2018
PARK COUNTY
PROPERTY ASSESSMENT
STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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APPRAISAL, INCORPORATED
Audit Division

September 15, 2018

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

RE: Final Report for the 2018 Colorado Property Assessment Study

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2018 Colorado Property Assessment Study.

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

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

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

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

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

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INTRODUCTION

Colorado

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

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

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

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

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

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

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

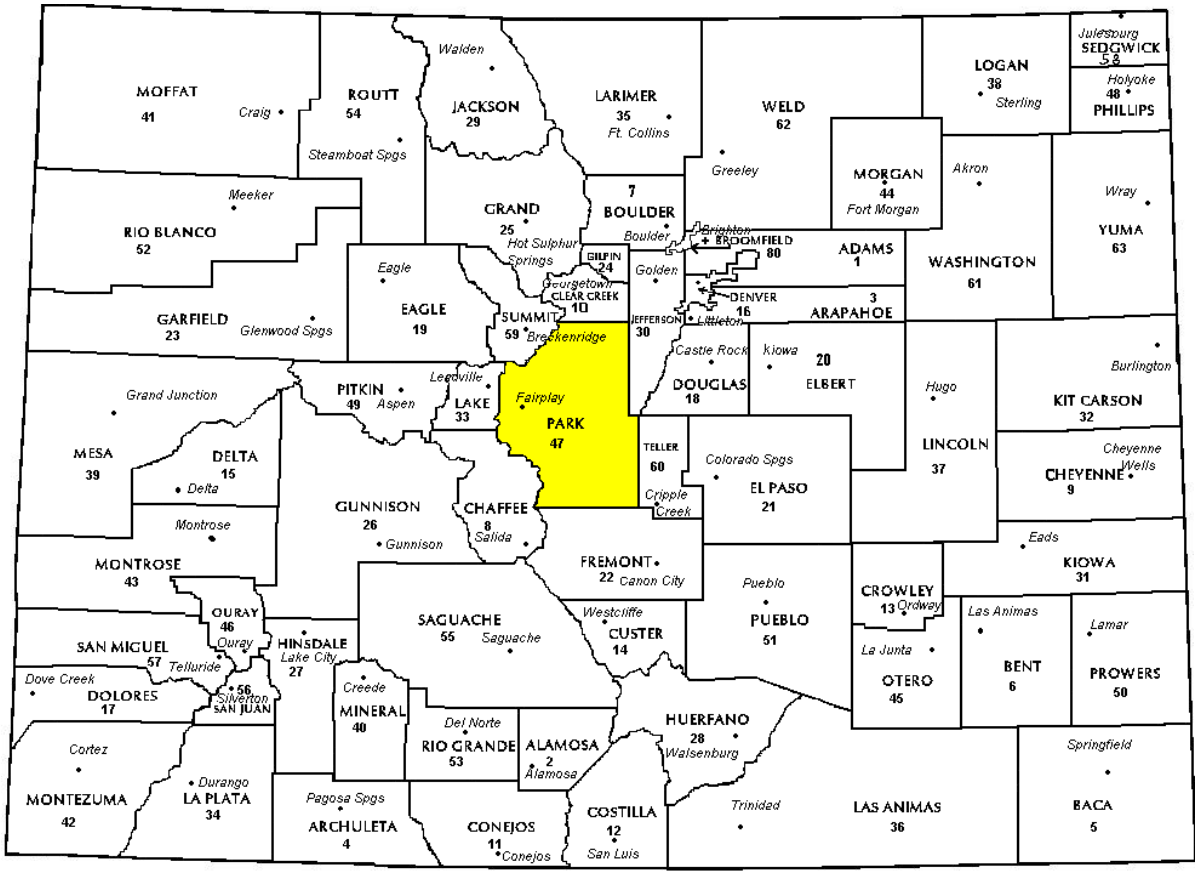
Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

Wildrose Audit has completed the Property Assessment Study for 2018 and is pleased to report its findings for Park County in the following report.

REGIONAL / HISTORICAL SKETCH OF PARK COUNTY

Regional Information

Park County is located in the Central Mountains region of Colorado. The Central Mountains Region is in the central portion of Colorado. It extends from the northern Gilpin county boundary approximately 210 miles southeasterly to the southern boundary of Colorado, including Chaffee, Clear Creek, Custer, Fremont, Gilpin, Huerfano, Lake, Las Animas, Park, and Teller counties.



Historical Information

Park County had an estimated population of approximately 17,166 people with 7.8 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 5.9 percent change from April 1, 2010 to July 1, 2016.

Park County was named after the large geographic region known as South Park, which was named by early fur traders and trappers in the area. The geographic center of the State of Colorado is located in Park County.

The Town of Fairplay is a statutory town that is the county seat and the most populous town of Park County. The town is the fifth-highest incorporated place in Colorado at an elevation of 9,953 feet. A historic gold mining settlement, the town was founded in 1859 during the early days of the Pike's Peak Gold Rush. Although it was founded during the initial placer mining boom, the mines in the area continued to produce gold and silver ore for many decades up through the middle of the 20th century.

