



2022

DENVER COUNTY PROPERTY ASSESSMENT STUDY



WILDROSE
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.

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

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.

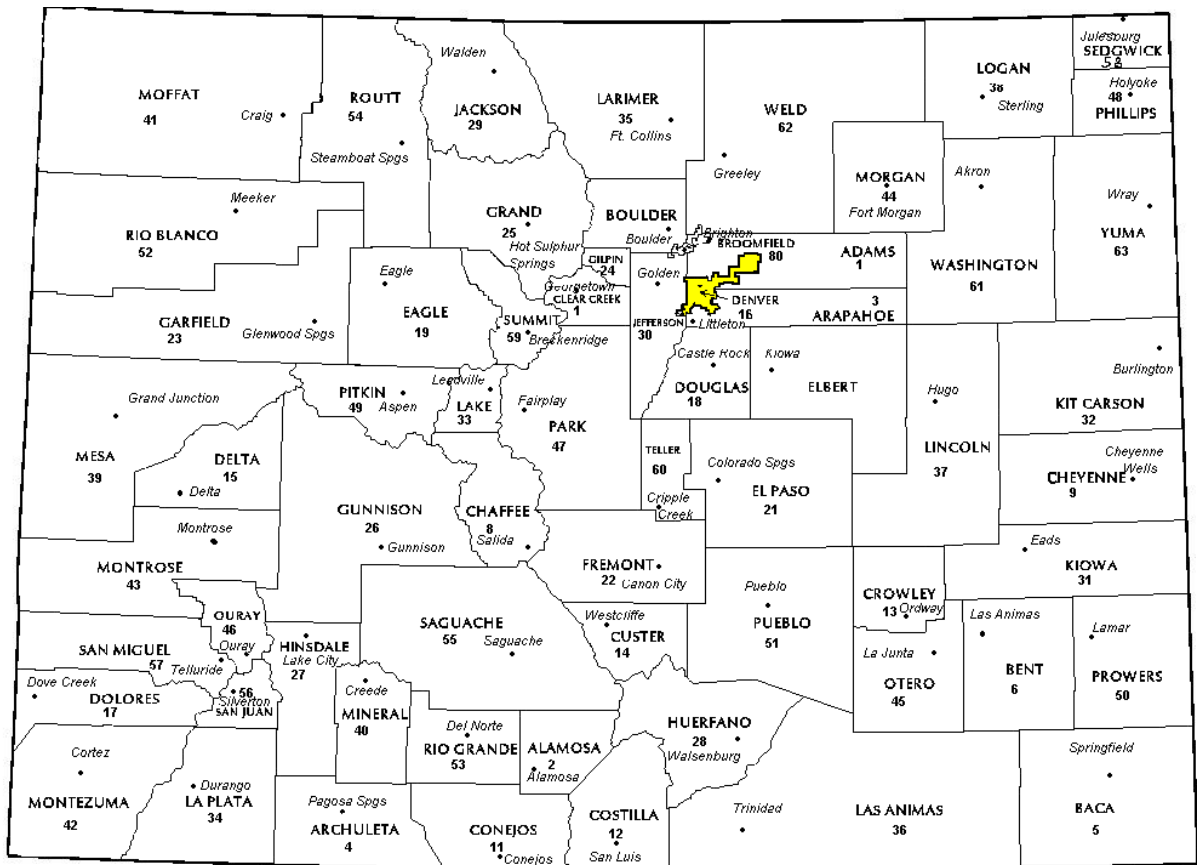
Wildrose Audit has completed the Property Assessment Study for 2022 and is pleased to report its findings for Denver County in the following report.

REGIONAL/HISTORICAL SKETCH OF DENVER COUNTY

Regional Information

Denver County is located in the Front Range region of Colorado. The Colorado Front Range is a colloquial geographic term for the populated areas of the State that are just east of the foothills of the Front Range. It includes

Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld counties.



Historical Information

Denver County has approximately 153 square miles and an estimated population of approximately 727,211 people, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 21.2 percent change from April 1, 2010 to July 1, 2019.

Denver is the capital and the most populous city of the state of Colorado. Denver is a consolidated city-county located in the South Platte River Valley on the High Plains just east of the Front Range of the Rocky Mountains.

Denver City was founded in November 1858 as a mining town during the Pikes Peak Gold Rush in western Kansas Territory. That summer, a group of gold prospectors from Lawrence, Kansas, arrived and established Montana City on the banks of the South Platte River. This was the first settlement in what was later to become the city of Denver. The site faded quickly, however, and was abandoned in favor of Auraria (named after the gold-mining town of Auraria, Georgia) and St. Charles City by the summer of 1859. The Montana City site is now Grant-Frontier Park and includes mining equipment and a log cabin replica.

On November 22, 1858, General William Larimer, a land speculator from eastern Kansas, placed cottonwood logs to stake a claim on the hill overlooking the confluence of the South Platte River and Cherry Creek, across the creek from the existing mining settlement of Auraria. Larimer named the town site Denver City to curry favor with Kansas Territorial Governor James W. Denver. Larimer hoped that the town's name would help make it the county seat of Arapaho County, but ironically Governor Denver had already resigned from office. The location was accessible to existing trails and was across the South Platte River

from the site of seasonal encampments of the Cheyenne and Arapaho. The site of these first towns is now the site of Confluence Park in downtown Denver. Larimer, along with associates in the St. Charles City Land Company, sold parcels in the town to merchants and miners, with the intention of creating a major city that would cater to new emigrants. Denver City was a frontier town, with an economy based on servicing local miners with gambling, saloons, livestock and goods trading. In the early years, land parcels were often traded for grubstakes or gambled away by miners in Auraria.

The Colorado Territory was created on February 28, 1861. Arapahoe County was formed on November 1, 1861 and Denver City was incorporated on November 7, 1861. Denver City served as the Arapahoe County Seat from 1861 until consolidation in 1902. In 1865, Denver City became the Territorial Capital and became the State Capital when Colorado was admitted to the Union.

In 1901 the Colorado General Assembly voted to split Arapahoe County into three parts: a new consolidated City and County of Denver, a new Adams County, and the remainder of the Arapahoe County to be renamed South Arapahoe County. A ruling by the Colorado Supreme Court, subsequent legislation, and a referendum delayed the creation of the City and County of Denver until November 15, 1902.

Denver has hosted the Democratic National Convention twice, during the years of 1908 and again in 2008, taking the opportunity to promote the city's status on the national, political, and socioeconomic stage.

(Wikipedia.org)

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 Denver County are:

Denver County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	473	0.985	1.121	16.6	Compliant
Single Family	25,449	1.000	1.007	4.9	Compliant
Vacant Land	681	0.970	1.042	13	Compliant

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

Denver 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	Compliant

Conclusions

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

Recommendations

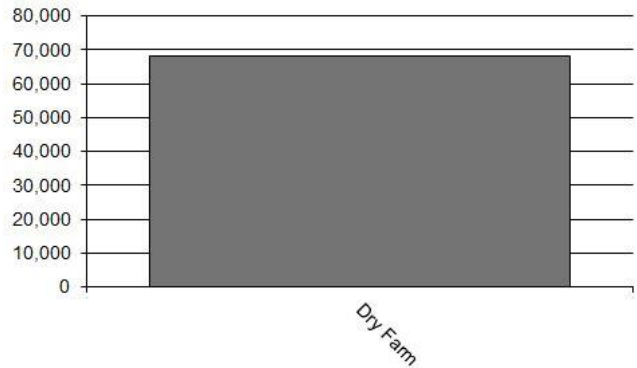
None

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:

Denver County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4127	Dry Farm	973	46.29	45,038	45,038	1.00
Total/Avg		973	46.29	45,038	45,038	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.

Property Taxation for the valuation of agricultural outbuildings.

Recommendations

None

Conclusions

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



**Denver County is exempt from the Agricultural Land Under
Improvements Study**

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 Denver County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 69 sales listed as unqualified.

All but 2 of the sales selected in the sample gave reasons that were clear and supportable. 2 sales had insufficient reason for disqualification.

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

Denver County appears to be doing an adequate job of verifying their sales.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

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

Denver County is exempt from the Natural Resources Study.

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2022 in Denver 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.

Conclusions

Denver 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.

Denver 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

Denver 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

Denver 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.

