2022
KIT CARSON COUNTY PROPERTY ASSESSMENT STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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APPRAISAL, INCORPORATED
Audit Division

September 15, 2022

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

RE: Final Report for the 2022 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2022 Colorado Property Assessment Study.

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

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

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

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

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

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INTRODUCTION

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 2022 and is pleased to report its findings for Kit Carson County in the following report.

REGIONAL/HISTORICAL SKETCH OF KIT CARSON COUNTY

Regional Information

Kit Carson County is located in the Eastern Plains region of Colorado. The Eastern Plains of Colorado refer to the region on the east side of the Rocky Mountain. It is east of the population centers of the Front Range,

including Baca, Bent, Cheyenne, Crowley, Elbert, Kiowa, Kit Carson, Lincoln, Logan, Morgan, Otero, Phillips, Prowers, Sedgwick, Washington, and Yuma counties.
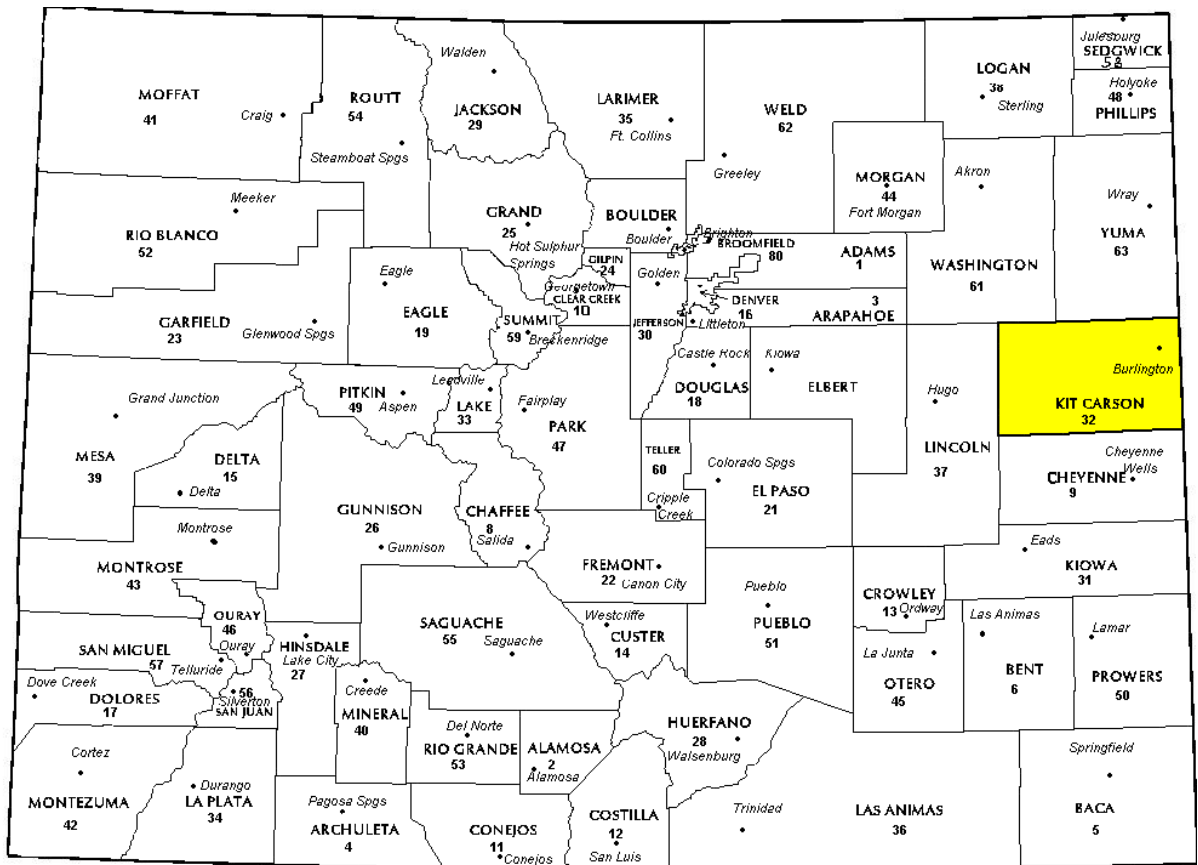
Historical Information

Kit Carson County has approximately 2160.8 square miles and an estimated population of approximately 7,097 people, according to the U.S. Census Bureau's 2020 estimated census data. This represents a -14.2 percent change from April 1, 2010 to July 1, 2019.

Kit Carson County is on the I-70 corridor in East Central Colorado at the Kansas border. It is among the State's top livestock, wheat and corn producing counties. Founded in 1889, its county seat is located in Burlington.