The town consists of modern retail businesses along the highway, as well as a historic town on the bluff above the river along Front Street. The northern extension of Front Street along the river has been preserved and has become the site of relocated historic structures as an open air museum called South Park City, intended to recreate the early days of the Colorado Gold Rush. The Town of Fairplay, Colorado, is the basis for the Town of South Park, Colorado, in the television series South Park. It also hosts Burro Days, a festival held on the last weekend of July. This event celebrates the town's mining heritage. The main feature of the festival is a 29-mile burro race over rough terrain and elevation gain from downtown Fairplay to the 13,000-ft summit of Mosquito Pass.
(www.Wikipedia.org)

RATIO ANALYSIS

Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 1, 2015 and June 30, 2016. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2016 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 Park County are:

Park County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	32	1.000	1.026	15.2	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	2,150	1.004	1.032	13.2	Compliant
Vacant Land	1,146	1.000	1.035	16.8	Compliant

After applying the above described methodologies, it is concluded from the sales ratios that Park 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 Park County has complied with the statutory requirements to analyze the effects of time on value in their county. Park 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

Park 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	N/A
Single Family	Compliant
Vacant Land	Compliant

Conclusions

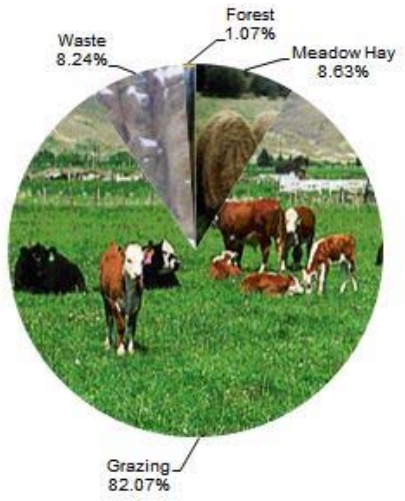
After applying the above described methodologies, it is concluded that Park County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

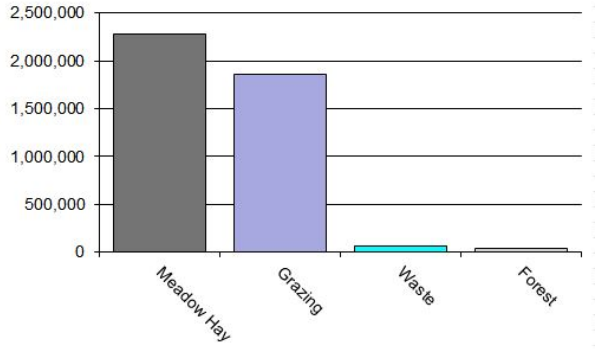
None

AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



Agricultural Land

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

Conclusions

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

Park County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4137	Meadow Hay	27,733	82.19	2,279,266	2,286,317	1.00
4147	Grazing	263,821	7.05	1,859,052	1,859,052	1.00
4177	Forest	3,440	12.37	42,556	42,575	1.00
4167	Waste	26,473	2.22	58,819	58,819	1.00
Total/Avg		**321,467**	**13.19**	**4,239,693**	**4,246,763**	**1.00**

Recommendations

None

Agricultural Outbuildings

Methodology

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

Conclusions

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

Recommendations

None

Agricultural Land Under Improvements

Methodology

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

Conclusions

Park 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

Park 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.:

- Determined by County Assessor

Park County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

Recommendations

None

SALES VERIFICATION

According to Colorado Revised Statutes:

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

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

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

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

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

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

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

WRA reviewed the sales verification procedures in 2018 for Park County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 34 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 $500, 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

Park 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

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

Recommendations

None

NATURAL RESOURCES

Earth and Stone Products

Methodology

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

Conclusions

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

Recommendations

None

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2018 in Park 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

Park 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.

Park 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

Park 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

Park 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.

Park 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
- Internet

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.

Park County submitted their personal property written audit plan and was current for the 2018 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 $7,400 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement

Conclusions

Park 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*

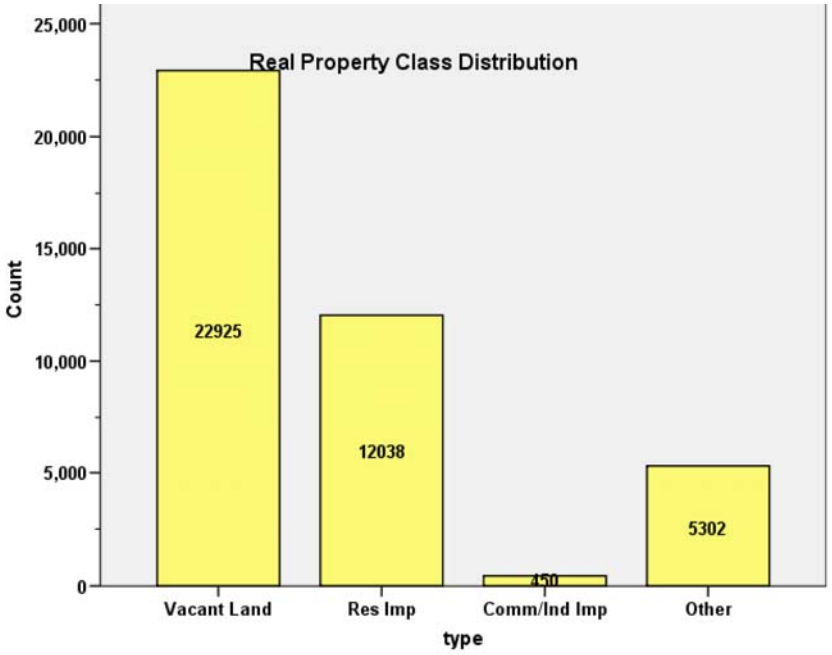
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT
FOR PARK COUNTY
2018

I. OVERVIEW

Park County is located in central Colorado. The county has a total of 40,715 real property parcels, according to data submitted by the county assessor's office in 2018. 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) accounted for 91.3 % of all vacant land parcels.

