



2020

PITKIN COUNTY PROPERTY ASSESSMENT STUDY



WILDROSE
APPRAISAL, INCORPORATED
Audit Division



September 15, 2020

Ms. Natalie Mullis
Director of Research
Colorado Legislative Council
Room 029, State Capitol Building
Denver, Colorado 80203

RE: Final Report for the 2020 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2020 Colorado Property Assessment Study.

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

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

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

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

A handwritten signature in black ink that reads "Harry J. Fuller". The signature is written in a cursive, flowing style.

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

TABLE OF CONTENTS

Introduction	3
Regional/Historical Sketch of Pitkin County	4
Ratio Analysis.....	6
Time Trending Verification	8
Sold/Unsold Analysis	9
Agricultural Land Study	11
<i>Agricultural Land</i>	11
<i>Agricultural Outbuildings</i>	12
<i>Agricultural Land Under Improvements</i>	13
Sales Verification.....	14
Economic Area Review and Evaluation	16
Natural Resources	17
<i>Earth and Stone Products</i>	17
Vacant Land.....	18
<i>Pitkin County is exempt from the Vacant Land Subdivision Discount Study.</i>	18
Possessory Interest Properties	19
Personal Property Audit	20
Wildrose Auditor Staff.....	22
Appendices.....	23

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.

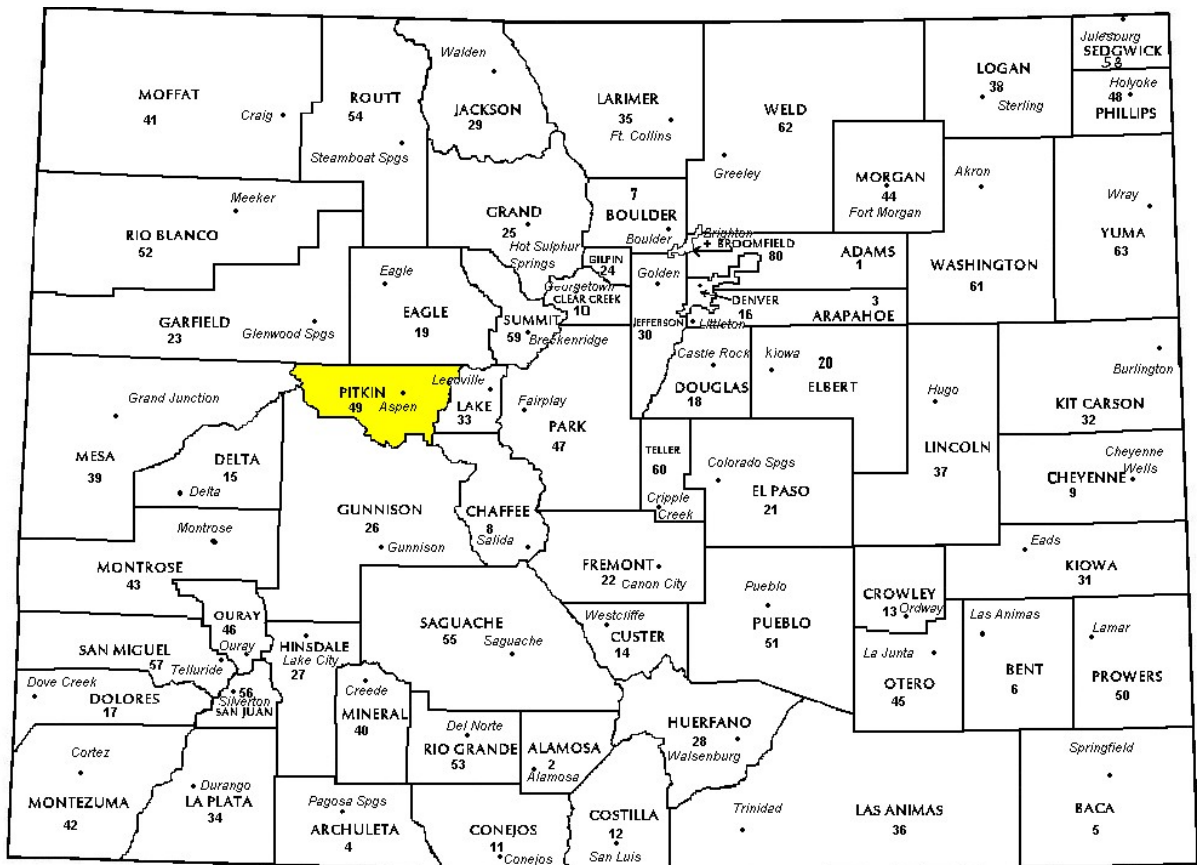
Wildrose Audit has completed the Property Assessment Study for 2020 and is pleased to report its findings for Pitkin County in the following report.

REGIONAL/HISTORICAL SKETCH OF PITKIN COUNTY

Regional Information

Pitkin 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

Pitkin County had an estimated population of approximately 17,752 people with 18.28 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 3.5 percent change from April 1, 2010 to July 1, 2016.

Pitkin County was created in 1881 from a part of Gunnison County. The county was named for Governor Frederick W. Pitkin.

The county seat is Aspen, named by town site surveyor, B. Clark Wheeler, for the quaking aspen trees growing in the area. Originally named Ute City, the community was renamed Aspen in 1880 and in its peak production years of 1891 and 1892 surpassed Leadville as the United States' most productive silver-mining district.