Founded in 1838, and at one time the western terminus for the Union Pacific Railroad, Kit Carson's location has made it a commercial trade center. With wide tracts of prairie grassland and more than 400 active oil and gas wells, it's no surprise that farming, cattle ranching and the production of oil are the area's chief industries.

Burlington was originally laid out one mile west of its present location in 1887 by a man named Lowell in anticipation of the arrival of the railroad. In addition to having the location wrong, Lowell also did not have title to the land. When the railroad did arrive (the Chicago, Rock Island and Pacific Railroad), it built its depot at the present site of Burlington and those who had built in Old Burlington moved their building to the new townsite. Trains began running in 1888.

The county is home to the Kit Carson Museum and other notable buildings, including the old pool hall and pumphouse which are now on the National Register of Historic Places. One of the finest examples of the wooden carousels carved in America between 1885 and the 1930's is located on the county fairgrounds in Burlington. The sixth of 74 carousels manufactured by the Philadelphia Toboggan Company (PTC) between 1904 and 1933, the Kit Carson County Carousel is a three-row, stationary machine housed in a 12-sided frame building. It is the only antique carousel in America still having original paint on both the scenery panels and on the animals. PTC No.6 is the only surviving menagerie carousel made by PTC.

(Wikipedia.org, kitcarsoncounty.org & kitcarsoncountycarousel.com)

RATIO ANALYSIS

Methodology

All significant classes of property were analyzed. Sales were collected for each property class over the eighteen month period from January 1, 2019 through June 30th, 2020. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

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.

All sixty-four counties were examined for compliance on the economic area level. Where there were sufficient sales data, the neighborhood and subdivision levels were tested for compliance. Although counties are determined to be in or out of compliance at the class level, non-compliant economic areas, neighborhoods and subdivisions (where applicable) were discussed with the Assessor.

Data on the individual economic areas, neighborhoods and subdivisions are found in the STATISTICAL APPENDIX.

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 Kit Carson County are:

Kit Carson County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	31	0.996	0.983	14.1	Compliant
Single Family	112	0.986	1.006	11.3	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 Kit Carson County is in compliance with SBOE, DPT, and Colorado State Statute valuation guidelines.

Recommendations

None

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 Kit Carson County has complied with the statutory requirements to analyze the effects of time on value in their county. Kit Carson County has also satisfactorily applied the results of their time trending analysis to arrive at the time adjusted sales price (TASP).

Recommendations

None

S O L D / U N S O L D   A N A L Y S I S

Methodology

Kit Carson 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
Single Family	Compliant
Vacant Land	N/A

Conclusions

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

Recommendations

None

AGRICULTURAL LAND STUDY
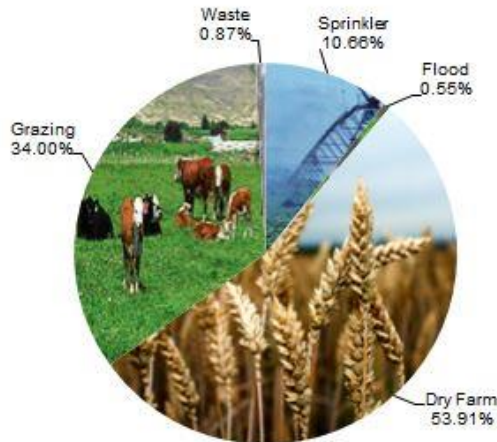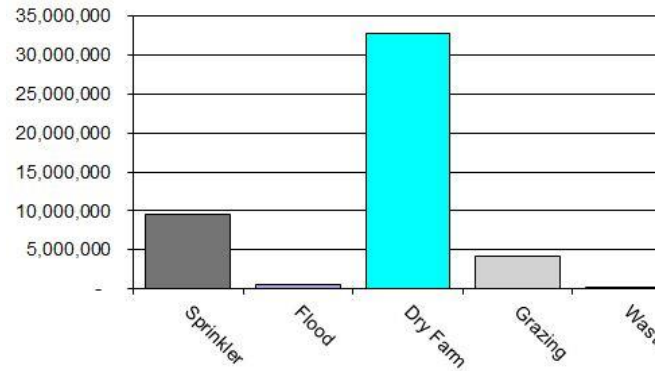
Agricultural Land

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:

Kit Carson County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4107	Sprinkler	132,211	61.90	8,184,509	8,285,360	0.99
4117	Flood	6,749	61.90	417,796	422,944	0.99
4127	Dry Farm	718,787	42.05	30,227,840	30,509,766	0.99
4147	Grazing	498,015	8.42	4,194,118	4,194,118	1.00
4167	Waste	11,476	2.20	25,263	25,263	1.00
Total/Avg		**1,367,238**	**31.49**	**43,049,525**	**43,437,451**	**0.99**

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

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

Recommendations

None

Agricultural Land Under Improvements

Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.19 and 5.20 were being followed.

