





September 15, 2021

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

**RE: Final Report for the 2021 Colorado Property Assessment Study**

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2021 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

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## 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.

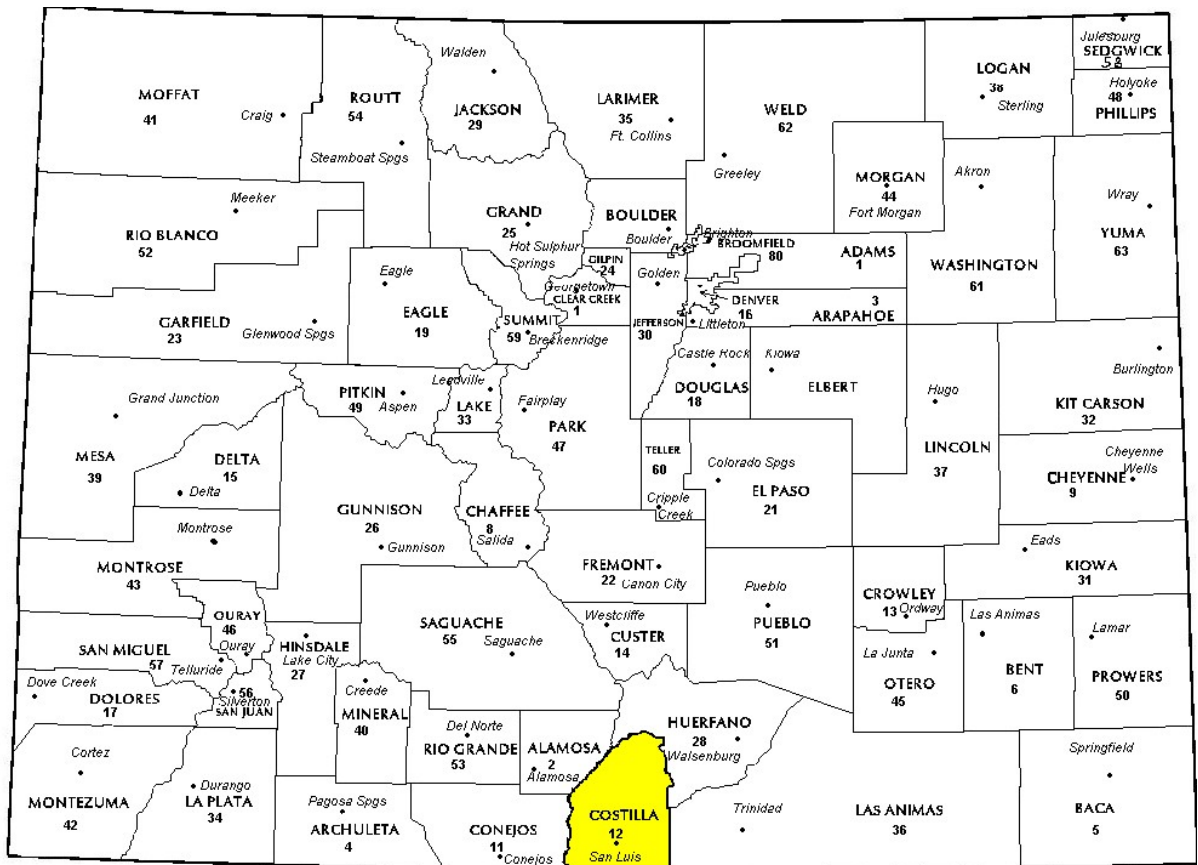
Wildrose Audit has completed the Property Assessment Study for 2021 and is pleased to report its findings for Costilla County in the following report.

# REGIONAL/HISTORICAL SKETCH OF COSTILLA COUNTY

## Regional Information

Costilla County is located in the San Luis Valley region of Colorado. The San Luis Valley is a large, broad, alpine valley in the Rio Grande Basin of south-central Colorado. The valley is drained to the south by the Rio Grande River

which rises in the San Juan Mountains to the west of the valley. The San Luis Valley includes Alamosa, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.



## Historical Information

Costilla County has approximately 1,227.0 square miles and an estimated population of approximately 3,887 people with 2.9 people per square mile, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 10.3 percent change from April 1, 2010 to July 1, 2019.

Costilla County was the first area of the state of Colorado to be colonized, with recorded history dating back to 1540, the year Coronado explored the Southwest. Costilla County was one of the original 17 counties created by the Territory of Colorado on November 1, 1861. The county was named for the Costilla River. Although San Miguel was originally designated the county seat, the county government was moved to San Luis in 1863.

The county's original boundaries had the county extend over much of south-central Colorado. Much of the northern portion became part of Saguache County in 1866, and the western portions were folded into Hinsdale and Rio Grande counties in 1874. Costilla County arrived at its modern boundaries in

1913 when Alamosa County was created from its northwest portions.

Costilla County is part of the San Luis Valley, an 8,000 square mile alpine valley nicknamed the American Tibet, with an average altitude of 7800 feet above sea level. Costilla County is the home to Colorado's oldest town, San Luis, founded in 1851. Many villages of the County were the last to be established on a Spanish/Mexican land grant in this country. It is home to Colorado's oldest Christian structure (the San Acacio Mission) and the nation's newest shrine, the Stations of the Cross, with hundreds of people walking on a pilgrimage from as far as Pueblo. The state's first water rights, the San Luis Peoples Ditch, is located in Costilla County. The County has the last working Commons in America where local residents have grazed their sheep, cattle and horses on six hundred shared, unfenced acres for hundreds of years. Colorado has fifty-four peaks that exceed 14,000 feet and four of those can be accessed from Costilla County: Little Bear, Lindsay, Culebra and Blanca, which at 14,345 is higher than Pikes Peak.