For residential improved properties, single family properties accounted for 97.5% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for less than 1.1% of all such properties in this county.

II. DATA FILES

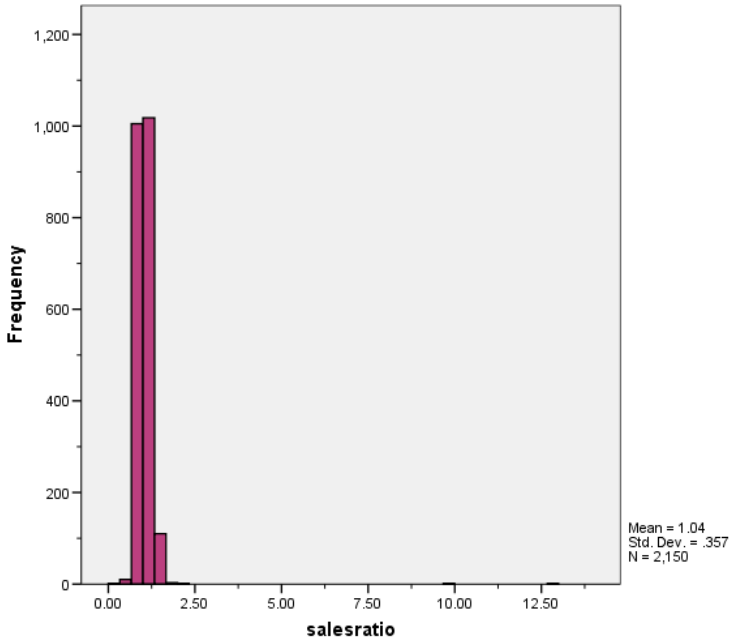
The following sales analyses were based on the requirements of the 2018 Colorado Property Assessment Study. Information was provided by the Park Assessor's Office in April 2018. The data included all 5 property record files as specified by the Auditor, plus a 6th file for commercial sales.

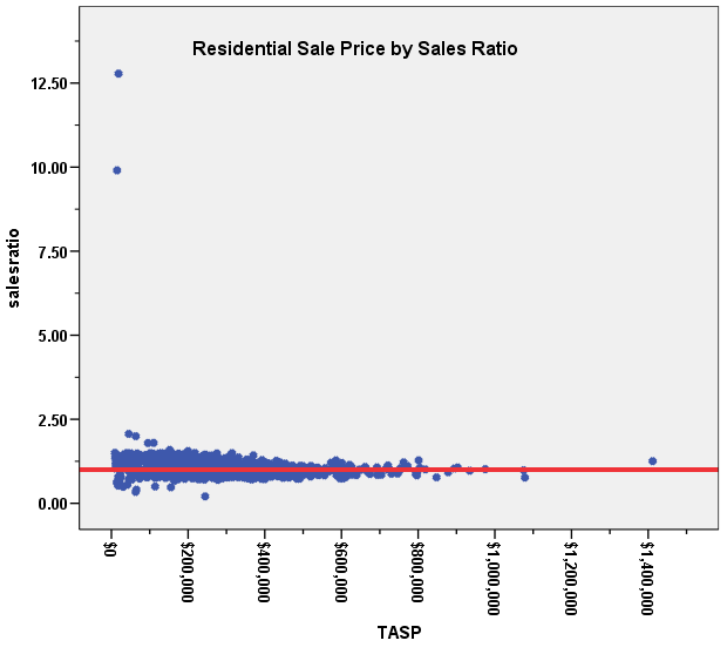
III. RESIDENTIAL SALES RESULTS

There were 2,150 qualified residential sales for the 48 month sale period ending June 30, 2016. The sales ratio analysis was analyzed as follows:

Median	**1.004**
Price Related Differential	**1.032**
Coefficient of Dispersion	**13.2**

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:





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

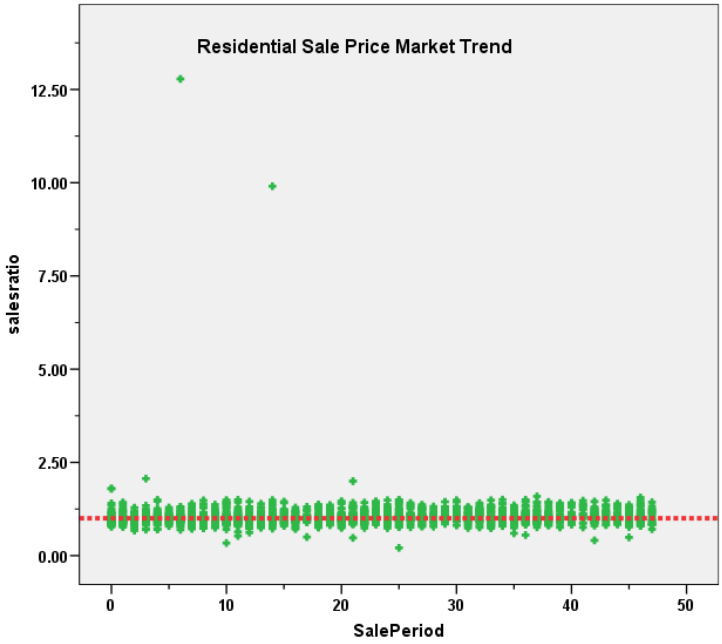
Residential Market Trend Analysis

We next analyzed the residential dataset using the 48-month sale period for any residual market trending, with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.006	.014		70.768	.000
	SalePeriod	.002	.001	.060	2.792	.005

a. Dependent Variable: salesratio



Although the sale ratio trend was statistically significant, the magnitude of that trend was 0.2%, which was not significant. The above analysis indicated that the assessor has adequately addressed market trending in the valuation of residential properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the change in actual value from taxable years 2016 to 2018 for sold and unsold properties, both as a whole and by economic area, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	9,939	1.13	1.59
SOLD	2,150	1.18	1.20

Report
DIFF

ECONAREA	sold	N	Median	Mean
1	UNSOLD	3,141	1.27	1.88
	SOLD	871	1.26	1.31
2	UNSOLD	323	1.36	1.52
	SOLD	90	1.38	1.41
3	UNSOLD	78	1.40	1.40
	SOLD	39	1.41	1.45
4	UNSOLD	1,277	1.08	1.32
	SOLD	269	1.09	1.10
5	UNSOLD	843	1.09	1.56
	SOLD	157	1.09	1.13
6	UNSOLD	1,139	1.06	1.33
	SOLD	267	1.06	1.08
7	UNSOLD	1,654	1.04	1.29
	SOLD	281	1.05	1.06
8	UNSOLD	1,222	1.12	1.90
	SOLD	163	1.13	1.15

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

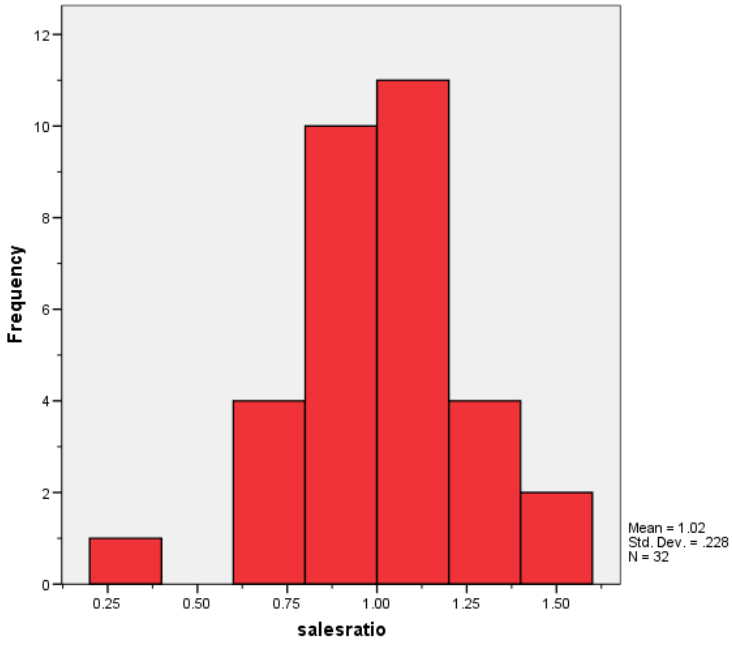
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

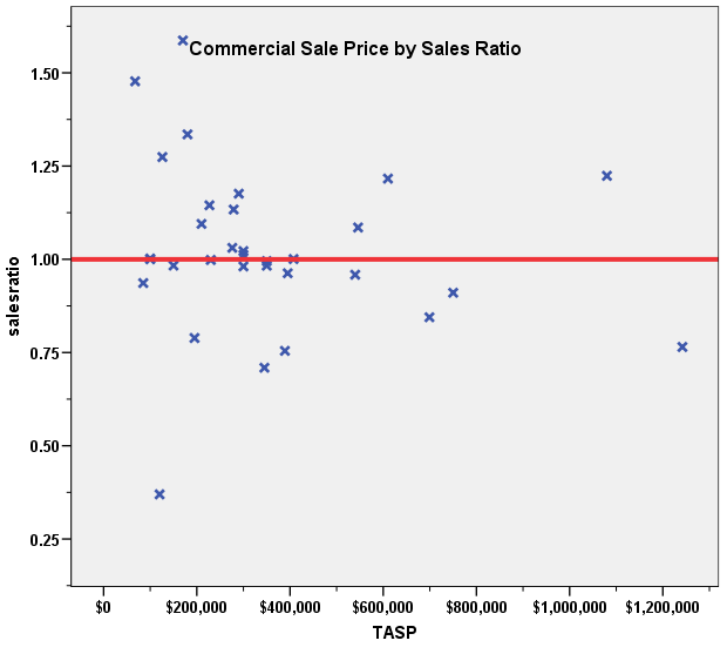
There were 33 qualified residential sales for the 60 month sale period ending June 30, 2016. One sale was trimmed due to its extreme sales ratio, resulting in 32 qualified sales for this analysis.