Conclusions

Kit Carson 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
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry
- Internet

Kit Carson 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.:

- Property Record Card Analysis
- Field Inspections
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Kit Carson 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 2022 for Kit Carson County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 43 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

Kit Carson County appears to be doing an adequate 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

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

Recommendations

None

NATURAL RESOURCES

Earth and Stone Products

Methodology

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

Conclusions

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

Recommendations

None

Producing Oil and Gas

Methodology

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

STATUTORY REFERENCES

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

(2) The valuation for assessment of leaseholds and lands producing oil or gas shall be determined as provided in article 7 of this title. § 39-1-103, C.R.S.

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

Valuation:
Valuation for assessment.

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

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

(b) The selling price of oil or gas sold in the same field area for oil or gas transported from the premises which is not sold during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year. § 39-7-102, C.R.S.

Conclusions

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

Recommendations

None

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2022 in Kit Carson County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year can be accomplished by reducing the absorption period by one year.

In instances where the number of sales within an approved plat was less than the absorption rate per year calculated for the plat, the absorption period was left unchanged.

Conclusions

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

Recommendations

None

POSSESSORY INTEREST PROPERTIES

Possessory Interest

Possessory interest property discovery and valuation is described in the Assessor's Reference Library (ARL) Volume 3 section 7 in accordance with the requirements of Chapter 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Chapter 7: A private property interest in government-owned property or the right to the occupancy and use of any benefit in government-owned property that has been granted under lease, permit, license, concession, contract, or other agreement.

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

Conclusions

Kit Carson 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

Kit Carson 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.

Kit Carson 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.

Kit Carson County submitted their personal property written audit plan and was current for the 2022 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 $50,000 actual value exemption status
- Accounts protested with substantial disagreement

Conclusions

Kit Carson 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

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APPENDICES

STATISTICAL COMPLIANCE REPORT
FOR KIT CARSON COUNTY
2022

I. OVERVIEW

Kit Carson County is an agricultural county located in eastern Colorado. The county has a total of 9,333 real property parcels, according to data submitted by the county assessor's office in 2022. The following provides a breakdown of property classes for this county:

Based on the number of vacant land parcels in Kit Carson County, we were not required to analyze this class of property for audit compliance.

For residential improved properties, single family properties accounted 96.6% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison.

Based on the Audit questionnaire responses from the assessor and the number of residential sales, it was not possible to stratify the sales ratio analysis by either economic area or by neighborhood.

II. DATA FILES

The following sales analyses were based on the requirements of the 2022 Colorado Property Assessment Study. Information was provided by the Kit Carson Assessor's Office in April 2022. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 112 qualified residential sales for this analysis. The sales spanned the period from July 1, 2018 to June 30, 2020. The sales ratio analysis results were as follows:

Median	**0.986**
Price Related Differential	**1.006**
Coefficient of Dispersion	**11.3**

