%
2215	1.013	.999	.029	4.1%
2220	.984	1.003	.033	5.5%
2230	1.000	1.007	.092	16.5%
2235	.990	1.014	.021	3.3%
2240	.994	1.001	.014	1.9%
2245	.999	1.002	.060	7.2%
Overall	.998	1.010	.060	10.5%

Vacant Land Median Ratio Stratification

Case Processing Summary

		Count	Percent
VPredUse	100	269	70.4%
	200	8	2.1%
	510	4	1.0%
	520	3	.8%
	530	1	.3%
	540	4	1.0%
	550	1	.3%
	600	3	.8%
	1113	1	.3%
	1212	85	22.3%
	1215	1	.3%
	1225	1	.3%
	5170	1	.3%
Overall		382	100.0%
Excluded		0	
Total		382	

Ratio Statistics for CURRLND / VTASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	1.000	1.007	.071	10.6%
200	1.001	.979	.031	5.4%
510	1.026	1.085	.116	19.7%
520	.999	1.001	.002	.3%
530	1.039	1.000	.000	.
540	.965	1.044	.095	20.0%
550	1.000	1.000	.000	.
600	.975	.975	.047	8.8%
1113	1.035	1.000	.000	.
1212	1.000	.995	.078	11.3%
1215	.945	1.000	.000	.
1225	1.000	1.000	.000	.
5170	.016	1.000	.000	.
Overall	1.000	1.005	.074	11.9%