The sales ratio analysis was analyzed as follows:

Median	**1.000**
Price Related Differential	**1.026**
Coefficient of Dispersion	**15.2**

The above tables indicate that the Park County commercial/industrial sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further for all 33 commercial properties:


Frequency
12
10
8
6
4
2
0
0.25
0.50
0.75
1.00
1.25
1.50
salesratio
Mean = 1.02
Std. Dev. = .228
N = 32


Commercial Sale Price by Sales Ratio
salesratio
1.50
1.25
1.00
0.75
0.50
0.25
$0
$200,000
$400,000
$600,000
$800,000
$1,000,000
$1,200,000
TASP

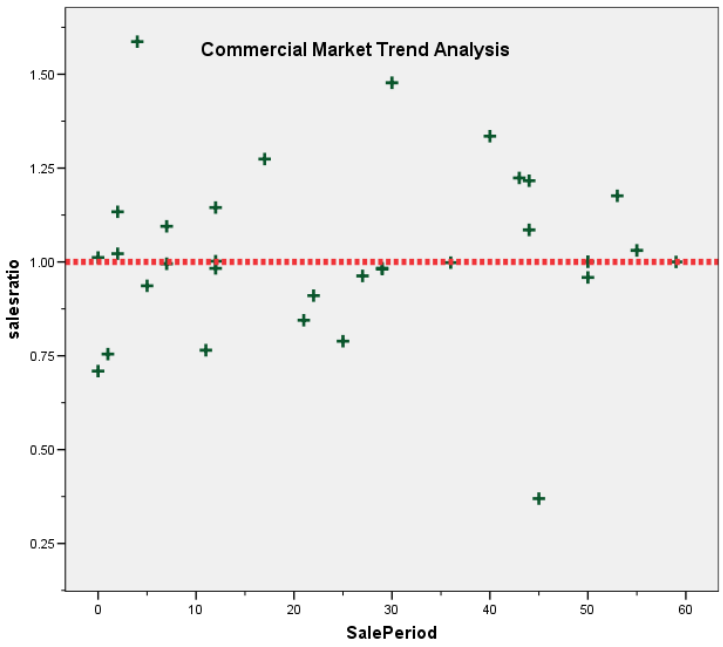
Commercial Market Trend Analysis

The 32 commercial/industrial sales were analyzed, examining the sale ratios across a 60-month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.010	.068		14.828	.000
	SalePeriod	.001	.002	.047	.255	.800

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concluded that the Park County assessor has adequately considered market trending for commercial and industrial properties.

Sold/Unsold Analysis

In terms of the valuation comparison between sold and unsold commercial/industrial properties, we compared the median actual value per square foot in 2018 between each group, as follows:

Report
VALSF

sold	N	Median	Mean
UNSOLD	427	$79	$91
SOLD	31	$79	$81

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	.486	Retain the null hypothesis.

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

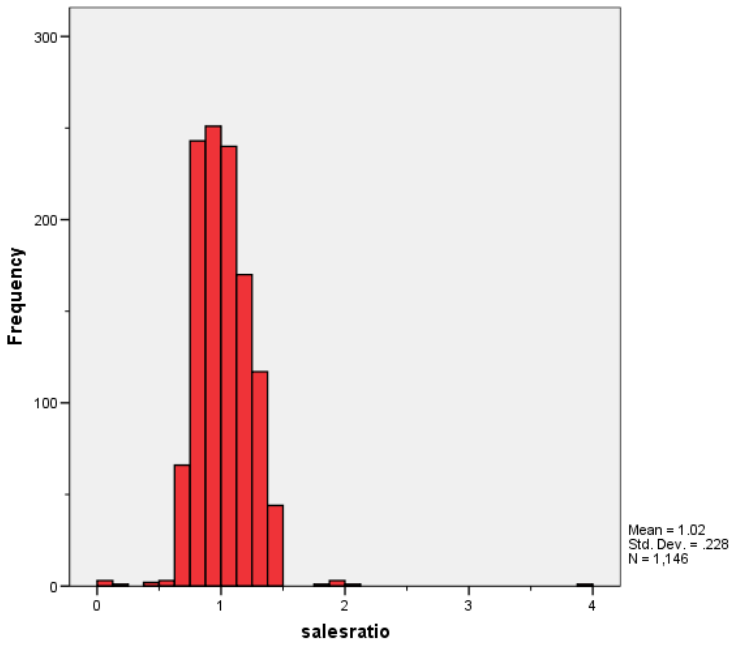
The above results indicate that sold and unsold commercial properties were valued in a similar manner.