The following graphs describe further the sales ratio distribution for all of these properties:
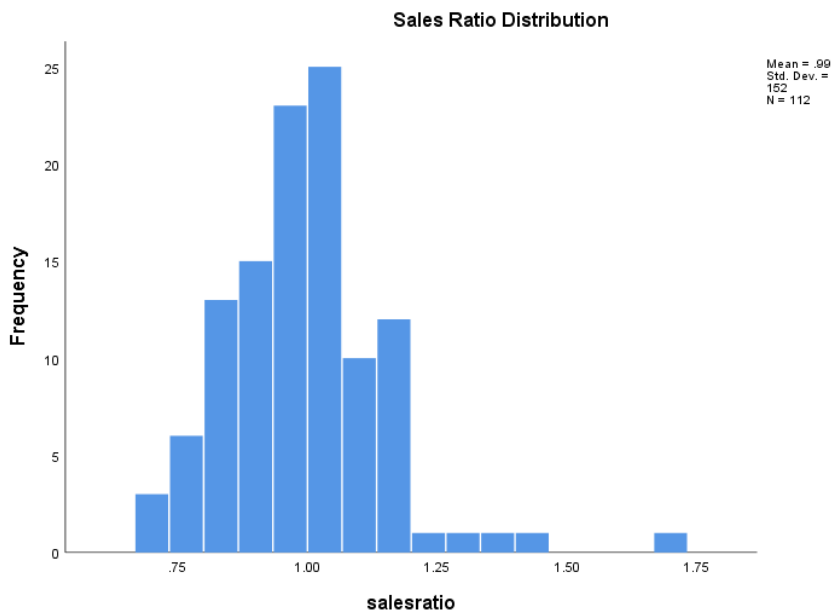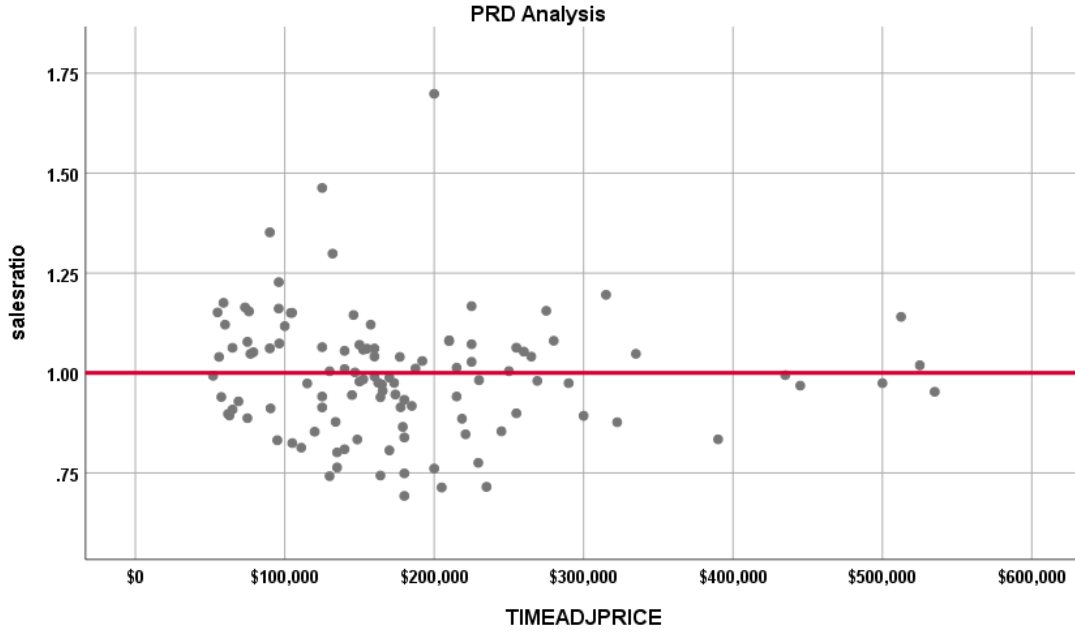
Subclass 1212 PRD Analysis

We next analyzed residential properties identified as 1212 using the state abstract code system. These include single family residences, town homes and purged manufactured homes. The following indicates the distribution of sales ratios across the sale price spectrum:

ALL 1212 SALES
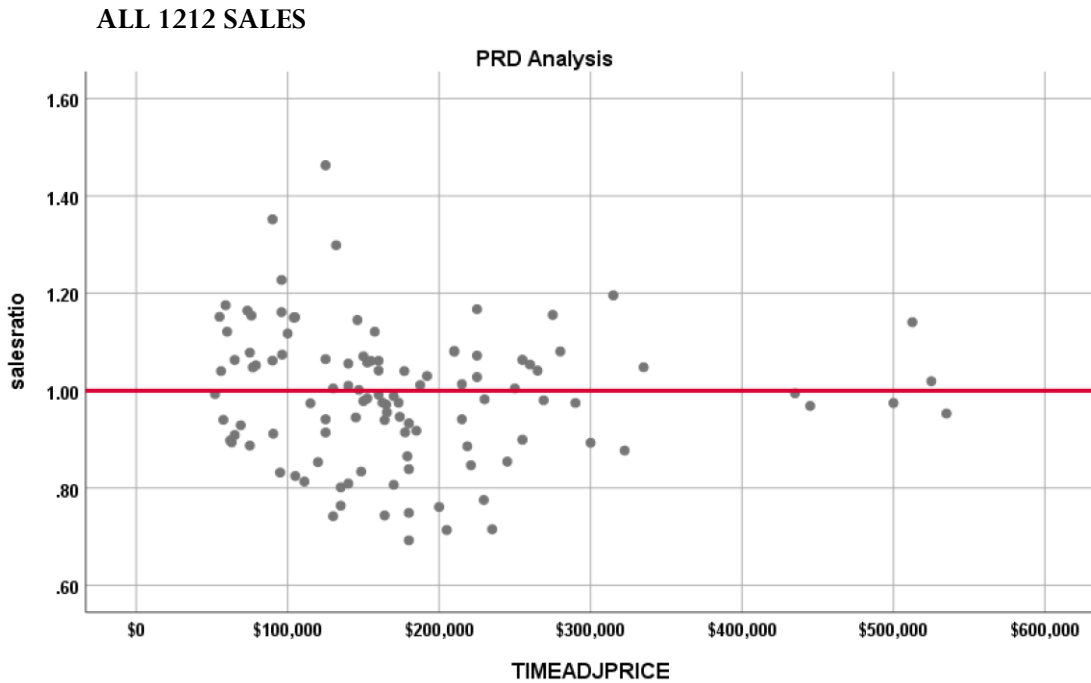
The Price-Related Differential (PRD) for all sales is 1.006; for the 1212-only sales in the above graph, the PRD is 1.005. Both are within IAAO standards for the PRD. We also performed a regression

analysis between the sales ratio and the assessor's current value to further test for regressivity or progressivity in the residential 1212 sales valuation, as follows:

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.956	.026		37.441	.000
	CURRTOT	.000000182	.000	.139	1.450	.150

a. Dependent Variable: salesratio

The slope of the line at 0.000000182 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array. We also stratified the sales ratio analysis by the sale price range, as follows:

Case Processing Summary

		Count	Percent
SPRec	LT $100K	25	22.9%
	$100K to $200K	51	46.8%
	$200K to $300K	24	22.0%
	$300K to $400K	3	2.8%
	$400K to $500K	3	2.8%
	$500K to $600K	3	2.8%
Overall		109	100.0%
Excluded		0	
Total		109	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
LT $100K	1.062	.995	.094
$100K to $200K	.974	1.006	.110
$200K to $300K	.993	.997	.100
$300K to $400K	1.048	1.001	.101
$400K to $500K	.975	1.000	.009
$500K to $600K	1.019	1.001	.061
Overall	.989	1.005	.107

The above table indicates that the sales ratio distribution was more or less consistent across the sale price range for Kit Carson County.

Residential Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.011	.026		38.723	.000
	SalePeriod	-.002	.002	-.081	-.857	.393

a. Dependent Variable: salesratio

Sales Ratio Market Trend
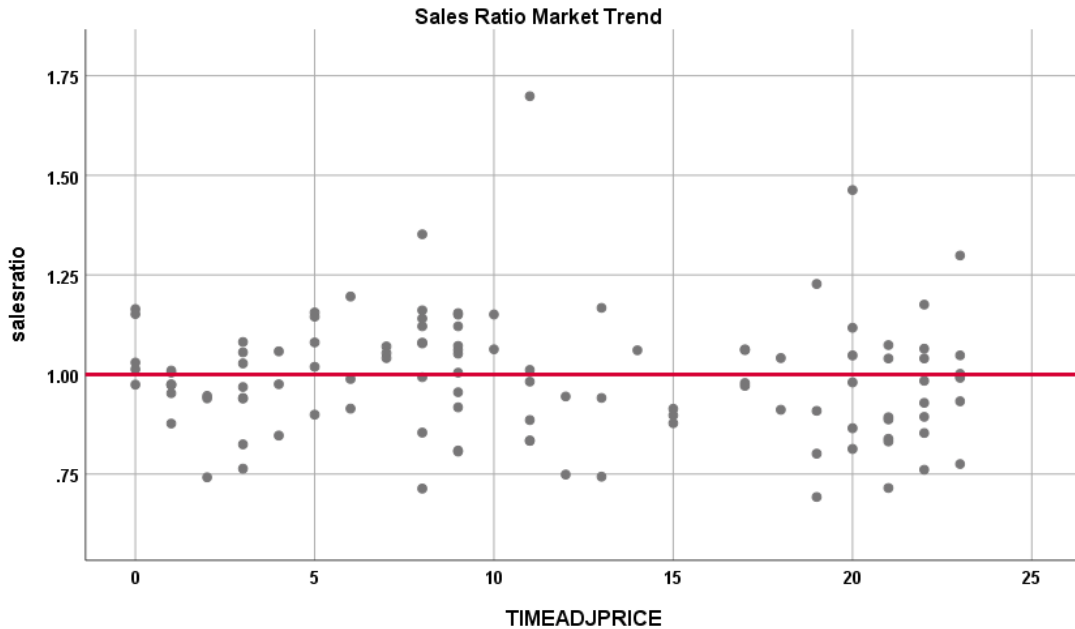
The lack of a significant sale ratio trend over the 24-month period indicates that the assessor has adequately adjusted for any market trending in their residential sale analysis.

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 2022 between each group, as follows:

Report

VALSF

sold	N	Median	Mean
UNSOLD	2004	$88	$95
SOLD	112	$112	$118

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of VALSF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .01.