Aspen's development as a ski resort first flickered in the 1930s when investors conceived of a ski area, but the project was interrupted by World War II. Friedl Pfeifer, a member of the 10th Mountain Division who had trained in the area, returned to the area and linked up with industrialist Walter Paepcke and his wife Elizabeth. The Aspen Skiing Corporation was founded in 1946 and the town quickly became a well-known resort.

The city sits along the southeast (upper) end of the Roaring Fork Valley, along the Roaring Fork River, a tributary of the Colorado River. It is surrounded by mountain and wilderness areas on three sides: Red Mountain to the north, Smuggler Mountain to the east, and Aspen Mountain to the south.

(www.Wikipedia.org, William Bright, Colorado Place Names, 3rd Edition, Johnson Books, 2004, p. 141 and 11)

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 1, 2017 and June 30, 2018. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2018 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 Pitkin County are:

Pitkin County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	38	1.000	0.958	7.6	Compliant
Condominium	483	0.999	1.007	7.6	Compliant
Single Family	341	0.994	1.030	8.6	Compliant
Vacant Land	N/A	N/A	N/A	N/A	N/A

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

SBOE, DPT, and Colorado State Statute valuation guidelines.

Recommendations

None

TIME TRENDING VERIFICATION

Methodology

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

trending adequately, and a further examination is warranted. This validation method 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 Pitkin County has complied with the statutory requirements to analyze the effects of time on value in their county. Pitkin 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

Pitkin 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.

We test the hypothesis that the assessor has valued unsold properties consistent with what is observed with the sold properties based on several units of comparison and tests. The units of comparison include the actual value per square foot and the change in value from the previous base year period to the current base year. The first test compares the actual value per square foot between sold and unsold properties by class. The median and mean value per square foot is compared and tested for any significant difference. This is tested using non-parametric methods, such as the Mann-Whitney test for differences in the distributions or medians between sold and unsold groups. It is also examined graphically and from an appraisal perspective. Data can be stratified based on location and subclass. The second test compares the difference in the median change in value from the previous base year to the current base year between sold and unsold properties by class. The same combination of non-parametric and appraisal testing is used as with the first test. A third test employing a valuation model testing a sold/unsold binary variable while controlling for property attributes such as location, size, age and other attributes. The model determines if the sold/unsold variable is statistically and empirically significant. If all three tests indicate a significant difference between sold and unsold properties for a given class, the Auditor may meet with the county to determine if sale chasing is actually occurring,

or if there are other explanations for the observed difference.

If the unsold properties have a higher median value per square foot than the sold properties, or if the median change in value is greater for the unsold properties than the sold properties, the analysis is stopped and the county is concluded to be in compliance with sold and unsold guidelines. All sold and unsold properties in a given class are first tested, although properties with extreme unit values or percent changes can be trimmed to stabilize the analysis. The median is the primary comparison metric, although the mean can also be used as a comparison metric if the distribution supports that type of measure of central tendency.

The first test (unit value method) is applied to both residential and commercial/industrial sold and unsold properties. The second test is applied to sold and unsold vacant land properties. The second test (change in value method) is also applied to residential or commercial sold and unsold properties if the first test results in a significant difference observed and/or tested between sold and unsold properties. The third test (valuation modeling) is used in instances where the results from the first two tests indicate a significant difference between sold and unsold properties. It can also be used when the number of sold and unsold properties is so large that the non-parametric testing is indicating a false rejection of the hypothesis that there is no difference between the sold and unsold property values.

These tests were supported by both tabular and graphics presentations, along with written documentation explaining the methodology used.

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

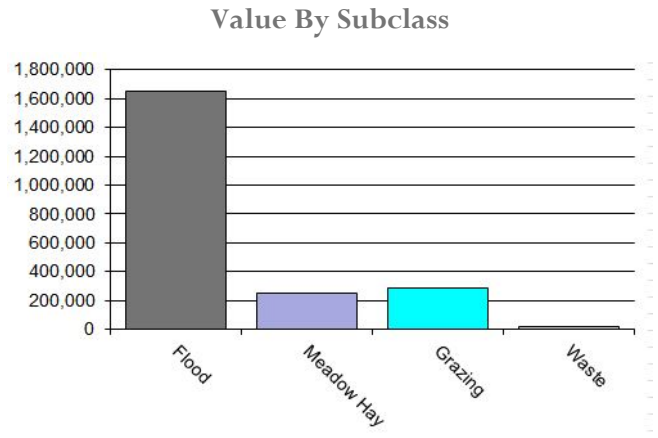
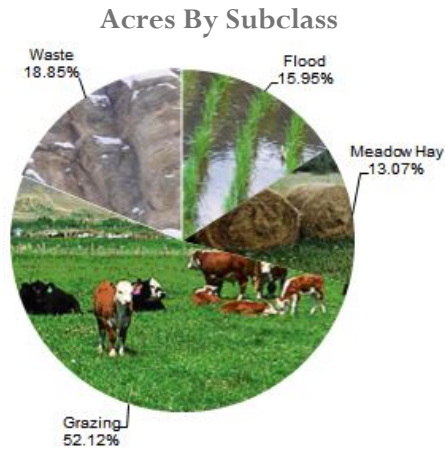
Conclusions

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

Recommendations

None

AGRICULTURAL LAND STUDY



Agricultural Land

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

(See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

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

Pitkin 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	7,256	227.76	1,652,648	1,599,708	1.03
4137	Meadow Hay	5,945	42.34	251,741	251,741	1.00
4147	Grazing	23,707	12.12	287,440	287,440	1.00
4167	Waste	8,575	2.39	20,458	20,458	1.00
Total/Avg		45,483	48.64	2,212,287	2,159,347	1.02

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.