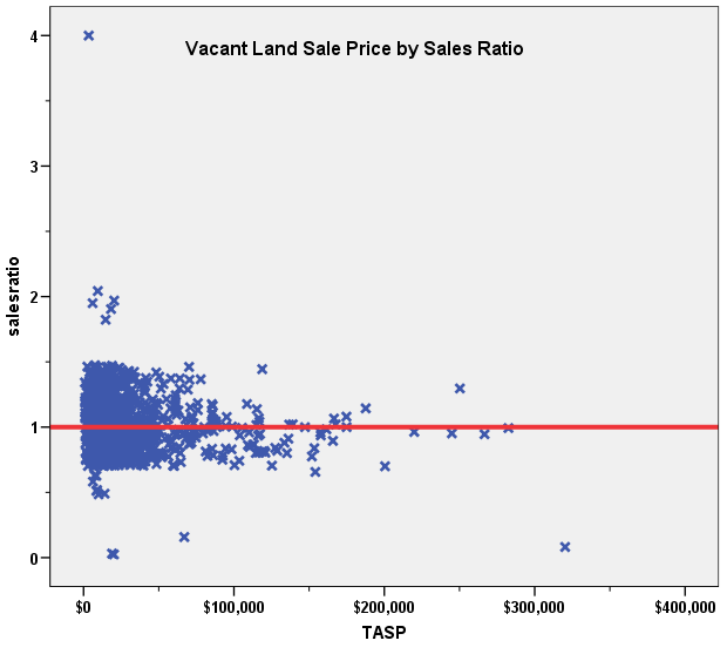
V. VACANT LAND SALE RESULTS

There were 1,146 qualified residential sales for the 48 month sale period ending June 30, 2016. The sales ratio analysis was analyzed as follows:

Median	**1.000**
Price Related Differential	**1.035**
Coefficient of Dispersion	**16.8**

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





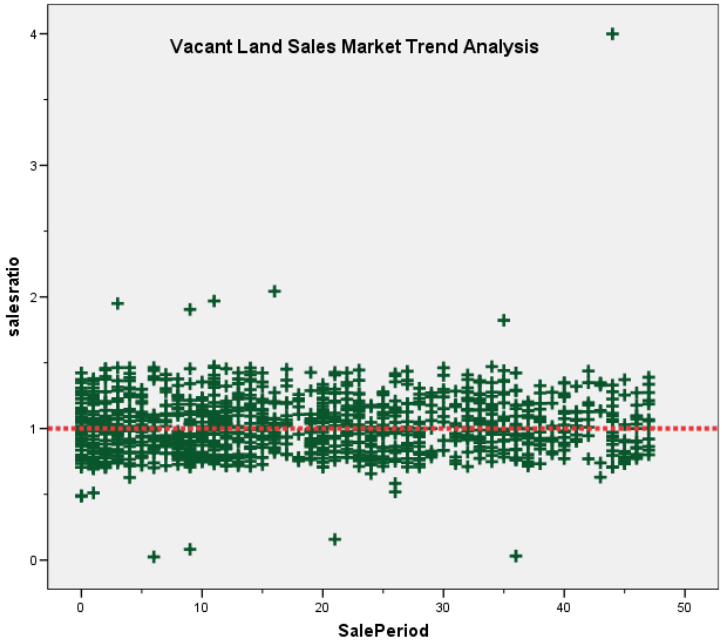
Vacant Land Market Trend Analysis

We analyzed the sales ratios for vacant land sales, based on the time adjusted sale price (TASP) and the actual land value to determine if there was any residual time trending in the vacant land valuations. The 1,146 vacant land sales were analyzed, examining the sales ratios across the 48 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.998	.011		87.626	.000
	SalePeriod	.001	.000	.062	2.084	.037

a. Dependent Variable: salesratio



The market trend analysis indicated no statistically significant trend. Based on these results, we concluded that the assessor has adequately considered market trending in their vacant land valuations.

Sold/Unsold Analysis

We compared the median change in actual value between taxable years 2016 and 2018 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	21,473	1.07	1.11
SOLD	1,139	1.07	1.08

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	.001	Retain the null hypothesis.

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

The above results indicated that sold and unsold vacant land properties were valued consistently overall.

VI. AGRICULTURAL IMPROVEMENTS ANALYSIS

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

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

Report

IMPVALSF

ABSTRIMP	N	Median	Mean
1212	11,734	$150.38	$153.99
4277	24	$142.61	$152.84

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of IMPVALSF is the same across categories of ABSTRIMP.	Independent-Samples Mann-Whitney U Test	.824	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

VII. CONCLUSIONS

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

STATISTICAL ABSTRACT
Residential

Ratio Statistics for CURRTOT / TASP

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.039	1.024	1.055	1.004	1.000	1.012	95.0%	1.007	1.001	1.013	1.032	.132	34.4%

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
1.024	.941	1.106	1.000	.963	1.095	98.0%	.997	.911	1.084	1.026	.152	22.3%

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.