Due to the marginally significant results in the above comparison analysis, we applied the second comparison test that compares the median and mean change in value between taxable years 2018 and 2020, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	1935	1.08	1.11
SOLD	108	1.14	1.22

The second test indicated that sold and unsold residential properties were adjusted in a similar manner between base years. We next stratified this analysis by neighborhoods with at least 5 sales, as follows:

Report

DIFF

NBHD	sold	N	Median	Mean
100.0	UNSOLD	987	1.04	1.08
	SOLD	64	1.10	1.18
200.0	UNSOLD	249	1.16	1.19
	SOLD	10	1.42	1.40
200.1	UNSOLD	239	1.21	1.25
	SOLD	14	1.33	1.47
500.0	UNSOLD	157	1.04	1.07
	SOLD	8	1.02	1.01

The above results indicate no consistent pattern where sold properties were adjusted from 2018 to 2020 by a greater amount.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

A total of 31 valid and qualified sales were identified in the five year period ending June 30, 2020.

The ratio analysis was completed as follows:

Median	0.996
Price Related Differential	0.983
Coefficient of Dispersion	14.1

The above table indicates that the Kit Carson County commercial/industrial sale ratios were in compliance with the SBOE standards, both overall and by relevant subclass (none in this case due to the small number of sales). The following histogram and scatter plot describe the sales ratio distribution further:

Mean = .92
Std. Dev. = .216
N = 31

Commercial Sale Price by Sales Ratio
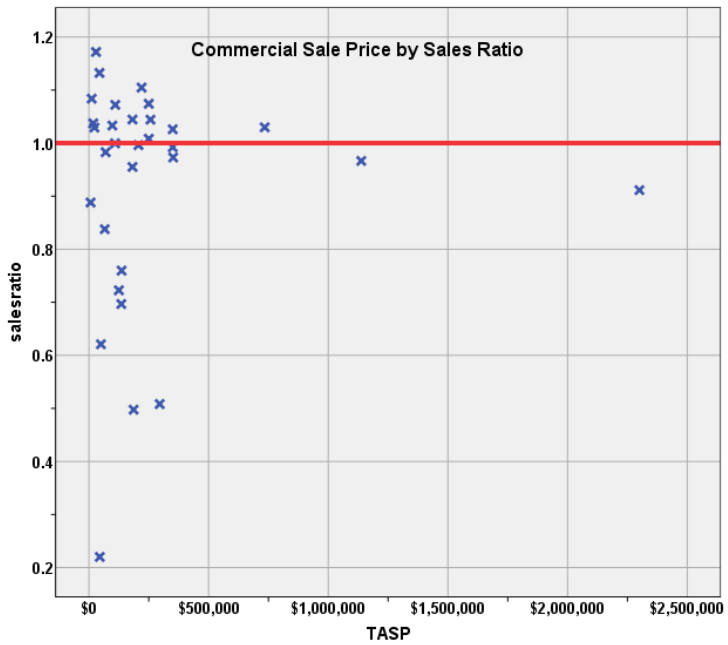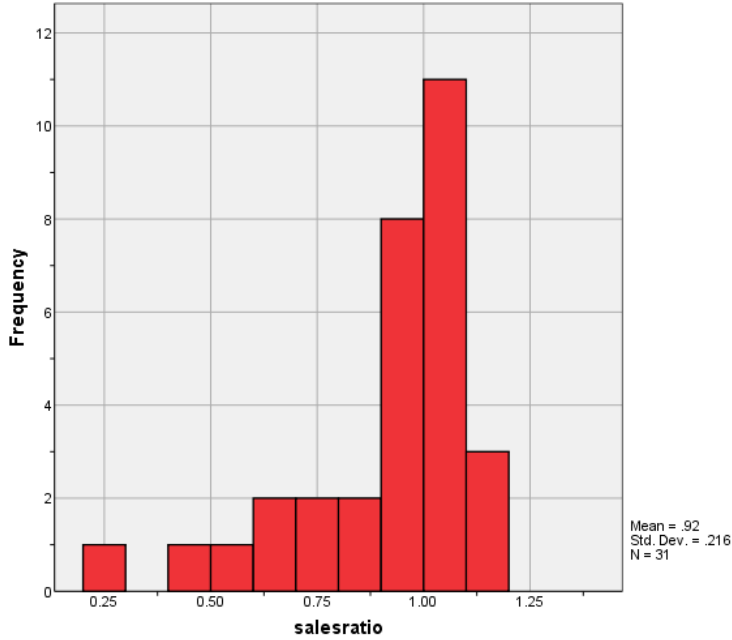
Commercial Market Trend Analysis