Property Taxation for the valuation of agricultural outbuildings.

Recommendations

None

Conclusions

Pitkin County has complied with the procedures provided by the Division of

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

Pitkin County has used the following methods to discover land under a residential improvement on a farm or ranch that is determined to be not integral under 39-1-102, C.R.S.:

- Questionnaires
- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date

Pitkin County has used the following methods to discover the land area under a residential improvement that is determined to be not integral under 39-1-102, C.R.S.:

- Questionnaires
- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date

Pitkin County has 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 2020 for Pitkin County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 40 sales listed as unqualified.

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

For residential, commercial, and vacant land sales with considerations over \$100,000, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

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

The contractor has reviewed with the assessor any analysis indicating that sales data are inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has



conducted further analysis to determine if the sales included in that code have been assigned appropriately.

Conclusions

Pitkin County appears to be doing a good job of verifying their sales. WRA agreed with the

county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

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

**Pitkin County is exempt from the Vacant Land Subdivision
Discount Study.**

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.

Pitkin 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

Pitkin 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

Pitkin 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.

Pitkin 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
- 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.

Pitkin County submitted their personal property written audit plan and was current for the 2020 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
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Same business type or use
- Businesses with no deletions or additions for 2 or more years



- Non-filing Accounts - Best Information Available
- Accounts close to the \$7,700 actual value exemption status
- Accounts protested with substantial disagreement
- Newspaper Ads

Conclusions

Pitkin 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*

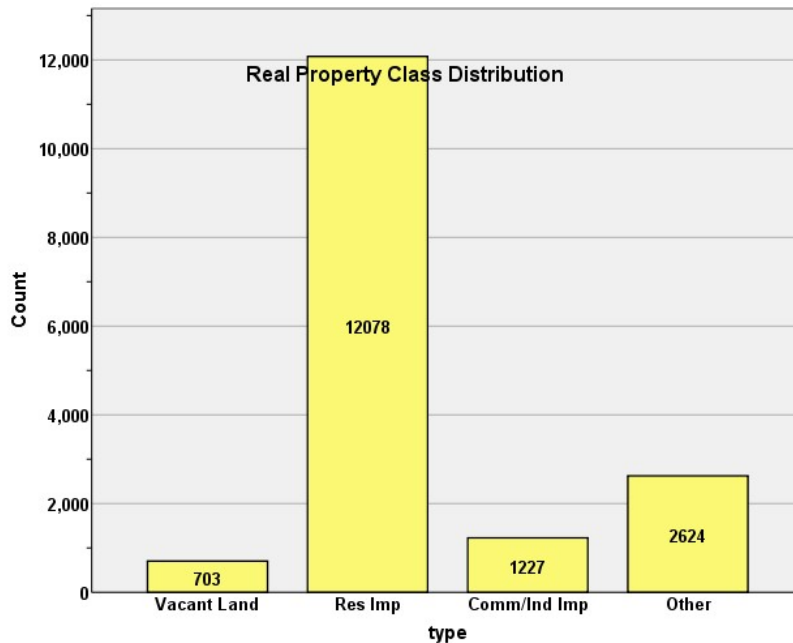
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT FOR PITKIN COUNTY 2020

I. OVERVIEW

Pitkin County is a mountain resort located in western Colorado. The county has a total of 16,632 real property parcels, according to data submitted by the county assessor's office in 2020. The following provides a breakdown of property classes for this county:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1212) accounted for 56.1% of all vacant land parcels. Because there are fewer than 1,200 vacant land parcels, this county is exempt from statistical compliance analysis.

For residential improved properties, single family properties accounted for 44.2% of all residential properties. Residential condominiums accounted for 50.1% 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 7.3% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2020 Colorado Property Assessment Study. Information was provided by the Pitkin Assessor's Office in May 2020. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 877 qualified residential sales for the 24 month period prior to June 30, 2018. The sales ratio analysis was analyzed as follows:

Residential Non-Condominiums (341 Sales)

Median	0.994
Price Related Differential	1.030
Coefficient of Dispersion	8.6

Residential Condominiums (483 Sales)

Median	0.999
Price Related Differential	1.007
Coefficient of Dispersion	7.6

We next stratified the above ratio analysis by neighborhood for both residential non-condominiums and residential condominiums with at least 10 sales, as follows:

Non-Condominiums by Neighborhood: Case Processing Summary

		Count	Percent
NBHD	101001.0	23	30.0%
	106011.0	12	15.0%
	107031.0	16	20.0%
	107041.0	17	21.3%
	111026.0	11	13.8%
Overall		80	100.0%
Excluded		0	
Total		80	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
101001.0	.950	1.030	.118
106011.0	1.009	1.010	.076
107031.0	.950	1.032	.129
107041.0	1.000	1.006	.078
111026.0	1.014	.975	.123
Overall	.969	1.045	.110