Vacant Land

Ratio Statistics for CURRLND / TASP

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1.017	1.004	1.030	1.000	.983	1.012	95.2%	.983	.959	1.006	1.035	.168	22.4%

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

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	22	1.0%
	$25K to $50K	21	1.0%
	$50K to $100K	74	3.4%
	$100K to $150K	237	11.0%
	$150K to $200K	333	15.5%
	$200K to $300K	727	33.8%
	$300K to $500K	617	28.7%
	$500K to $750K	101	4.7%
	$750K to $1,000K	15	0.7%
	Over $1,000K	3	0.1%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.073	1.010	1.091	299.6%
$25K to $50K	1.181	1.000	.215	29.5%
$50K to $100K	1.234	.992	.169	22.5%
$100K to $150K	1.096	1.003	.138	17.3%
$150K to $200K	1.051	1.000	.133	16.6%
$200K to $300K	1.010	1.002	.105	13.8%
$300K to $500K	.965	1.002	.088	11.6%
$500K to $750K	.957	.999	.085	10.6%
$750K to $1,000K	1.016	1.002	.098	13.3%
Over $1,000K	.985	.977	.165	24.9%
Overall	1.004	1.032	.132	35.8%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	600	49	2.3%
	1212	2078	96.7%
	1215	8	0.4%
	1230	9	0.4%
	1235	2	0.1%
	1277	2	0.1%
	2778	1	0.0%
	4279	1	0.0%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
600	1.033	1.295	.480	129.7%
1212	1.003	1.028	.122	30.1%
1215	1.252	1.004	.089	11.7%
1230	.959	1.021	.205	29.2%
1235	1.249	1.017	.199	28.2%
1277	1.109	1.005	.015	2.1%
2778	.784	1.000	.000	.
4279	.338	1.000	.000	.
Overall	1.004	1.032	.132	35.8%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	6	0.3%
	75 to 100	35	1.6%
	50 to 75	97	4.5%
	25 to 50	701	32.6%
	5 to 25	1265	58.8%
	5 or Newer	46	2.1%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.017	.976	.105	15.8%
75 to 100	.970	.993	.155	19.5%
50 to 75	1.010	1.032	.162	22.1%
25 to 50	1.007	1.036	.142	47.2%
5 to 25	1.003	1.032	.126	29.8%
5 or Newer	1.008	1.009	.073	9.0%
Overall	1.004	1.032	.132	35.8%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	58	2.7%
	500 to 1,000 sf	478	22.2%
	1,000 to 1,500 sf	822	38.2%
	1,500 to 2,000 sf	427	19.9%
	2,000 to 3,000 sf	243	11.3%
	3,000 sf or Higher	122	5.7%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.997	1.066	.275	34.5%
500 to 1,000 sf	1.017	1.043	.143	43.3%
1,000 to 1,500 sf	1.000	1.039	.133	44.1%
1,500 to 2,000 sf	1.000	1.019	.115	15.2%
2,000 to 3,000 sf	1.010	1.026	.122	16.0%
3,000 sf or Higher	1.010	1.007	.089	12.3%
Overall	1.004	1.032	.132	35.8%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	Average	903	42.0%
	Average Plus	612	28.5%
	Excellent	4	0.2%
	Fair	180	8.4%
	Fair Plus	226	10.5%
	Good	156	7.3%
	Low	13	0.6%
	Low Plus	24	1.1%
	Very Good	32	1.5%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	1.008	1.022	.124	16.5%
Average Plus	1.001	1.021	.105	14.2%
Excellent	1.238	.994	.038	5.6%
Fair	1.009	1.029	.161	21.8%
Fair Plus	1.016	1.069	.190	79.3%
Good	1.000	1.012	.091	12.2%
Low	1.287	1.434	.686	195.2%
Low Plus	.912	1.017	.193	26.7%
Very Good	.983	1.011	.099	12.2%
Overall	1.004	1.032	.132	35.8%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	Average	1354	63.0%
	Badly Worn	15	0.7%
	Excellent	3	0.1%
	Fair	143	6.7%
	Good	615	28.6%
	Very Good	17	0.8%
	Worn Out	3	0.1%
Overall		2150	100.0%
Excluded		0	
Total		2150	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	1.000	1.031	.136	36.4%
Badly Worn	1.236	1.336	.598	188.2%
Excellent	1.255	.999	.015	2.4%
Fair	1.010	1.021	.171	21.1%
Good	1.005	1.021	.098	13.3%
Very Good	1.009	1.009	.108	13.8%
Worn Out	1.000	1.042	.111	16.7%
Overall	1.004	1.032	.132	35.8%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$50K to $100K	4	12.5%
	$100K to $150K	3	9.4%
	$150K to $200K	3	9.4%
	$200K to $300K	9	28.1%
	$300K to $500K	6	18.8%
	$500K to $750K	5	15.6%
	Over $1,000K	2	6.3%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$50K to $100K	1.001	1.025	.136	27.7%
$100K to $150K	.983	.984	.307	48.8%
$150K to $200K	1.335	1.015	.199	31.8%
$200K to $300K	1.031	1.002	.058	7.9%