The 31 sales were analyzed next to verify that the assessor properly applied market trend adjustments to the commercial sales:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.926	.039		23.480	.000
	SalePeriod	.002	.002	.278	1.478	.151

a. Dependent Variable: salesratio

Commercial Market Trend Analysis
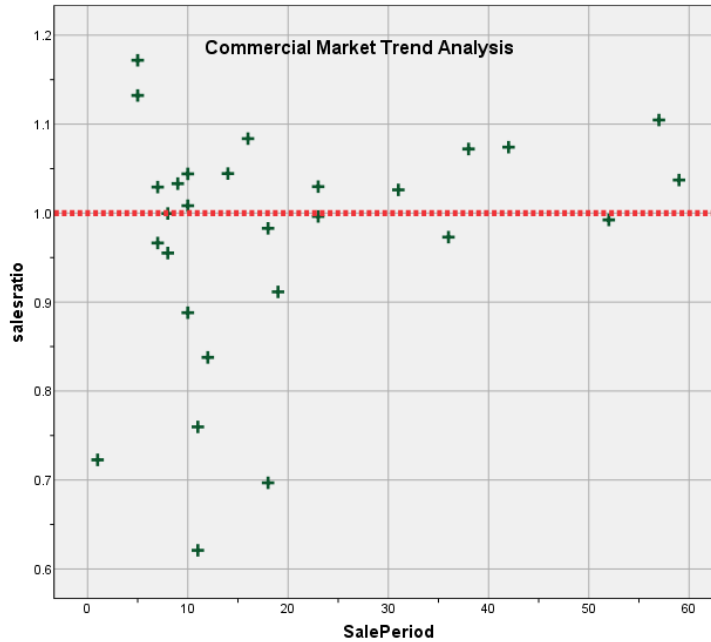
Sold/Unsold Analysis

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.

Report
VALSF

sold	N	Median	Mean
UNSOLD	333	$28	$54
SOLD	27	$37	$42

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of VALSF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.130	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .01.

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

VI. CONCLUSIONS

Based on this statistical analysis, there were no significant compliance issues concluded for Kit Carson County.

STATISTICAL ABSTRACT

Residential

	Ratio Statistics for CURRTOT / TASP												
	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
.992	.963	1.020	.986	.968	1.019	95.3%	.986	.957	1.015	1.006	.113	15.3%

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

Commercial/Industrial

	Ratio Statistics for CURRTOT / TASP												
	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
.917	.838	.996	.996	.911	1.033	97.1%	.933	.882	.984	.983	.141	23.5%

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

Not applicable

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$50K to $100K	25	22.3%
	$100K to $150K	25	22.3%
	$150K to $200K	28	25.0%
	$200K to $300K	24	21.4%
	$300K to $500K	7	6.3%
	$500K to $750K	3	2.7%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$50K to $100K	1.062	.995	.094	12.0%
$100K to $150K	.974	1.001	.134	17.7%
$150K to $200K	.973	.999	.110	18.6%
$200K to $300K	.993	.997	.100	12.9%
$300K to $500K	.975	1.005	.082	12.1%
$500K to $750K	1.019	1.001	.061	9.6%
Overall	.986	1.006	.113	15.4%

Sub Class

Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	109	97.3%
	1215.00	3	2.7%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.989	1.005	.107	13.9%
1215.00	.878	1.052	.328	66.2%
Overall	.986	1.006	.113	15.4%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	12	10.7%
	75 to 100	17	15.2%
	50 to 75	43	38.4%
	25 to 50	23	20.5%
	5 to 25	13	11.6%
	5 or Newer	4	3.6%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.055	1.047	.106	13.7%
75 to 100	.993	1.012	.101	13.4%
50 to 75	.955	1.006	.115	15.3%
25 to 50	.980	.995	.090	11.8%
5 to 25	1.019	1.033	.128	22.0%
5 or Newer	1.073	.956	.142	21.7%
Overall	.986	1.006	.113	15.4%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	500 to 1,000 sf	20	17.9%
	1,000 to 1,500 sf	45	40.2%
	1,500 to 2,000 sf	33	29.5%
	2,000 to 3,000 sf	12	10.7%
	3,000 sf or Higher	2	1.8%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
500 to 1,000 sf	.943	1.022	.123	19.0%
1,000 to 1,500 sf	.982	1.014	.113	13.8%
1,500 to 2,000 sf	1.010	1.003	.094	13.1%
2,000 to 3,000 sf	1.008	1.016	.147	23.7%
3,000 sf or Higher	1.014	.996	.033	4.7%
Overall	.986	1.006	.113	15.4%

Quality

Case Processing Summary

		Count	Percent
QUALITY	08 - MINIMUM	1	0.9%
	09 - FAIR	18	16.1%
	10 - AVERAGE	91	81.3%
	11 - GOOD	2	1.8%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
08 - MINIMUM	1.175	1.000	.000	.
09 - FAIR	1.062	.984	.073	10.0%
10 - AVERAGE	.976	1.006	.118	16.5%
11 - GOOD	.986	1.000	.034	4.8%
Overall	.986	1.006	.113	15.4%