Residential Condominiums by Neighborhood: Case Processing Summary

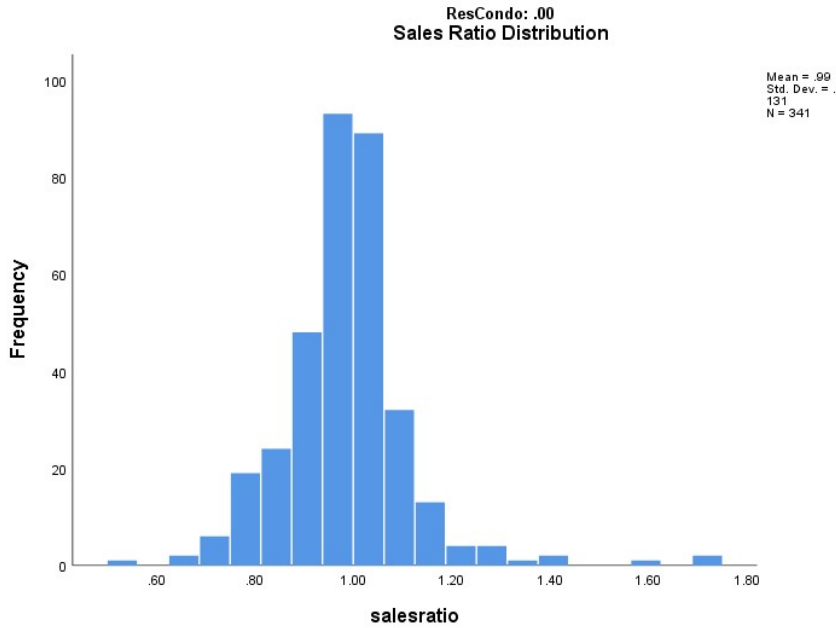
	Count	Percent
402168 - HUNTER CREEK PHASE III	13	2.6%
403176 - INN AT ASPEN, RESIDENTIAL	13	2.6%
407113 - CRESTWOOD	15	3.0%
407177 - INNS OF CRT DBA WOODBRIDGE	11	2.2%
407284 - SEASONS FOUR	12	2.4%
407304 - SNOWMASS MTN	11	2.2%
407339 - WILLOWS AKA ASPENWOODS	13	2.6%
407389 - TOP OF THE VILLAGE/ ALL BLDGS	10	2.0%
407658 - CAPITOL PEAK LODGE	11	2.2%
407684 - VICEROY	42	8.3%
408471 - VILLAS @ ELK RUN	13	2.6%
Overall	505	100.0%
Excluded	0	
Total	505	

Ratio Statistics for CURRTOT / TASP

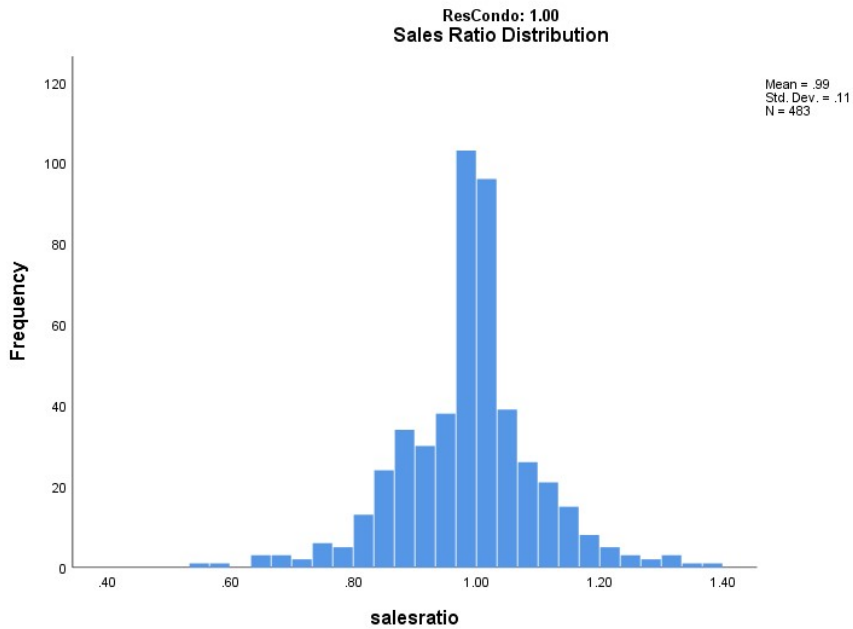
Group	Median	Price Related Differential	Coefficient of Dispersion
402168 - HUNTER CREEK PHASE III		.994	.996
403176 - INN AT ASPEN, RESIDENTIAL		1.033	1.041
407113 - CRESTWOOD		.992	1.081
407177 - INNS OF CRT DBA WOODBRIDGE		1.001	1.002
407284 - SEASONS FOUR		1.003	.991
407304 - SNOWMASS MTN		.999	1.009
407339 - WILLOWS AKA ASPENWOODS		1.000	.999
407389 - TOP OF THE VILLAGE/ ALL BLDGS		1.000	.998
407658 - CAPITOL PEAK LODGE		1.000	1.054
407684 - VICEROY		.996	1.100
408471 - VILLAS @ ELK RUN		.988	1.010
Overall		.994	1.029

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 24-month sale period for any residual market trending. We stratified the sales by residential non-condominiums and residential condominiums (0 = residential non-condominiums, 1 = residential condominiums), with the following results:

Coefficients^a

ResCondo	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
.00	1	(Constant)	.991	.014		70.615	.000
		SalePeriod	.000	.001	-.021	-.392	.695
1.00	1	(Constant)	.978	.009		103.170	.000
		SalePeriod	.001	.001	.052	1.151	.250

a. Dependent Variable: salesratio

Although the above results indicate that residential condominiums had a statistically significant trend, the magnitude of this trend was marginal at best.