$300K to $500K	.973	.998	.095	15.8%
$500K to $750K	.959	1.009	.114	16.3%
Over $1,000K	.994	1.016	.231	32.6%
Overall	1.000	1.026	.152	22.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	0	1	3.1%
	1545	1	3.1%
	1548	1	3.1%
	1712	4	12.5%
	1721	1	3.1%
	1879	1	3.1%
	2212	11	34.4%
	2214	1	3.1%
	2215	1	3.1%
	2216	4	12.5%
	2220	2	6.3%
	2221	1	3.1%
	2225	1	3.1%
	2227	1	3.1%
	2235	1	3.1%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.370	1.000	.000	.
1545	.995	1.000	.000	.
1548	1.134	1.000	.000	.
1712	1.080	.964	.099	11.6%
1721	.963	1.000	.000	.
1879	1.095	1.000	.000	.
2212	1.000	1.099	.158	22.7%
2214	.845	1.000	.000	.
2215	.910	1.000	.000	.
2216	1.083	1.038	.092	12.0%
2220	1.000	1.001	.002	0.3%
2221	1.587	1.000	.000	.
2225	.709	1.000	.000	.
2227	1.224	1.000	.000	.
2235	.983	1.000	.000	.
Overall	1.000	1.026	.152	22.9%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	1	3.1%
	75 to 100	1	3.1%
	50 to 75	8	25.0%
	25 to 50	12	37.5%
	5 to 25	9	28.1%
	5 or Newer	1	3.1%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.370	1.000	.000	.
75 to 100	.910	1.000	.000	.
50 to 75	1.016	1.055	.133	21.1%
25 to 50	1.000	.981	.132	18.7%
5 to 25	1.012	1.039	.136	23.0%
5 or Newer	.765	1.000	.000	.
Overall	1.000	1.026	.152	22.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	1	3.1%
	500 to 1,000 sf	4	12.5%
	1,000 to 1,500 sf	1	3.1%
	1,500 to 2,000 sf	2	6.3%
	2,000 to 3,000 sf	2	6.3%
	3,000 sf or Higher	22	68.8%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.370	1.000	.000	.
500 to 1,000 sf	1.001	1.025	.136	27.7%
1,000 to 1,500 sf	.789	1.000	.000	.
1,500 to 2,000 sf	1.183	1.028	.129	18.2%
2,000 to 3,000 sf	.876	1.037	.139	19.7%
3,000 sf or Higher	1.006	1.039	.130	19.0%
Overall	1.000	1.026	.152	22.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		1	3.1%
	Average	26	81.3%
	Average Plus	2	6.3%
	Fair Plus	1	3.1%
	Good	1	3.1%
	Low	1	3.1%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.370	1.000	.000	.
Average	1.001	1.029	.137	20.9%
Average Plus	1.196	.994	.017	2.4%
Fair Plus	1.000	1.000	.000	.
Good	.765	1.000	.000	.
Low	.963	1.000	.000	.
Overall	1.000	1.026	.152	22.9%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION		1	3.1%
	Average	23	71.9%
	Fair	4	12.5%
	Good	4	12.5%
Overall		32	100.0%
Excluded		0	
Total		32	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.370	1.000	.000	.
Average	1.012	1.023	.154	22.0%
Fair	.998	1.004	.044	8.1%
Good	.970	1.094	.112	17.3%
Overall	1.000	1.026	.152	22.9%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	745	65.0%
	$25K to $50K	253	22.1%
	$50K to $100K	97	8.5%
	$100K to $150K	32	2.8%
	$150K to $200K	12	1.0%
	$200K to $300K	6	0.5%
	$300K to $500K	1	0.1%
Overall		1146	100.0%
Excluded		0	
Total		1146	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.020	1.000	.172	23.8%
$25K to $50K	.961	1.003	.164	20.2%
$50K to $100K	.982	1.001	.151	20.0%
$100K to $150K	.873	.999	.128	18.1%
$150K to $200K	.972	.993	.106	14.4%
$200K to $300K	.958	.990	.114	20.0%
$300K to $500K	.082	1.000	.000	.
Overall	1.000	1.035	.168	22.8%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100	986	86.0%
	103	41	3.6%
	105	29	2.5%
	245	1	0.1%
	315	1	0.1%
	323	2	0.2%
	328	2	0.2%
	520	1	0.1%
	530	3	0.3%
	540	23	2.0%
	550	29	2.5%
	560	2	0.2%
	1112	20	1.7%
	4129	1	0.1%
	4147	2	0.2%
	9140	1	0.1%
	9169	1	0.1%
	9179	1	0.1%
Overall		1146	100.0%
Excluded		0	
Total		1146	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	1.000	1.025	.166	22.1%
103	.950	1.028	.154	20.5%
105	1.141	1.139	.219	29.9%
245	1.142	1.000	.000	.
315	.985	1.000	.000	.
323	1.098	1.113	.228	32.2%
328	.843	1.012	.047	6.6%
520	1.037	1.000	.000	.
530	1.126	1.060	.150	22.6%
540	1.019	.999	.111	15.3%
550	1.061	1.007	.125	16.3%
560	.959	1.018	.124	17.5%
1112	.997	1.395	.181	27.4%
4129	.158	1.000	.000	.
4147	.028	1.004	.117	16.5%
9140	.981	1.000	.000	.
9169	1.002	1.000	.000	.
9179	.833	1.000	.000	.
Overall	1.000	1.035	.168	22.8%