Denver 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
- 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.

Denver 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:

- 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
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- As part of sales tax audit



Denver County's median ratio is 1.00. This is in compliance with the State Board of Equalization (SBOE) compliance requirements which range from .90 to 1.10 with no COD requirements.

Conclusions

Denver 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*

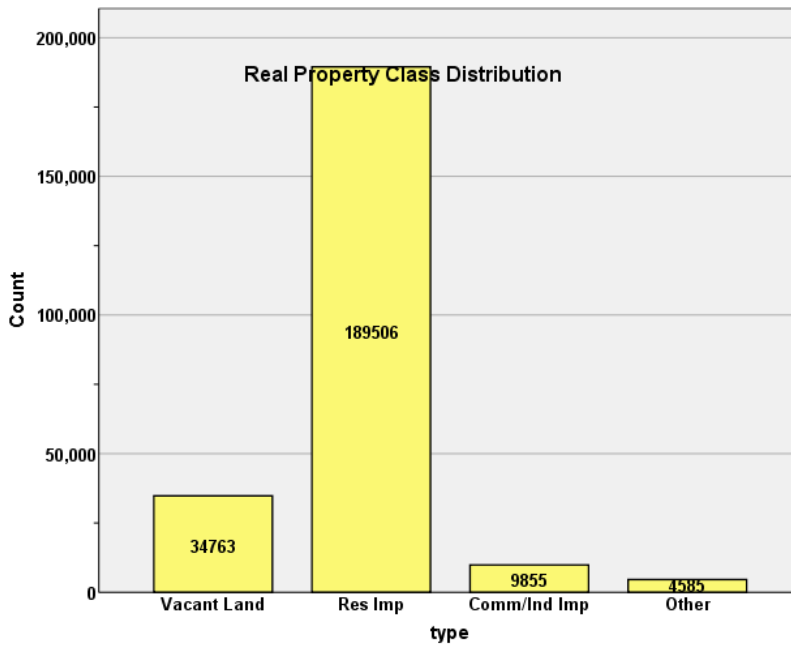
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT FOR DENVER COUNTY 2022

I. OVERVIEW

Denver County is an urban county located along Colorado’s Front Range. The county has a total of 238,709 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:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100, 101, 200 and 1112) accounted for 69.8% of all vacant land parcels.

For residential improved properties, single family properties accounted for 77.3% of all residential properties, while condominiums accounted for 19.6% of all residential properties. We broke down our residential analysis by both economic area and residential subclass.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 4.1% of all such properties in this county.

II. DATA FILES

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

III. RESIDENTIAL SALES RESULTS

There were 25,449 qualified residential sales in the 24 month sale period ending June 30, 2020. The sales ratio analysis results were as follows:

Median	1.000
Price Related Differential	1.007
Coefficient of Dispersion	4.9

We stratified the sales ratio results by residential subclass and economic area, as follows:

SINGLE FAMILY Ratio Statistics for currtot / tasp

N = 19,030

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	1.001	1.002	.028
2.00	.999	1.003	.037
3.00	1.003	1.004	.051
4.00	1.000	1.006	.056
5.00	1.002	1.007	.057
6.00	1.002	1.001	.032
7.00	1.002	1.009	.065
8.00	1.003	1.010	.076
9.00	1.002	1.008	.063
10.00	1.002	1.007	.058
11.00	1.001	1.006	.062
12.00	.999	1.006	.050
13.00	1.002	1.007	.057
14.00	1.001	1.011	.068
15.00	1.005	1.016	.085
16.00	1.002	1.004	.051
17.00	1.003	1.022	.093
18.00	1.000	1.016	.090
19.00	1.000	1.004	.053
20.00	1.000	1.017	.077
21.00	1.002	1.003	.035
22.00	1.000	1.002	.038
23.00	.997	1.003	.043
24.00	1.000	1.002	.039
25.00	1.000	1.002	.042
26.00	1.006	1.007	.060
27.00	1.000	1.002	.070
28.00	1.000	1.004	.046
29.00	1.003	1.004	.051
30.00	1.001	1.006	.058
31.00	1.012	1.009	.063
32.00	1.000	1.006	.053
33.00	1.001	1.002	.049
34.00	1.007	1.003	.039
51.00	1.005	1.009	.067
52.00	1.002	1.002	.035
53.00	1.000	1.002	.029
54.00	1.001	1.005	.056
55.00	1.000	1.004	.046

56.00	1.000	1.004	.040
57.00	.999	1.004	.042
58.00	.999	1.003	.037
212.00	.000	1.000	.000
Overall	1.001	1.003	.049

ROWHOUSE/TOWN HOMES Ratio Statistics for currtot / tasp
N = 136

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.989	1.002	.081
Overall	.989	1.002	.081

1220 Ratio Statistics for currtot / tasp
N = 64

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	1.000	1.010	.076
2.00	1.069	1.008	.075
Overall	1.014	1.001	.081

1225 Ratio Statistics for currtot / tasp
N = 114

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
2.00	1.040	1.008	.068
3.00	.990	1.151	.195
Overall	1.009	1.077	.112

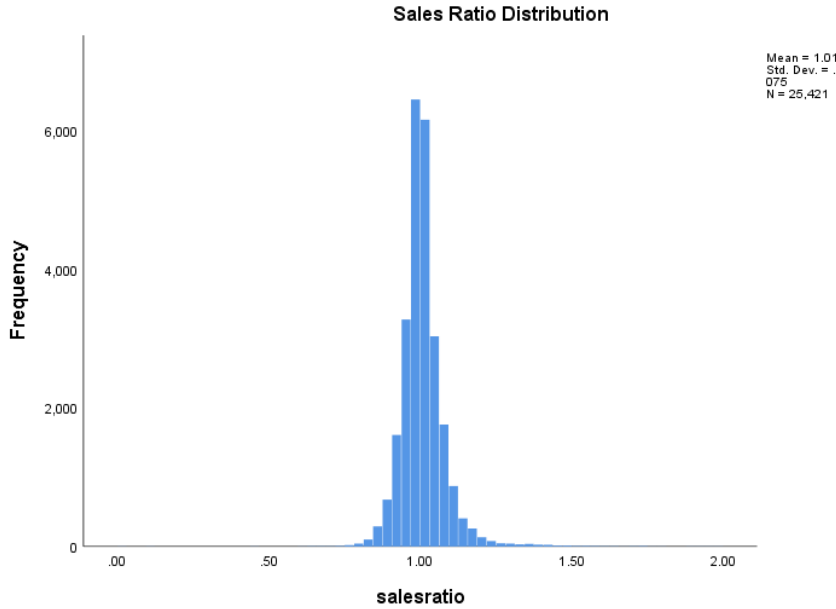
1230 Ratio Statistics for currtot / tasp
N = 6,105

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
37.00	.996	1.004	.058
38.00	1.001	1.004	.043
39.00	1.000	1.003	.054
41.00	1.001	1.003	.043
42.00	.999	1.002	.034
43.00	.998	1.003	.039
44.00	1.000	1.005	.048
45.00	.998	1.003	.047
46.00	1.000	1.004	.048
47.00	1.000	1.003	.056
48.00	1.003	1.007	.074
50.00	1.000	1.003	.041
Overall	1.000	1.003	.048