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 2020 between each group, stratified by residential non-condominiums and condominiums, as follows:

Report

VALSF

ResCondo	sold	N	Median	Mean
NON-CONDO	UNSOLD	5581	\$850	\$1,138
	SOLD	340	\$718	\$1,121
CONDO	UNSOLD	5427	\$695	\$930
	SOLD	473	\$767	\$1,000

We next stratified this analysis by neighborhoods with at least 10 sales:

Residential Non-Condominiums

Report

VALSF

NBHD	sold	N	Median	Mean
101001.0	UNSOLD	300	\$2,380	\$2,619
	SOLD	24	\$3,015	\$2,916
106011.0	UNSOLD	114	\$515	\$553
	SOLD	12	\$513	\$545
107031.0	UNSOLD	176	\$700	\$723
	SOLD	16	\$788	\$737
107041.0	UNSOLD	186	\$622	\$641
	SOLD	17	\$648	\$637
111026.0	UNSOLD	33	\$238	\$244
	SOLD	11	\$297	\$313

Residential Condominiums Report

CondoNBHD	sold	N	Median	Mean
402168 - HUNTER CREEK	UNSOLD	117	\$934	\$920
PHASE III	SOLD	13	\$925	\$924
403176 - INN AT ASPEN, RESIDENTIAL	UNSOLD	111	\$563	\$570
	SOLD	13	\$596	\$580
407113 - CRESTWOOD	UNSOLD	121	\$557	\$562
	SOLD	15	\$557	\$547
407177 - INNS OF CRT DBA WOODBIDGE	UNSOLD	73	\$540	\$530
	SOLD	11	\$543	\$538
407284 - SEASONS FOUR	UNSOLD	84	\$472	\$478
	SOLD	12	\$485	\$485
407304 - SNOWMASS MTN	UNSOLD	48	\$479	\$476
	SOLD	11	\$484	\$489
407339 - WILLOWS AKA ASPENWOODS	UNSOLD	39	\$446	\$463
	SOLD	13	\$450	\$450
407389 - TOP OF THE VILLAGE/ ALL BLDGS	UNSOLD	100	\$702	\$701
	SOLD	10	\$721	\$706
407658 - CAPITOL PEAK LODGE	UNSOLD	62	\$828	\$799
	SOLD	11	\$828	\$838
407684 - VICEROY	UNSOLD	111	\$590	\$596
	SOLD	42	\$590	\$596
408471 - VILLAS @ ELK RUN	UNSOLD	75	\$339	\$337
	SOLD	13	\$339	\$347

Based on these analyses, we concluded that the assessor valued sold and unsold residential properties consistently.

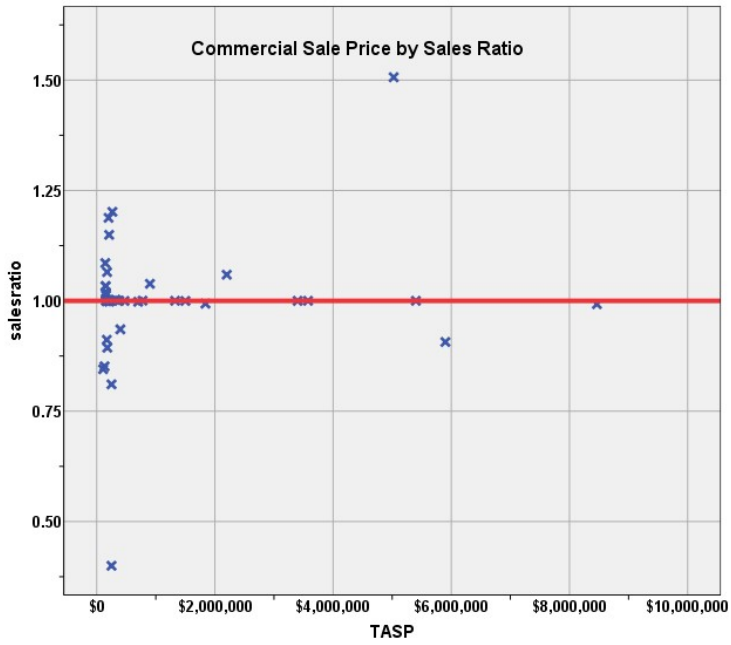
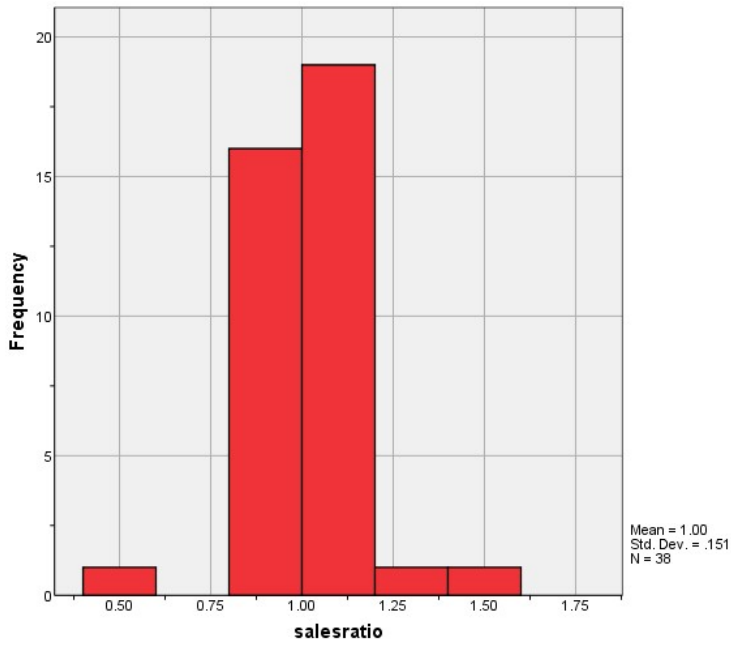
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 38 qualified commercial and industrial sales in the 24-month sale period ending June 30, 2018.