Condition

Case Processing Summary

		Count	Percent
CONDITION	19 - POOR	1	0.9%
	21 - FAIR COND	18	16.1%
	24 - COND AVG	93	83.0%
Overall		112	100.0%
Excluded		0	
Total		112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
19 - POOR	.909	1.000	.000	.
21 - FAIR COND	1.057	1.003	.066	9.8%
24 - COND AVG	.979	1.004	.117	16.4%
Overall	.986	1.006	.113	15.4%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	4	12.9%
	$25K to $50K	3	9.7%
	$50K to $100K	4	12.9%
	$100K to $150K	5	16.1%
	$150K to $200K	3	9.7%
	$200K to $300K	6	19.4%
	$300K to $500K	3	9.7%
	$500K to $750K	1	3.2%
	Over $1,000K	2	6.5%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.033	.984	.049	8.6%
$25K to $50K	1.132	1.057	.280	57.0%
$50K to $100K	.910	.962	.153	21.0%
$100K to $150K	.760	1.016	.172	26.4%
$150K to $200K	.955	1.003	.191	34.5%
$200K to $300K	1.026	1.019	.115	23.0%
$300K to $500K	.992	1.000	.018	2.8%
$500K to $750K	1.030	1.000	.000	.
Over $1,000K	.939	1.010	.029	4.1%
Overall	.996	.983	.141	23.1%

Sub Class

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	4	12.9%
	1212.00	1	3.2%
	1721.00	1	3.2%
	1890.67	1	3.2%
	1964.25	1	3.2%
	2212.00	5	16.1%
	2220.00	2	6.5%
	2230.00	6	19.4%
	2231.67	1	3.2%
	2232.50	1	3.2%
	2235.00	7	22.6%
	3215.00	1	3.2%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.755	1.167	.404	53.9%
1212.00	1.044	1.000	.000	.
1721.00	.973	1.000	.000	.
1890.67	1.105	1.000	.000	.
1964.25	1.026	1.000	.000	.
2212.00	1.029	.981	.073	15.2%
2220.00	1.004	.998	.004	0.6%
2230.00	.969	1.033	.127	22.4%
2231.67	.992	1.000	.000	.
2232.50	.996	1.000	.000	.
2235.00	.838	1.087	.219	27.6%
3215.00	1.074	1.000	.000	.
Overall	.996	.983	.141	23.1%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	4	12.9%
	Over 100	4	12.9%
	50 to 75	9	29.0%
	25 to 50	8	25.8%
	5 to 25	4	12.9%
	5 or Newer	2	6.5%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.755	1.167	.404	53.9%
Over 100	1.033	1.000	.094	17.8%
50 to 75	1.000	1.030	.078	17.8%
25 to 50	.998	.949	.170	24.7%
5 to 25	.976	1.061	.052	7.1%
5 or Newer	.935	.980	.104	14.8%
Overall	.996	.983	.141	23.1%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	4	12.9%
	500 to 1,000 sf	2	6.5%
	1,000 to 1,500 sf	2	6.5%
	1,500 to 2,000 sf	2	6.5%
	2,000 to 3,000 sf	4	12.9%
	3,000 sf or Higher	17	54.8%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.755	1.167	.404	53.9%
500 to 1,000 sf	.903	1.200	.200	28.3%
1,000 to 1,500 sf	1.033	1.000	.004	0.5%
1,500 to 2,000 sf	.919	.979	.088	12.4%
2,000 to 3,000 sf	1.039	1.016	.092	16.4%
3,000 sf or Higher	.992	.993	.111	19.6%
Overall	.996	.983	.141	23.1%

Quality

Case Processing Summary

		Count	Percent
QUALITY		4	12.9%
	02 - FAIR	3	9.7%
	03 - AVERAGE	22	71.0%
	04 - GOOD	1	3.2%
	10 - AVERAGE	1	3.2%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.755	1.167	.404	53.9%
02 - FAIR	1.072	1.010	.012	2.0%
03 - AVERAGE	.994	.998	.114	19.1%
04 - GOOD	.838	1.000	.000	.
10 - AVERAGE	1.044	1.000	.000	.
Overall	.996	.983	.141	23.1%

Condition

Case Processing Summary

		Count	Percent
CONDITION		4	12.9%
	24 - COND AVG	1	3.2%
	ABV AVG	5	16.1%
	AVERAGE	21	67.7%
Overall		31	100.0%
Excluded		0	
Total		31	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.755	1.167	.404	53.9%
24 - COND AVG	1.044	1.000	.000	.
ABV AVG	.911	.974	.090	12.6%
AVERAGE	1.026	1.007	.106	19.1%
Overall	.996	.983	.141	23.1%

Vacant Land Median Ratio Stratification

Not applicable