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

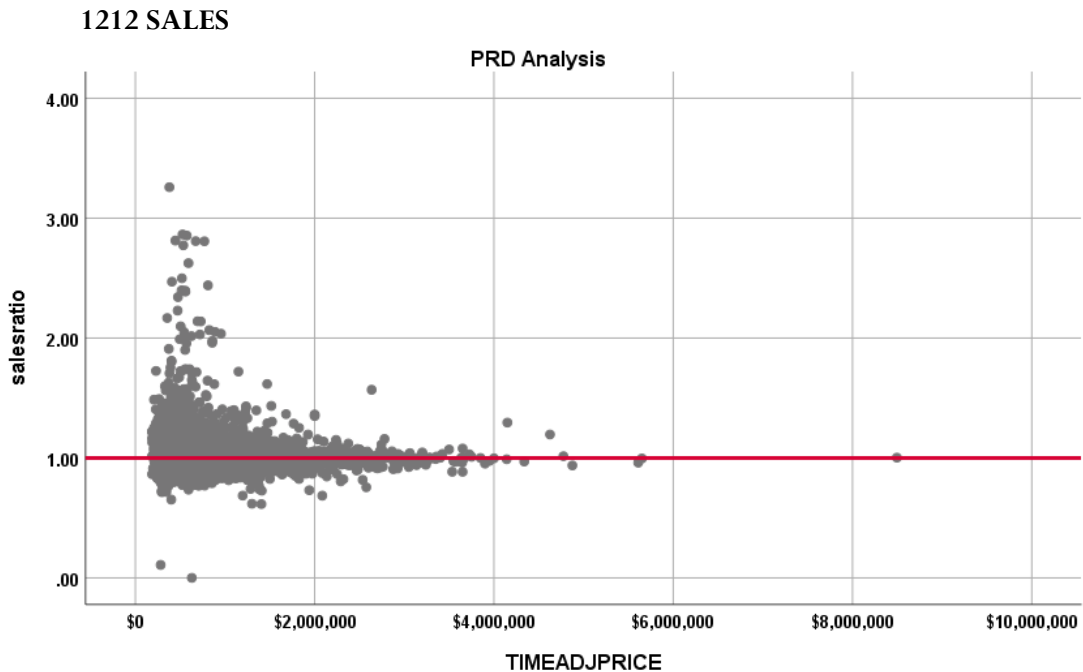
The above graphs indicates that the distribution of the sale ratios was within state mandated limits.



NOTE: 28 SALES WITH SALES RATIOS OVER 2.0 WERE TRIMMED FOR THIS GRAPH

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:



The Price-Related Differential (PRD) for 1212 sales is 1.003, which is 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 sales valuation, as follows:

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.996	.001		766.270	.000
	CURRTOT	.0000000250	.000	.099	13.681	.000

a. Dependent Variable: salesratio

The slope of the line at 0.0000000250 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array. This indicates no regressivity or progressivity in the residential values assigned by the assessor.

Case Processing Summary

		Count	Percent
SPRec	LT \$300K	719	3.8%
	\$300K to \$400K	4513	23.7%
	\$400K to \$500K	3875	20.4%
	\$500K to \$600K	3239	17.0%
	\$600K to \$750K	2975	15.6%
	\$750K to \$1000K	2129	11.2%
	\$1000K to \$2000K	1352	7.1%
	Over \$2000K	228	1.2%
Overall		19030	100.0%
Excluded		0	
Total		19030	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$300K	1.029	1.001	.057	9.2%
\$300K to \$400K	1.004	1.000	.042	7.7%
\$400K to \$500K	1.002	1.000	.048	9.1%
\$500K to \$600K	1.000	1.000	.050	11.5%
\$600K to \$750K	.998	1.000	.048	9.1%
\$750K to \$1000K	.997	1.000	.052	10.1%
\$1000K to \$2000K	.994	1.000	.057	8.7%
Over \$2000K	.994	.999	.048	7.6%
Overall	1.001	1.003	.049	9.4%

The above table indicates no regressivity in the sales ratios across sale price categories.

Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending and broken down by subclass and economic area, as follows:

SINGLE FAMILY ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
.	1	(Constant)	.742	.026		28.839	.000
		SalePeriod	.001	.003	.152	.343	.745
1.00	1	(Constant)	.995	.004		275.703	.000
		SalePeriod	.001	.000	.113	2.621	.009
2.00	1	(Constant)	.997	.005		205.447	.000
		SalePeriod	.001	.000	.079	1.762	.079
3.00	1	(Constant)	1.018	.010		102.412	.000
		SalePeriod	.000	.001	-.018	-.334	.739
4.00	1	(Constant)	1.020	.012		82.378	.000
		SalePeriod	-.001	.001	-.052	-.970	.333
5.00	1	(Constant)	1.018	.021		48.404	.000
		SalePeriod	.000	.002	.027	.261	.795
6.00	1	(Constant)	.997	.002		406.875	.000
		SalePeriod	.001	.000	.091	3.395	.001
7.00	1	(Constant)	1.031	.010		103.316	.000
		SalePeriod	-.001	.001	-.037	-.778	.437
8.00	1	(Constant)	1.043	.016		66.798	.000
		SalePeriod	-.001	.001	-.050	-1.035	.301
9.00	1	(Constant)	.991	.011		86.513	.000
		SalePeriod	.002	.001	.137	2.391	.017
10.00	1	(Constant)	1.024	.010		103.610	.000
		SalePeriod	.000	.001	-.019	-.360	.719
11.00	1	(Constant)	.996	.008		129.516	.000
		SalePeriod	.001	.001	.105	2.288	.023
12.00	1	(Constant)	1.007	.009		113.028	.000
		SalePeriod	.000	.001	.010	.163	.871
13.00	1	(Constant)	1.021	.014		75.029	.000
		SalePeriod	.000	.001	.017	.349	.727
14.00	1	(Constant)	1.016	.018		56.185	.000
		SalePeriod	.001	.001	.061	1.083	.280
15.00	1	(Constant)	1.041	.021		49.209	.000
		SalePeriod	.000	.002	-.016	-.250	.802
16.00	1	(Constant)	1.003	.007		142.507	.000
		SalePeriod	.000	.000	.033	.721	.471
17.00	1	(Constant)	1.085	.023		47.891	.000
		SalePeriod	-.003	.002	-.092	-1.780	.076
18.00	1	(Constant)	1.017	.029		35.505	.000
		SalePeriod	.002	.002	.063	.945	.345
19.00	1	(Constant)	1.031	.006		158.944	.000
		SalePeriod	-.001	.000	-.116	-2.808	.005
20.00	1	(Constant)	1.021	.017		60.921	.000
		SalePeriod	.000	.001	.020	.334	.739
21.00	1	(Constant)	.989	.008		126.478	.000
		SalePeriod	.001	.001	.130	1.650	.101

22.00	1	(Constant)	.999	.003		317.645	.000
		SalePeriod	.001	.000	.075	2.452	.014
23.00	1	(Constant)	.998	.005		221.082	.000
		SalePeriod	.000	.000	.056	1.369	.172
24.00	1	(Constant)	.991	.005		219.967	.000
		SalePeriod	.001	.000	.134	3.180	.002
25.00	1	(Constant)	1.004	.006		176.323	.000
		SalePeriod	.000	.000	.025	.509	.611
26.00	1	(Constant)	1.004	.010		105.054	.000
		SalePeriod	.001	.001	.076	1.311	.191
27.00	1	(Constant)	1.021	.011		89.225	.000
		SalePeriod	.000	.001	.012	.207	.836
28.00	1	(Constant)	1.002	.007		137.311	.000
		SalePeriod	.000	.001	.045	.761	.447
29.00	1	(Constant)	1.018	.009		111.015	.000
		SalePeriod	-.001	.001	-.047	-.826	.409
30.00	1	(Constant)	1.010	.009		117.594	.000
		SalePeriod	.000	.001	-.019	-.356	.722
31.00	1	(Constant)	1.020	.012		84.639	.000
		SalePeriod	.000	.001	.025	.377	.707
32.00	1	(Constant)	1.007	.007		136.309	.000
		SalePeriod	.000	.001	.032	.761	.447
33.00	1	(Constant)	.999	.010		103.999	.000
		SalePeriod	.001	.001	.067	.930	.353
34.00	1	(Constant)	.993	.008		132.404	.000
		SalePeriod	.001	.001	.140	1.911	.058
51.00	1	(Constant)	.990	.012		83.765	.000
		SalePeriod	.002	.001	.129	2.089	.038
52.00	1	(Constant)	.999	.004		248.547	.000
		SalePeriod	.000	.000	.045	1.483	.138
53.00	1	(Constant)	.996	.003		348.485	.000
		SalePeriod	.000	.000	.054	1.478	.140
54.00	1	(Constant)	.996	.007		135.210	.000
		SalePeriod	.001	.001	.068	1.386	.166
55.00	1	(Constant)	1.003	.006		165.134	.000
		SalePeriod	.000	.000	.038	.741	.459
56.00	1	(Constant)	1.012	.005		216.826	.000
		SalePeriod	.000	.000	-.046	-1.314	.189
57.00	1	(Constant)	1.006	.006		171.616	.000
		SalePeriod	.000	.000	-.019	-.501	.616
58.00	1	(Constant)	.999	.003		291.708	.000
		SalePeriod	.000	.000	.030	.820	.412