The sales ratio analysis was analyzed as follows:

Median	1.000
Price Related Differential	0.958
Coefficient of Dispersion	7.6

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



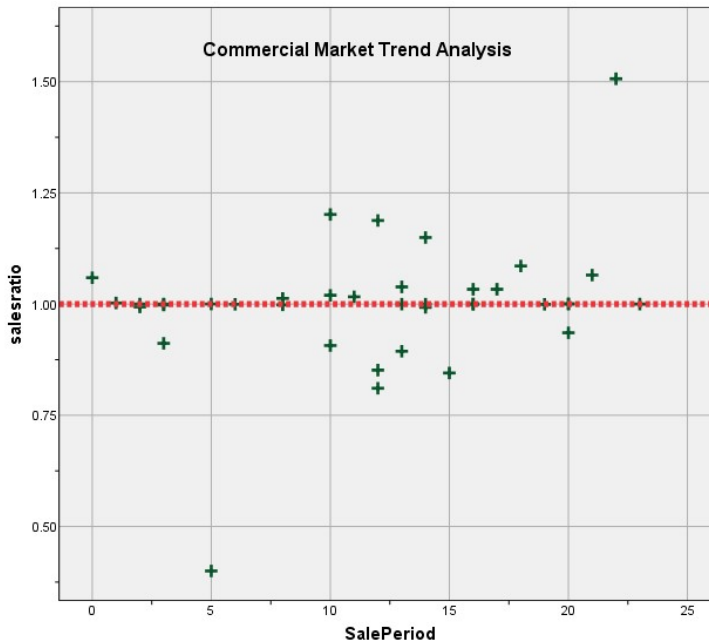
Commercial Market Trend Analysis

The commercial sales were analyzed, examining the sale ratios across the 24 month sale period with the following results:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.925	.050		18.450	.000
	SalePeriod	.006	.004	.267	1.661	.105

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concluded that the assessor has adequately addressed market trending for commercial and industrial sales.

Sold/Unsold Analysis

We compared the change in taxable value between 2018 and 2020 between sold and unsold commercial properties to determine if the assessor was valuing each group consistently, as follows:

Report

DIFF	N	Median	Mean
UNSOLD	1167	1.1222	1.1617
SOLD	38	1.0712	1.1715

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DIFF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.189	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .00.

We also examined sold and unsold commercial properties by subclass, using the change in taxable value method, to determine if both were valued in a similar manner by the assessor, as follows:

Report

DIFF	ABSTRIMP	sold	N	Median	Mean
2212.00	UNSOLD		38	1.1252	1.1267
	SOLD		4	1.0684	1.2053
2220.00	UNSOLD		48	1.0657	1.0755
	SOLD		3	1.0650	1.1182
2230.00	UNSOLD		45	1.1219	1.1480
	SOLD		1	1.0674	1.0674
2245.00	UNSOLD		884	1.1211	1.1667
	SOLD		27	1.0667	1.1593

Report

DIFF	ABSTRIMP	sold	N	Median	Mean
2212.00	UNSOLD		37	1.13	1.15
	SOLD		5	1.12	1.24
2220.00	UNSOLD		48	1.07	1.08
	SOLD		3	1.07	1.12
2230.00	UNSOLD		45	1.12	1.15
	SOLD		2	1.13	1.13
2245.00	UNSOLD		879	1.12	1.18
	SOLD		27	1.07	1.16
Total	UNSOLD		1160	1.12	1.17
	SOLD		39	1.09	1.17

Based on the above results, there was no evidence that sold properties were valued consistently higher than unsold properties.

V. VACANT LAND SALE RESULTS

Based on the guidelines of the 2020 audit, vacant land properties were exempt from analysis.

V. CONCLUSIONS

Based on this statistical analysis, there were no significant compliance issues concluded for Pitkin County as of the date of this report for residential and commercial/industrial properties.

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP													
ResCondo	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
		Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.00	.986	.972	1.000	.994	.980	1.000	96.1%	.957	.938	.976	1.030	.086	13.3%
1.00	.988	.978	.997	.999	.997	1.000	95.5%	.980	.971	.990	1.007	.076	11.1%

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

Commercial

Ratio Statistics for CURRTOT / TASP													
Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered	
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound				
.999	.949	1.048	1.000	.999	1.013	96.6%	1.042	.930	1.154	.958	.076	15.2%	

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 (0 = Non-Condominiums, 1 = Condominiums)

Case Processing Summary

ResCondo			Count	Percent
.00	SPRec	\$150K to \$200K	4	1.2%
		\$200K to \$300K	4	1.2%
		\$300K to \$500K	29	8.5%
		\$500K to \$750K	54	15.8%
		\$750K to \$1,000K	29	8.5%
		Over \$1,000K	221	64.8%
		Overall	341	100.0%
	Excluded	0		
	Total	341		
1.00	SPRec	\$150K to \$200K	15	3.1%
		\$200K to \$300K	54	11.2%
		\$300K to \$500K	78	16.1%
		\$500K to \$750K	92	19.0%
		\$750K to \$1,000K	58	12.0%
		Over \$1,000K	178	36.9%
		\$50K to \$100K	5	1.0%
		\$100K to \$150K	3	0.6%
	Overall	483	100.0%	
	Excluded	0		
Total	483			

Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	\$150K to \$200K	1.282	1.016	.148	24.3%
	\$200K to \$300K	1.104	1.012	.134	20.2%
	\$300K to \$500K	.967	.996	.081	10.2%
	\$500K to \$750K	.993	1.001	.069	11.6%
	\$750K to \$1,000K	.997	1.002	.067	11.6%
	Over \$1,000K	.991	1.023	.088	13.0%
	Overall	.994	1.030	.086	13.2%
1.00	\$150K to \$200K	1.039	.997	.092	10.9%
	\$200K to \$300K	1.008	1.003	.074	9.6%
	\$300K to \$500K	.998	1.001	.101	14.3%
	\$500K to \$750K	.999	1.002	.067	9.6%
	\$750K to \$1,000K	1.000	.999	.070	10.8%
	Over \$1,000K	.998	1.002	.067	10.5%
	\$50K to \$100K	1.004	1.009	.115	15.8%
	\$100K to \$150K	.938	1.003	.049	7.7%
	Overall	.999	1.007	.076	11.0%

Subclass (0 = Non-Condominiums, 1 = Condominiums)

Case Processing Summary

ResCondo			Count	Percent
.00	ABSTRIMP	1212.00	337	98.8%
		1215.00	2	0.6%
		1220.00	1	0.3%
		1225.00	1	0.3%
	Overall		341	100.0%
	Excluded		0	
	Total		341	
1.00	ABSTRIMP	1230.00	483	100.0%
	Overall		483	100.0%
	Excluded		0	
	Total		483	

Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	1212.00	.994	1.029	.086	13.2%
	1215.00	1.032	.992	.033	4.6%
	1220.00	.962	1.000	.000	.
	1225.00	.757	1.000	.000	.
	Overall	.994	1.030	.086	13.2%
1.00	1230.00	.999	1.007	.076	11.0%
	Overall	.999	1.007	.076	11.0%

Improvement Age (0 = Non-Condominiums, 1 = Condominiums)

Case Processing Summary

ResCondo			Count	Percent
.00	AgeRec	.00	1	0.3%
		Over 100	12	3.5%
		75 to 100	1	0.3%
		50 to 75	22	6.5%
		25 to 50	132	38.7%
		5 to 25	139	40.8%
		5 or Newer	34	10.0%
	Overall		341	100.0%
	Excluded		0	
		Total		341
1.00	AgeRec	Over 100	10	2.1%
		50 to 75	40	8.3%
		25 to 50	327	67.7%
		5 to 25	103	21.3%
		5 or Newer	3	0.6%
	Overall		483	100.0%
Excluded		0		
	Total		483	

Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.00	.634	1.000	.000	.
	Over 100	.917	.983	.153	21.1%
	75 to 100	.998	1.000	.000	.
	50 to 75	.969	.998	.082	11.7%
	25 to 50	.993	1.026	.079	11.3%
	5 to 25	1.000	1.029	.078	12.1%
	5 or Newer	.991	1.054	.119	19.9%
	Overall	.994	1.030	.086	13.2%
1.00	Over 100	.974	1.000	.061	8.2%
	50 to 75	1.000	.996	.070	10.0%
	25 to 50	.999	1.012	.071	10.3%
	5 to 25	1.000	1.003	.094	13.9%
	5 or Newer	.998	.989	.021	4.2%
	Overall	.999	1.007	.076	11.0%

Improved Area (0 = Non-Condominiums, 1 = Condominiums)

Case Processing Summary

ResCondo			Count	Percent
.00	ImpSFRec	LE 500 sf	1	0.3%
		500 to 1,000 sf	16	4.7%
		1,000 to 1,500 sf	30	8.8%
		1,500 to 2,000 sf	53	15.5%
		2,000 to 3,000 sf	78	22.9%
		3,000 sf or Higher	163	47.8%
	Overall		341	100.0%
	Excluded		0	
	Total		341	
1.00	ImpSFRec	LE 500 sf	98	20.3%
		500 to 1,000 sf	169	35.0%
		1,000 to 1,500 sf	133	27.5%
		1,500 to 2,000 sf	35	7.2%
		2,000 to 3,000 sf	33	6.8%
		3,000 sf or Higher	15	3.1%
	Overall		483	100.0%
	Excluded		0	
	Total		483	

Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	LE 500 sf	.634	1.000	.000	.
	500 to 1,000 sf	.976	1.100	.153	22.2%
	1,000 to 1,500 sf	.978	1.037	.118	19.7%
	1,500 to 2,000 sf	.986	1.020	.059	8.5%
	2,000 to 3,000 sf	.994	1.019	.082	12.8%
	3,000 sf or Higher	.998	1.028	.083	12.1%
	Overall	.994	1.030	.086	13.2%
1.00	LE 500 sf	.998	1.018	.081	10.8%
	500 to 1,000 sf	1.000	1.007	.080	11.7%
	1,000 to 1,500 sf	.999	1.007	.072	10.9%
	1,500 to 2,000 sf	.987	.993	.070	10.6%
	2,000 to 3,000 sf	.999	1.014	.076	11.7%
	3,000 sf or Higher	.999	1.004	.033	4.8%
	Overall	.999	1.007	.076	11.0%

Improvement Quality (0 = Non-Condominiums, 1 = Condominiums)

Case Processing Summary

ResCondo	Count	Percent	
.00	QUALITY	1	0.3%
	1 - POOR	1	0.3%
	2 - FAIR	15	4.4%
	3 - AVERAGE	104	30.5%
	3 - FAIR	1	0.3%
	4 - AVERAGE	4	1.2%
	4 - GOOD	76	22.3%
	5 - GOOD	2	0.6%
	5 - V GOOD	78	22.9%
	6 - EXCELLENT	51	15.0%
	7 - SUPERIOR	8	2.3%
	Overall	341	100.0%
	Excluded	0	
Total	341		
1.00	QUALITY	1	0.2%
	20 - FAIR	7	1.4%
	30 - TYPICAL/AVG	121	25.1%
	40 - GOOD	139	28.8%
	50 - VERY GOOD	152	31.5%
	60 - EXCELLENT	54	11.2%
	70 - SUPERIOR	9	1.9%
	Overall	483	100.0%
	Excluded	0	
	Total	483	

Ratio Statistics for CURRTOT / TASP

ResCondo	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00		.634	1.000	.000	.
	1 - POOR	.500	1.000	.000	.
	2 - FAIR	.994	1.049	.062	9.0%
	3 - AVERAGE	.970	1.026	.075	10.3%
	3 - FAIR	.725	1.000	.000	.
	4 - AVERAGE	1.114	1.077	.276	36.6%
	4 - GOOD	1.000	1.015	.077	12.2%
	5 - GOOD	1.079	1.014	.070	9.9%
	5 - V GOOD	.994	1.026	.105	15.7%
	6 - EXCELLENT	.997	1.021	.065	10.3%
	7 - SUPERIOR	.981	1.031	.070	9.6%
	Overall	.994	1.030	.086	13.2%
1.00	10 - POOR	.866	1.000	.000	.
	20 - FAIR	.938	1.033	.056	7.2%
	30 - TYPICAL/AVG	1.000	.992	.074	10.5%
	40 - GOOD	1.000	1.008	.095	13.8%
	50 - VERY GOOD	.998	.999	.059	8.5%
	60 - EXCELLENT	.998	1.004	.067	10.5%
	70 - SUPERIOR	.875	.996	.067	8.8%
	Overall	.999	1.007	.076	11.0%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	\$100K to \$150K	5	13.2%
	\$150K to \$200K	10	26.3%
	\$200K to \$300K	6	15.8%
	\$300K to \$500K	4	10.5%
	\$500K to \$750K	1	2.6%
	\$750K to \$1,000K	2	5.3%
	Over \$1,000K	10	26.3%
Overall		38	100.0%
Excluded		0	
Total		38	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$100K to \$150K	1.033	.990	.082	12.9%
\$150K to \$200K	1.006	.997	.049	8.0%
\$200K to \$300K	.999	1.006	.191	30.3%
\$300K to \$500K	1.000	1.000	.017	3.7%
\$500K to \$750K	.998	1.000	.000	.
\$750K to \$1,000K	1.019	.999	.019	2.6%
Over \$1,000K	1.000	.993	.067	17.3%
Overall	1.000	.958	.076	15.1%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1723.50	1	2.6%
	1735.00	1	2.6%
	2212.00	4	10.5%
	2215.00	1	2.6%
	2220.00	3	7.9%
	2230.00	1	2.6%
	2245.00	27	71.1%
Overall		38	100.0%
Excluded		0	
Total		38	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1723.50	.998	1.000	.000	.
1735.00	1.507	1.000	.000	.
2212.00	.997	1.023	.035	5.8%
2215.00	.993	1.000	.000	.
2220.00	1.000	1.000	.000	0.0%
2230.00	.935	1.000	.000	.
2245.00	1.000	.982	.080	14.9%
Overall	1.000	.958	.076	15.1%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	.00	10	26.3%
	Over 100	4	10.5%
	50 to 75	2	5.3%
	25 to 50	13	34.2%
	5 to 25	9	23.7%
Overall		38	100.0%
Excluded		0	
Total		38	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	1.006	1.030	.090	20.7%
Over 100	1.000	1.001	.002	0.4%
50 to 75	.973	1.052	.068	9.6%
25 to 50	1.000	.910	.089	17.6%
5 to 25	.998	.996	.075	10.3%
Overall	1.000	.958	.076	15.1%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	17	44.7%
	500 to 1,000 sf	9	23.7%
	1,000 to 1,500 sf	3	7.9%
	1,500 to 2,000 sf	4	10.5%
	2,000 to 3,000 sf	2	5.3%
	3,000 sf or Higher	3	7.9%
Overall		38	100.0%
Excluded		0	
Total		38	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.000	.960	.095	17.8%
500 to 1,000 sf	1.000	1.026	.038	7.7%
1,000 to 1,500 sf	1.059	1.025	.047	7.2%
1,500 to 2,000 sf	.997	.993	.027	4.3%
2,000 to 3,000 sf	.952	1.039	.048	6.8%
3,000 sf or Higher	1.000	.952	.169	35.8%
Overall	1.000	.958	.076	15.1%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		10	26.3%
	3 - AVERAGE	14	36.8%
	4 - GOOD-BASE	12	31.6%
	5 - VERY GOOD	2	5.3%
Overall		38	100.0%
Excluded		0	
Total		38	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	1.006	1.030	.090	20.7%
3 - AVERAGE	1.000	.831	.110	17.7%
4 - GOOD-BASE	1.000	1.026	.030	6.9%
5 - VERY GOOD	1.032	1.003	.032	4.6%
Overall	1.000	.958	.076	15.1%