a. Dependent Variable: salesratio

1215 ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1.00	1	(Constant)	.987	.019		50.667	.000
		SalePeriod	.001	.001	.048	.557	.578

a. Dependent Variable: salesratio

1220 ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1.00	1	(Constant)	.963	.036		27.104	.000
		SalePeriod	.004	.002	.236	1.577	.122
2.00	1	(Constant)	1.030	.050		20.430	.000
		SalePeriod	.005	.004	.264	1.163	.260

a. Dependent Variable: salesratio

1225 ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
2.00	1	(Constant)	.963	.024		39.912	.000
		SalePeriod	.005	.002	.335	3.104	.003
3.00	1	(Constant)	1.484	.343		4.322	.000
		SalePeriod	-.028	.025	-.194	-1.150	.258

a. Dependent Variable: salesratio

1230 ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
37.00	1	(Constant)	1.010	.009		115.537	.000
		SalePeriod	.000	.001	-.014	-.272	.786
38.00	1	(Constant)	1.009	.006		181.837	.000
		SalePeriod	.000	.000	-.039	-.813	.416
39.00	1	(Constant)	1.004	.008		126.370	.000
		SalePeriod	.000	.001	-.022	-.395	.693
41.00	1	(Constant)	1.006	.005		218.037	.000
		SalePeriod	.000	.000	-.029	-.728	.467
42.00	1	(Constant)	.996	.004		284.639	.000
		SalePeriod	.001	.000	.101	2.643	.008
43.00	1	(Constant)	.997	.004		231.177	.000
		SalePeriod	.000	.000	.027	.618	.537
44.00	1	(Constant)	1.004	.005		190.551	.000
		SalePeriod	-1.965E-5	.000	-.002	-.053	.958
45.00	1	(Constant)	.999	.005		193.280	.000
		SalePeriod	.000	.000	.020	.504	.614

46.00	1	(Constant)	.990	.006		167.732	.000
		SalePeriod	.001	.000	.100	2.477	.014
47.00	1	(Constant)	.999	.006		154.332	.000
		SalePeriod	.001	.001	.074	1.708	.088
48.00	1	(Constant)	1.023	.011		93.551	.000
		SalePeriod	-.001	.001	-.048	-.915	.361
50.00	1	(Constant)	.983	.013		75.315	.000
		SalePeriod	.001	.001	.072	1.244	.215

a. Dependent Variable: salesratio

The above indicates that market trending was insignificant from either a statistical or a relative magnitude perspective for each subclass and economic area. Based on this analysis, we concluded that Denver County adequately addressed market trending.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median change in value between taxable year 2018 and taxable year 2020 between sold and unsold groups. The data was analyzed by subclass and economic area, as follows:

OVERALL ANALYSIS

Report

DIFF

DIFF	N	Median	Mean
UNSOLD	179697	1.08	1.19
SOLD	25322	1.09	1.14

SINGLE FAMILY ANALYSIS

Report

DIFF

ECONAREA	DIFF	N	Median	Mean
1.00	UNSOLD	7789	1.07	1.08
	SOLD	715	1.08	1.09
2.00	UNSOLD	7964	1.11	1.12
	SOLD	591	1.12	1.15
3.00	UNSOLD	3736	1.08	4.85
	SOLD	391	1.08	1.13
4.00	UNSOLD	3437	1.03	1.05
	SOLD	345	1.06	1.15
5.00	UNSOLD	2111	1.03	1.05
	SOLD	94	1.06	1.10
6.00	UNSOLD	4984	1.08	1.54
	SOLD	1391	1.09	1.28
7.00	UNSOLD	3470	1.08	1.11
	SOLD	449	1.08	1.15
8.00	UNSOLD	3705	1.10	1.12
	SOLD	433	1.11	1.20
9.00	UNSOLD	2321	1.09	1.12
	SOLD	301	1.11	1.17
10.00	UNSOLD	3481	1.08	1.09
	SOLD	348	1.11	1.15
11.00	UNSOLD	5638	1.12	1.13
	SOLD	472	1.14	1.18

12.00	UNSOLD	2724	1.03	1.06
	SOLD	289	1.09	1.11
13.00	UNSOLD	3524	1.04	1.06
	SOLD	404	1.06	1.13
14.00	UNSOLD	3129	1.01	1.05
	SOLD	312	1.04	1.18
15.00	UNSOLD	2163	1.06	1.12
	SOLD	234	1.08	1.32
16.00	UNSOLD	5334	1.07	1.08
	SOLD	472	1.09	1.12
17.00	UNSOLD	3525	1.11	1.17
	SOLD	371	1.11	1.50
18.00	UNSOLD	2332	1.04	1.06
	SOLD	224	1.04	1.25
19.00	UNSOLD	5089	1.11	1.12
	SOLD	577	1.17	1.21
20.00	UNSOLD	2035	1.14	1.16
	SOLD	272	1.17	1.29
21.00	UNSOLD	1348	1.04	1.05
	SOLD	160	1.06	1.07
22.00	UNSOLD	4454	1.08	1.19
	SOLD	1069	1.09	1.20
23.00	UNSOLD	6744	1.09	1.10
	SOLD	606	1.08	1.11
24.00	UNSOLD	5722	1.08	1.08
	SOLD	557	1.09	1.11
25.00	UNSOLD	3686	1.07	1.07
	SOLD	413	1.08	1.11
26.00	UNSOLD	2824	1.06	1.10
	SOLD	297	1.08	1.12
27.00	UNSOLD	3283	1.07	1.10
	SOLD	302	1.09	1.14
28.00	UNSOLD	3043	1.11	1.11
	SOLD	286	1.14	1.18
29.00	UNSOLD	2630	1.10	1.12
	SOLD	305	1.15	1.18
30.00	UNSOLD	2882	1.08	1.09
	SOLD	338	1.11	1.16
31.00	UNSOLD	2067	1.10	1.15
	SOLD	233	1.11	1.16
32.00	UNSOLD	5223	1.09	1.13
	SOLD	555	1.09	1.15
33.00	UNSOLD	1757	1.10	1.12
	SOLD	190	1.11	1.15
34.00	UNSOLD	1628	1.10	1.11
	SOLD	184	1.10	1.12
37.00	UNSOLD	2561	1.03	1.05
	SOLD	402	1.02	1.04
38.00	UNSOLD	3359	1.05	1.06
	SOLD	445	1.05	1.07
39.00	UNSOLD	2262	1.03	1.03
	SOLD	329	1.05	1.06
41.00	UNSOLD	3845	1.06	1.07
	SOLD	631	1.09	1.10
42.00	UNSOLD	5258	1.07	1.07
	SOLD	675	1.09	1.10
43.00	UNSOLD	3861	1.06	1.05

	SOLD	543	1.07	1.07
44.00	UNSOLD	3730	1.04	1.05
	SOLD	636	1.05	1.07
45.00	UNSOLD	3721	1.04	1.04
	SOLD	638	1.04	1.05
46.00	UNSOLD	2404	1.03	1.05
	SOLD	591	1.04	1.05
47.00	UNSOLD	1752	1.09	1.14
	SOLD	518	1.07	1.14
48.00	UNSOLD	2306	.91	.92
	SOLD	360	.92	.94
50.00	UNSOLD	32	1.10	1.10
	SOLD	297	1.66	1.67
51.00	UNSOLD	1612	1.05	1.07
	SOLD	259	1.06	1.08
52.00	UNSOLD	2592	1.08	1.24
	SOLD	1031	1.09	1.14
53.00	UNSOLD	2566	1.07	1.26
	SOLD	752	1.06	1.11
54.00	UNSOLD	2596	1.06	1.06
	SOLD	418	1.07	1.08
55.00	UNSOLD	2893	1.03	1.04
	SOLD	384	1.05	1.06
56.00	UNSOLD	2340	1.11	1.17
	SOLD	830	1.10	1.13
57.00	UNSOLD	1751	1.06	1.10
	SOLD	652	1.06	1.10
58.00	UNSOLD	2147	1.06	1.15
	SOLD	751	1.08	1.13

1215 ANALYSIS

Report

DIFF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	3136	1.09	1.10
	SOLD	134	1.10	1.12

1220 ANALYSIS

Report

DIFF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	547	1.05	1.07
	SOLD	44	1.07	1.06
2.00	UNSOLD	339	1.11	1.15
	SOLD	20	1.19	1.20

1225 ANALYSIS

Report

DIFF

ECONAREA	sold	N	Median	Mean
2.00	UNSOLD	1115	1.02	1.08
	SOLD	78	1.06	1.20
3.00	UNSOLD	488	1.06	29.88
	SOLD	36	1.06	1.16

1230 ANALYSIS

Report

DIFF

ECONAREA	sold	N	Median	Mean
37.00	UNSOLD	2561	1.03	1.05
	SOLD	402	1.02	1.04
38.00	UNSOLD	3359	1.05	1.06
	SOLD	445	1.05	1.07
39.00	UNSOLD	2262	1.03	1.03
	SOLD	329	1.05	1.06
41.00	UNSOLD	3845	1.06	1.07
	SOLD	631	1.09	1.10
42.00	UNSOLD	5258	1.07	1.07
	SOLD	675	1.09	1.10
43.00	UNSOLD	3861	1.06	1.05
	SOLD	543	1.07	1.07
44.00	UNSOLD	3730	1.04	1.05
	SOLD	636	1.05	1.07
45.00	UNSOLD	3721	1.04	1.04
	SOLD	638	1.04	1.05
46.00	UNSOLD	2404	1.03	1.05
	SOLD	591	1.04	1.05
47.00	UNSOLD	1752	1.09	1.14
	SOLD	518	1.07	1.14
48.00	UNSOLD	2306	.91	.92
	SOLD	360	.92	.94
50.00	UNSOLD	32	1.10	1.10
	SOLD	297	1.66	1.67

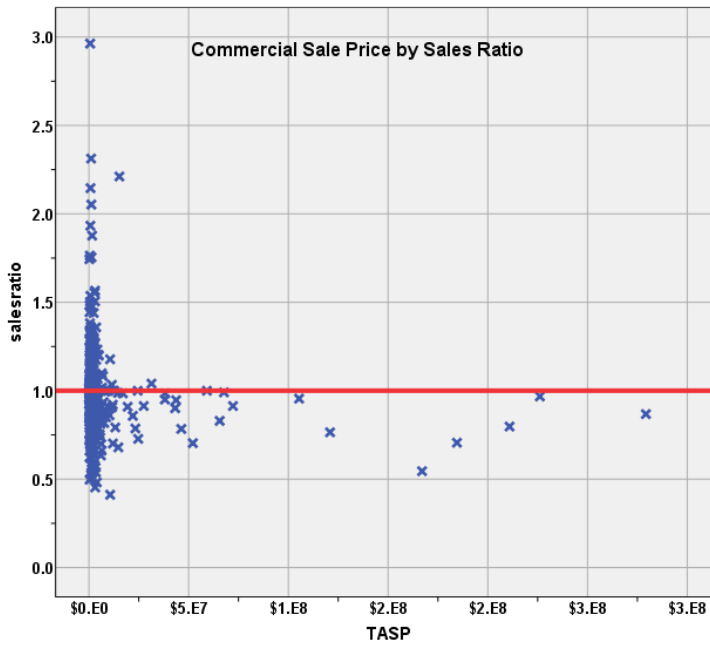
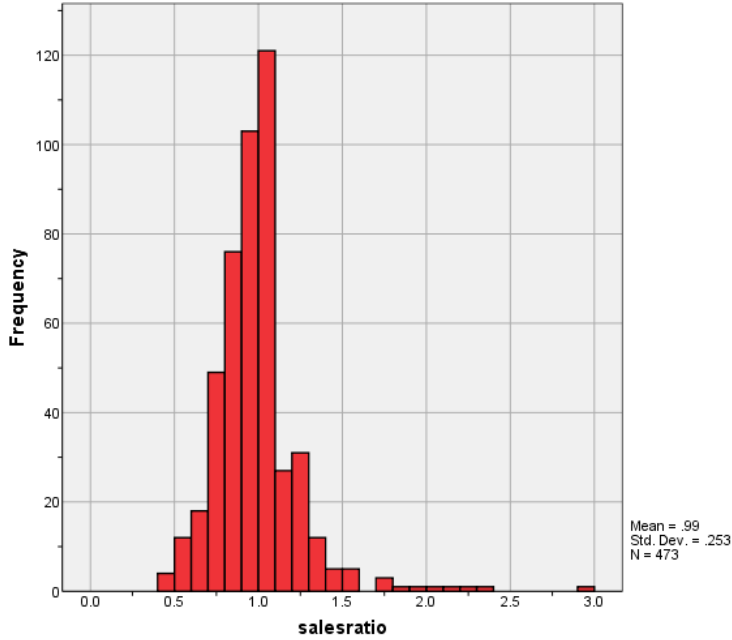
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 473 qualified commercial/industrial sales in the 24 month sale period ending June 30, 2020. We performed the following sales ratio analysis, as follows:

Median	0.985
Price Related Differential	1.121
Coefficient of Dispersion	16.6

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



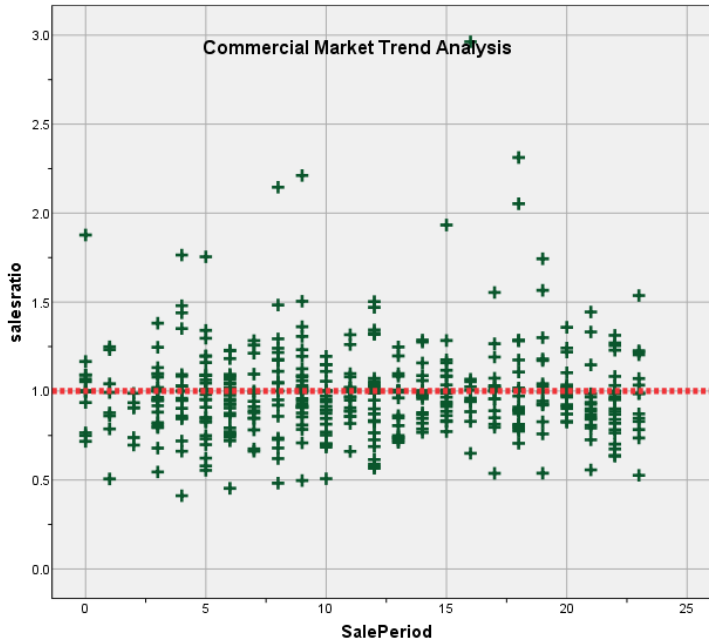
Commercial/Industrial Market Trend Analysis

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

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.974	.024		40.616	.000
	SalePeriod	.001	.002	.032	.691	.490

a. Dependent Variable: salesratio



There was a statistically significant trend, although the magnitude of that trend, when considering the number of subclasses, was not significant; therefore, we concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median change in value between valuation year 2018 and valuation year 2020 for unsold and sold commercial/industrial properties overall and by subclass, as follows:

Report

DIFF				
	DIFF	N	Median	Mean
sold				
UNSOLD		229693	1.07	1.08
SOLD		454	1.12	1.16

Report

DIFF				
ABSTRIMP	DIFF	N	Median	Mean
2212.00	UNSOLD	1564	.9934	1.0479
	SOLD	65	1.0415	1.1418
2220.00	UNSOLD	2122	1.0186	1.0712
	SOLD	114	1.0279	1.0837

2225.00	UNSOLD	858	1.0709	1.1247
	SOLD	14	1.1333	1.2659
2230.00	UNSOLD	1607	1.0767	1.1202
	SOLD	65	1.0358	1.1201
2235.00	UNSOLD	2151	1.2457	1.2923
	SOLD	131	1.2543	1.3133
2245.00	UNSOLD	922	.9687	1.0208
	SOLD	60	1.0838	1.1658
3215.00	UNSOLD	238	1.2600	1.3135
	SOLD	19	1.2747	1.4313

Report

DIFF				
ABSTRIMP	sold	N	Median	Mean
2212	UNSOLD	1523	.98	1.02
	SOLD	68	1.04	1.13
2220	UNSOLD	2070	1.01	1.04
	SOLD	111	1.00	1.05
2225	UNSOLD	844	1.07	1.12
	SOLD	9	1.21	1.19
2230	UNSOLD	1565	1.06	1.09
	SOLD	64	1.02	1.11
2235	UNSOLD	2094	1.23	1.23
	SOLD	127	1.25	1.27
2245	UNSOLD	912	.97	1.01
	SOLD	58	1.07	1.12
3215	UNSOLD	226	1.24	1.25
	SOLD	17	1.27	1.36

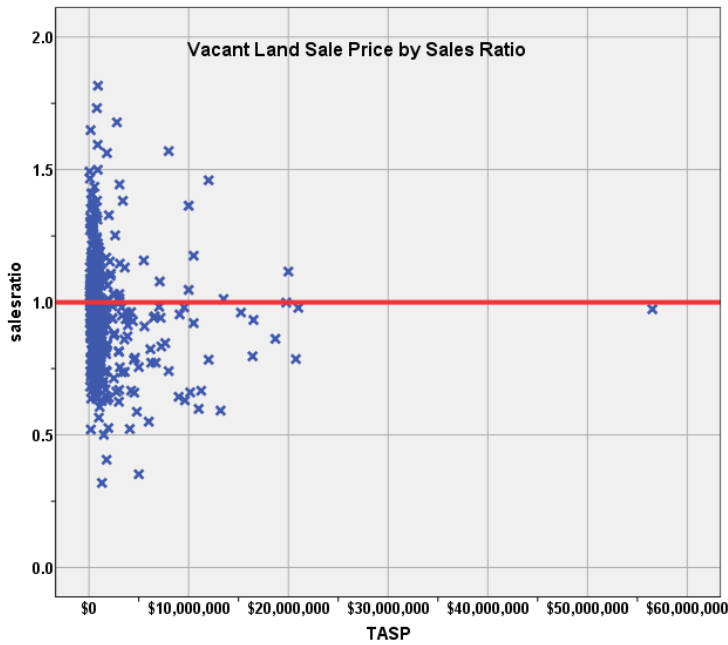
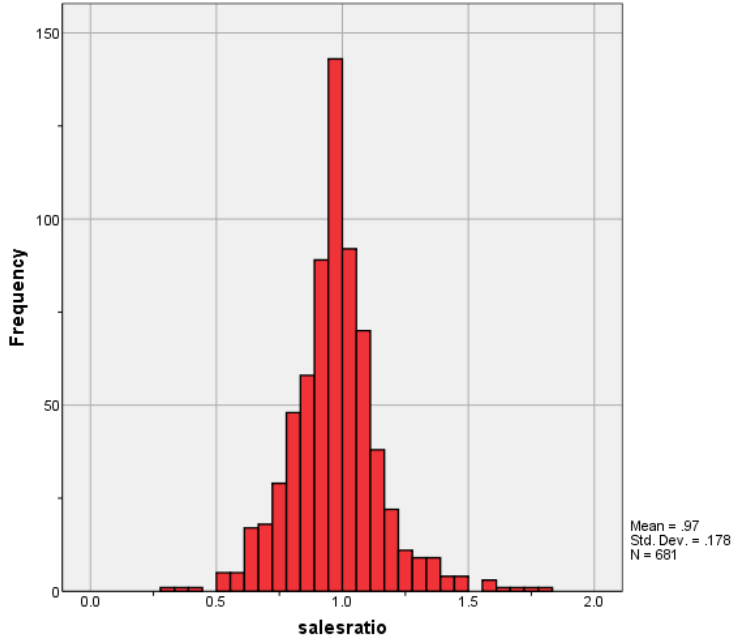
The above results indicated that sold and unsold commercial/industrial properties were valued consistently.

V. VACANT LAND SALE RESULTS

There were 681 qualified vacant land sales in the 24 month sale period ending June 30, 2020. The following sales ratio analysis was performed:

Median	0.970
Price Related Differential	1.042
Coefficient of Dispersion	13.0

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



The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

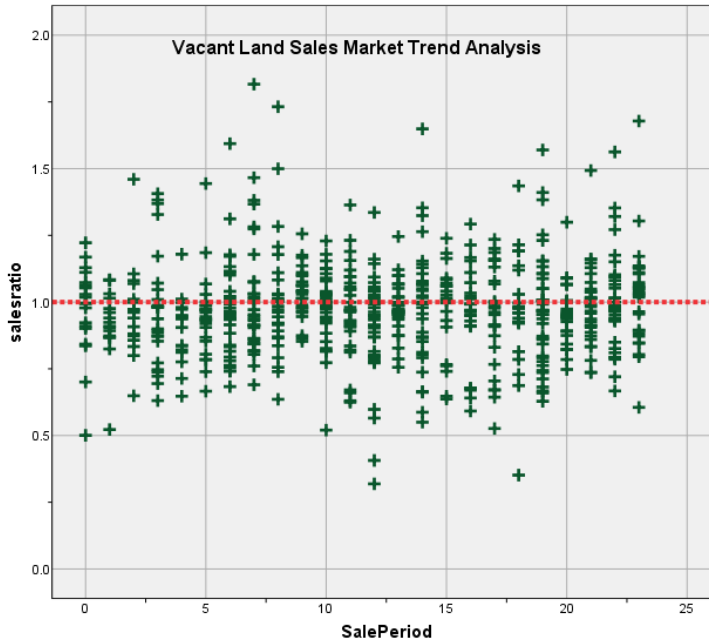
Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 24-month sale period, with the following results:

Coefficients^a

Model	Unstandardized Coefficients		Standardized	t	Sig.	
	B	Std. Error	Coefficients Beta			
1	(Constant)	.958	.014		66.311	.000
	SalePeriod	.001	.001	.043	1.122	.262

a. Dependent Variable: salesratio



While there was a marginally statistically significant trend in the vacant land data, the magnitude of the trend was not significant. We conclude that the assessor has adequately considered market trending in the vacant land sales analysis.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in actual value for valuation year 2018 and valuation year 2020 between each group. We stratified the vacant land properties by neighborhoods with at least 10 sales and found overall consistency. The following results present the overall comparison results:

Report

DIFF	N	Median	Mean
UNSOLD	17247	1.00	1.10
SOLD	531	1.20	1.22

Report

DIFF				
NBHD	sold	N	Median	Mean
134	UNSOLD	1165	1.00	1.01
	SOLD	3	1.25	1.07
235	UNSOLD	229	1.10	1.11
	SOLD	12	1.17	1.15
250	UNSOLD	253	1.00	1.01
	SOLD	11	1.05	1.16
526	UNSOLD	2	1.13	1.13
	SOLD	37	1.15	1.17
530	UNSOLD	4	1.15	1.18
	SOLD	25	1.23	1.23
532	UNSOLD	2	1.25	1.25
	SOLD	13	1.25	1.25
552	UNSOLD	1	1.00	1.00
	SOLD	11	1.20	1.17

There was a pattern of sold values changing by a greater amount than unsold properties. The county files did not include subdivision numbers, so it was not possible to perform this analysis at the subdivision level. We have discussed this with the assessor.

V. CONCLUSIONS

Based on this 2022 audit statistical analysis, residential, commercial, and vacant land properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP													
PRELUSE	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
		Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
1212	1.011	1.009	1.012	1.001	1.000	1.001	95.1%	1.008	1.006	1.009	1.003	.049	9.2%
1215	.997	.978	1.015	.989	.974	1.003	95.2%	.995	.974	1.015	1.002	.081	11.0%
1220	1.035	1.008	1.062	1.014	.997	1.061	96.7%	1.034	1.007	1.061	1.001	.081	10.5%
1225	1.058	.969	1.148	1.009	1.000	1.042	95.1%	.983	.965	1.002	1.077	.112	45.6%
1230	1.004	1.002	1.006	1.000	.999	1.000	95.1%	1.001	.998	1.004	1.003	.048	6.9%

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

Commercial Land

Ratio Statistics for CURRTOT / TASP													
Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered	
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound				
.988	.965	1.011	.985	.957	.999	95.7%	.881	.829	.934	1.121	.166	25.6%	

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

Vacant Land

Ratio Statistics for CURRLND / TASP													
Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered	
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound				
.972	.959	.986	.970	.963	.980	95.4%	.933	.902	.964	1.042	.130	18.3%	

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.

Residential Median Ratio Stratification

Improvement Age

Case Processing Summary

PREDUSE		Count	Percent
1212	AgeRec	0	72.8%
		Over 100	425
		75 to 100	434
		50 to 75	1251
		25 to 50	310
		5 to 25	460
		5 or Newer	2292
	Overall	19030	100.0%
	Excluded	0	
	Total	19030	
1215	AgeRec	0	82.4%
		Over 100	2
		75 to 100	2
		50 to 75	18
		25 to 50	2
	Overall	136	100.0%
	Excluded	0	
	Total	136	
1220	AgeRec	0	85.9%
		75 to 100	4
		50 to 75	4
		25 to 50	1
	Overall	64	100.0%
	Excluded	0	
	Total	64	
1225	AgeRec	0	93.0%
		75 to 100	2
		50 to 75	2
		25 to 50	3
		5 to 25	1
	Overall	114	100.0%
	Excluded	0	
	Total	114	
1230	AgeRec	0	77.2%
		Over 100	50
		75 to 100	22
		50 to 75	352
		25 to 50	342
		5 to 25	188
		5 or Newer	437
	Overall	6105	100.0%
	Excluded	0	
	Total	6105	

Ratio Statistics for CURRTOT / TASP

PREDUSE	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212	0	1.001	1.003	.050	9.2%
	Over 100	1.002	1.005	.065	10.8%
	75 to 100	1.000	1.003	.063	9.9%
	50 to 75	1.002	1.000	.059	12.0%
	25 to 50	.997	1.004	.046	7.8%
	5 to 25	1.002	.999	.038	5.4%
	5 or Newer	1.000	1.005	.034	9.0%
Overall	1.001	1.003	.049	9.4%	
1215	0	.987	1.002	.081	11.1%
	Over 100	1.041	1.002	.029	4.2%
	75 to 100	1.150	.956	.147	20.8%
	50 to 75	1.022	1.016	.072	9.2%
	25 to 50	1.030	.983	.076	10.8%
	Overall	.989	1.002	.081	11.1%
1220	0	1.042	.997	.080	10.2%
	75 to 100	.997	.986	.064	13.1%
	50 to 75	.994	1.008	.076	11.9%
	25 to 50	.983	1.000	.000	.
	Overall	1.014	1.001	.081	10.9%
1225	0	1.012	1.079	.115	49.7%
	75 to 100	.940	.998	.023	3.2%
	50 to 75	1.037	.991	.062	8.7%
	25 to 50	1.088	1.100	.058	10.6%
	5 to 25	1.000	1.000	.000	.
	Overall	1.009	1.077	.112	48.1%
1230	0	1.000	1.002	.047	6.8%
	Over 100	.994	1.015	.065	8.6%
	75 to 100	1.013	1.007	.088	11.1%
	50 to 75	1.001	1.006	.060	8.7%
	25 to 50	.999	1.001	.048	7.4%
	5 to 25	1.002	1.004	.047	7.0%
	5 or Newer	.998	1.005	.039	5.6%
	Overall	1.000	1.003	.048	6.9%

Improvement Size

Case Processing Summary

PREDUSE		Count	Percent	
1212	ImpSFRec	0	72.8%	
		LE 500 sf	1	0.0%
		500 to 1,000 sf	908	4.8%
		1,000 to 1,500 sf	1811	9.5%
		1,500 to 2,000 sf	1366	7.2%
		2,000 to 3,000 sf	846	4.4%
		3,000 sf or Higher	240	1.3%
		Overall	19030	100.0%
	Excluded	0		
	Total	19030		
1215	ImpSFRec	0	82.4%	
		1,000 to 1,500 sf	4	2.9%

		1,500 to 2,000 sf	9	6.6%
		2,000 to 3,000 sf	8	5.9%
		3,000 sf or Higher	3	2.2%
	Overall		136	100.0%
	Excluded		0	
	Total		136	
1220	ImpSFRec	0	55	85.9%
		2,000 to 3,000 sf	3	4.7%
		3,000 sf or Higher	6	9.4%
	Overall		64	100.0%
	Excluded		0	
	Total		64	
1225	ImpSFRec	0	106	93.0%
		3,000 sf or Higher	8	7.0%
	Overall		114	100.0%
	Excluded		0	
	Total		114	
1230	ImpSFRec	0	4714	77.2%
		LE 500 sf	72	1.2%
		500 to 1,000 sf	645	10.6%
		1,000 to 1,500 sf	487	8.0%
		1,500 to 2,000 sf	136	2.2%
		2,000 to 3,000 sf	44	0.7%
		3,000 sf or Higher	7	0.1%
	Overall		6105	100.0%
	Excluded		0	
	Total		6105	

Ratio Statistics for CURRTOT / TASP

PREDUSE	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212	0	1.001	1.003	.050	9.2%
	LE 500 sf	1.020	1.000	.000	.
	500 to 1,000 sf	.998	1.003	.049	7.2%
	1,000 to 1,500 sf	1.002	1.003	.043	7.4%
	1,500 to 2,000 sf	1.000	1.003	.038	6.6%
	2,000 to 3,000 sf	.999	1.010	.055	14.6%
	3,000 sf or Higher	1.004	1.014	.077	21.0%
	Overall	1.001	1.003	.049	9.4%
1215	0	.987	1.002	.081	11.1%
	1,000 to 1,500 sf	1.092	1.015	.071	10.8%
	1,500 to 2,000 sf	1.009	1.010	.066	9.3%
	2,000 to 3,000 sf	1.036	.997	.082	12.9%
	3,000 sf or Higher	.981	1.010	.032	5.0%
	Overall	.989	1.002	.081	11.1%
1220	0	1.042	.997	.080	10.2%
	2,000 to 3,000 sf	1.013	1.012	.095	14.3%
	3,000 sf or Higher	.988	.990	.043	9.8%
	Overall	1.014	1.001	.081	10.9%
1225	0	1.012	1.079	.115	49.7%
	3,000 sf or Higher	.986	1.042	.067	8.6%
	Overall	1.009	1.077	.112	48.1%
1230	0	1.000	1.002	.047	6.8%

LE 500 sf	.993	1.006	.043	5.9%
500 to 1,000 sf	.997	1.003	.047	6.8%
1,000 to 1,500 sf	1.002	1.010	.053	8.1%
1,500 to 2,000 sf	1.000	1.008	.049	6.9%
2,000 to 3,000 sf	.990	1.003	.054	8.1%
3,000 sf or Higher	.997	1.009	.068	8.6%
Overall	1.000	1.003	.048	6.9%

Improvement Quality

Case Processing Summary

PREDUSE		Count	Percent
1212	QUALITY	13858	72.8%
	A	75	0.4%
	A-	1	0.0%
	A+	1	0.0%
	B	1970	10.4%
	B-	1	0.0%
	B+	81	0.4%
	C	2995	15.7%
	C-	1	0.0%
	C+	4	0.0%
	D	37	0.2%
	X	6	0.0%
	Overall	19030	100.0%
	Excluded	0	
	Total	19030	
1215	QUALITY	112	82.4%
	C	21	15.4%
	C+	2	1.5%
	D	1	0.7%
	Overall	136	100.0%
	Excluded	0	
	Total	136	
1220	QUALITY	55	85.9%
	C	9	14.1%
	Overall	64	100.0%
	Excluded	0	
	Total	64	
1225	QUALITY	106	93.0%
	A	2	1.8%
	C	6	5.3%
	Overall	114	100.0%
	Excluded	0	
	Total	114	
1230	QUALITY	4714	77.2%
	A	134	2.2%
	A+	6	0.1%
	B	509	8.3%
	B-	1	0.0%
	B+	3	0.0%
	C	704	11.5%

	C+	5	0.1%
	D	27	0.4%
	X	2	0.0%
Overall		6105	100.0%
Excluded		0	
Total		6105	

Ratio Statistics for CURRTOT / TASP

PREDUSE	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered	
1212		1.001	1.003	.050	9.2%	
	A	1.007	1.046	.121	33.2%	
	A-	1.000	1.000	.000	.	
	A+	.731	1.000	.000	.	
	B	1.000	1.004	.044	10.9%	
	B-	1.397	1.000	.000	.	
	B+	1.000	1.005	.042	6.3%	
	C	1.001	1.003	.046	7.4%	
	C-	1.116	1.000	.000	.	
	C+	1.040	1.040	.124	19.1%	
	D	.986	1.003	.052	6.8%	
	X	.993	.959	.086	12.2%	
	Overall		1.001	1.003	.049	9.4%
1215		.987	1.002	.081	11.1%	
	C	1.014	1.002	.069	9.9%	
	C+	.990	.995	.120	17.0%	
	D	1.178	1.000	.000	.	
	Overall	.989	1.002	.081	11.1%	
1220		1.042	.997	.080	10.2%	
	C	.990	1.000	.064	10.7%	
	Overall	1.014	1.001	.081	10.9%	
1225		1.012	1.079	.115	49.7%	
	A	.964	1.007	.037	5.3%	
	C	1.031	.970	.074	8.3%	
	Overall	1.009	1.077	.112	48.1%	
1230		1.000	1.002	.047	6.8%	
	A	.999	1.008	.047	6.8%	
	A+	1.024	1.007	.109	15.1%	
	B	1.000	1.005	.043	6.5%	
	B-	1.001	1.000	.000	.	
	B+	.945	.998	.044	7.3%	
	C	1.000	1.005	.054	7.9%	
	C+	1.005	1.012	.056	9.7%	
	D	1.005	1.003	.036	5.1%	
	X	.897	1.030	.088	12.4%	
	Overall		1.000	1.003	.048	6.9%

Improvement Condition

Case Processing Summary

PREDUSE			Count	Percent
1212	CONDITION	1	8	0.2%
		2	63	1.2%
		3	2526	48.8%
		4	2555	49.4%
		5	11	0.2%
		7	8	0.2%
		Overall	5171	100.0%
	Excluded	13859		
	Total	19030		
1215	Overall	0	100.0%	
	Excluded	136		
	Total	136		
1220	Overall	0	100.0%	
	Excluded	64		
	Total	64		
1225	Overall	0	100.0%	
	Excluded	114		
	Total	114		
1230	CONDITION	1	1	0.1%
		3	730	52.5%
		4	659	47.4%
		5	1	0.1%
		Overall	1391	100.0%
	Excluded	4714		
	Total	6105		

Ratio Statistics for CURRTOT / TASP

PREDUSE	Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212	1	.956	1.009	.074	11.7%
	2	1.027	1.020	.113	28.1%
	3	1.001	1.004	.056	10.0%
	4	1.000	1.004	.035	8.4%
	5	.974	1.008	.053	8.1%
	7	.939	.986	.050	6.9%
	Overall	1.000	1.003	.046	9.7%
1230	1	.936	1.000	.000	.
	3	1.000	1.004	.055	8.0%
	4	.999	1.006	.043	6.4%
	5	1.114	1.000	.000	.
	Overall	1.000	1.007	.049	7.3%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	\$50K to \$100K	2	0.4%
	\$100K to \$150K	1	0.2%
	\$150K to \$200K	6	1.3%
	\$200K to \$300K	9	1.9%
	\$300K to \$500K	50	10.6%
	\$500K to \$750K	62	13.1%
	\$750K to \$1,000K	45	9.5%
	Over \$1,000K	298	63.0%
Overall		473	100.0%
Excluded		0	
Total		473	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$50K to \$100K	.969	1.003	.048	6.8%
\$100K to \$150K	.999	1.000	.000	.
\$150K to \$200K	.967	.990	.213	38.2%
\$200K to \$300K	.994	1.001	.172	25.4%
\$300K to \$500K	.997	1.000	.127	20.0%
\$500K to \$750K	1.001	.998	.171	32.7%
\$750K to \$1,000K	.996	1.004	.179	26.3%
Over \$1,000K	.956	1.103	.171	25.3%
Overall	.985	1.121	.166	25.7%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	428	90.5%
	2212.00	9	1.9%
	2220.00	9	1.9%
	2225.00	2	0.4%
	2230.00	7	1.5%
	2235.00	16	3.4%
	3215.00	2	0.4%
	Overall		473
Excluded		0	
Total		473	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.982	1.127	.166	26.2%
2212.00	.971	1.077	.191	23.8%
2220.00	.765	1.011	.146	20.1%
2225.00	1.248	1.018	.153	21.6%
2230.00	.990	1.013	.121	17.3%
2235.00	1.000	.995	.135	19.7%
3215.00	1.203	.968	.077	11.0%
Overall	.985	1.121	.166	25.7%

Improvement Age

Case Processing Summary

	Count	Percent
AgeRec 0	428	90.5%
Over 100	3	0.6%
75 to 100	4	0.8%
50 to 75	18	3.8%
25 to 50	17	3.6%
5 to 25	3	0.6%
Overall	473	100.0%
Excluded	0	
Total	473	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.982	1.127	.166	26.2%
Over 100	1.057	1.049	.192	30.8%
75 to 100	.927	.990	.190	24.7%
50 to 75	1.001	.967	.155	21.7%
25 to 50	.939	.997	.156	20.9%
5 to 25	.971	.997	.173	26.3%
Overall	.985	1.121	.166	25.7%

Improvement Condition

Case Processing Summary

	Count	Percent
ImpSFRec 0	429	90.7%
500 to 1,000 sf	1	0.2%
1,500 to 2,000 sf	1	0.2%
2,000 to 3,000 sf	2	0.4%
3,000 sf or Higher	40	8.5%
Overall	473	100.0%
Excluded	0	
Total	473	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.980	1.126	.166	26.3%
500 to 1,000 sf	1.003	1.000	.000	.
1,500 to 2,000 sf	.849	1.000	.000	.
2,000 to 3,000 sf	.839	1.001	.120	16.9%
3,000 sf or Higher	1.000	1.005	.166	21.8%
Overall	.985	1.121	.166	25.7%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

	Count	Percent
SPRec		
\$50K to \$100K	6	0.9%
\$100K to \$150K	18	2.6%
\$150K to \$200K	14	2.1%
\$200K to \$300K	28	4.1%
\$300K to \$500K	179	26.3%
\$500K to \$750K	165	24.2%
\$750K to \$1,000K	103	15.1%
Over \$1,000K	168	24.7%
Overall	681	100.0%
Excluded	0	
Total	681	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$50K to \$100K	1.090	1.010	.166	23.8%
\$100K to \$150K	.987	.999	.115	17.2%
\$150K to \$200K	.996	1.000	.203	28.2%
\$200K to \$300K	.957	.998	.119	17.3%
\$300K to \$500K	1.015	1.004	.104	13.7%
\$500K to \$750K	.967	1.000	.088	12.3%
\$750K to \$1,000K	.989	.999	.144	20.8%
Over \$1,000K	.923	.989	.165	23.0%
Overall	.970	1.042	.130	18.4%

Subclass

Case Processing Summary

	Count	Percent
ABSTRLND		
.00	223	32.7%
100.00	37	5.4%
101.00	7	1.0%
200.00	23	3.4%
300.00	10	1.5%
520.00	1	0.1%
530.00	1	0.1%

	1112.00	301	44.2%
	1120.00	1	0.1%
	1125.00	9	1.3%
	1130.00	1	0.1%
	2112.00	4	0.6%
	2115.00	2	0.3%
	2120.00	12	1.8%
	2125.00	1	0.1%
	2130.00	33	4.8%
	2135.00	14	2.1%
	3115.00	1	0.1%
Overall		681	100.0%
Excluded		0	
Total		681	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.970	1.056	.127	17.8%
100.00	.963	1.036	.123	17.8%
101.00	.971	.995	.069	12.4%
200.00	.883	.966	.165	19.6%
300.00	1.037	1.117	.180	23.6%
520.00	1.088	1.000	.000	.
530.00	1.444	1.000	.000	.
1112.00	.983	1.014	.107	14.6%
1120.00	.969	1.000	.000	.
1125.00	.823	1.007	.160	19.1%
1130.00	.737	1.000	.000	.
2112.00	.965	.752	.254	39.2%
2115.00	1.182	1.115	.170	24.0%
2120.00	.865	1.096	.181	29.7%
2125.00	1.816	1.000	.000	.
2130.00	.938	1.091	.187	26.8%
2135.00	.981	.985	.249	32.6%
3115.00	.974	1.000	.000	.
Overall	.970	1.042	.130	18.4%