*(Wikipedia.org, costillacounty-co.gov & slvguide.com)*

# RATIO ANALYSIS

## Methodology

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

Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either “Q” or “C.” The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In

every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were “lost” because of trimming.

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

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

## Conclusions

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

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

The results for Costilla County are:

<b>Costilla County Ratio Grid</b>					
<b>Property Class</b>	<b>Number of Qualified Sales</b>	<b>Unweighted Median Ratio</b>	<b>Price Related Differential</b>	<b>Coefficient of Dispersion</b>	<b>Time Trend Analysis</b>
*Commercial/Industrial	N/A	N/A	N/A	N/A	N/A
Residential	186	0.992	1.022	15.3	Compliant
Vacant Land	979	1.000	1.062	20.9	Compliant

*\*Due to the small number of sales, a procedural audit was performed*

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

Costilla 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.

<b>Sold/Unsold Results</b>	
<b>Property Class</b>	<b>Results</b>
Commercial/Industrial	N/A
Residential	Compliant
Vacant Land	Compliant

### **Conclusions**

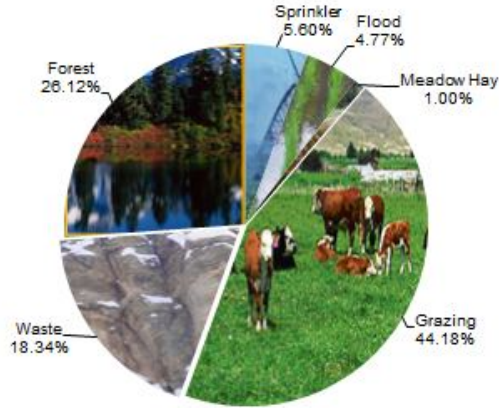
After applying the above described methodologies, it is concluded that Costilla County is reasonably treating its sold and unsold properties in the same manner.

### **Recommendations**

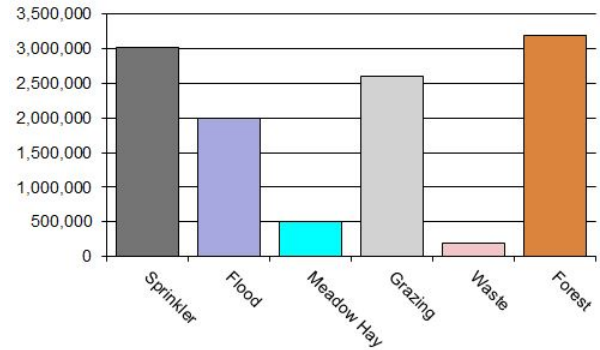
None

# 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:

<b>Costilla County Agricultural Land Ratio Grid</b>						
<b>Abstract Code</b>	<b>Land Class</b>	<b>Number Of Acres</b>	<b>County Value Per Acre</b>	<b>County Assessed Total Value</b>	<b>WRA Total Value</b>	<b>Ratio</b>
4107	Sprinkler	23,573	128.28	3,023,933	3,166,297	0.96
4117	Flood	20,102	99.49	2,000,021	1,988,564	1.01
4137	Meadow Hay	4,197	122.08	512,367	512,367	1.00
4147	Grazing	186,117	13.99	2,603,166	2,603,166	1.00
4177	Forest	110,046	29.04	3,195,753	3,195,753	1.00
4167	Waste	77,259	2.42	186,824	186,824	1.00
<b>Total/Avg</b>		<b>421,294</b>	<b>27.35</b>	<b>11,522,064</b>	<b>11,652,971</b>	<b>0.99</b>

### 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

Costilla County has substantially complied with the procedures provided by the Division of

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## Agricultural Land Under Improvements

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### 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

Costilla 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
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

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

- Property Record Card Analysis
- Questionnaires
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Costilla 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 2021 for Costilla County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 46 sales listed as unqualified.

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

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

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

When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number of properties or by value, from the prior year. 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.

If 50 percent or more of the sales are qualified, the contractor has reviewed a statistically significant sample of unqualified sales, excluding sales that were disqualified for obvious reasons.

The following subclasses were analyzed for Costilla County:

0100 Residential Lots  
3215 Manufacturing/Processing

### **Conclusions**

Costilla County appears to be doing an adequate job of verifying their sales. WRA agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

### **Recommendations**

None



# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

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

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## Earth and Stone Products

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### 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 2021 in Costilla County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14). Discounting procedures were applied to all subdivisions where less than 80 percent of all sites were sold using the present worth method. The market approach was applied where 80 percent or more of the subdivision sites were sold. An absorption period was estimated for each subdivision that was discounted. An appropriate discount rate was

developed using the summation method. Subdivision land with structures was appraised at full market value.

### **Conclusions**

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

### **Recommendations**

None

## POSSESSORY INTEREST PROPERTIES

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Costilla County is exempt from the Possessory Interest Study.

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# PERSONAL PROPERTY AUDIT

Costilla 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.

Costilla 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.

Costilla County submitted their personal property written audit plan and was current for the 2021 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:

- New businesses filing for the first time
- Same business type or use
- Businesses with no deletions or additions for 2 or more years
- Accounts close to the \$7,900 actual value exemption status



### **Conclusions**

Costilla 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*

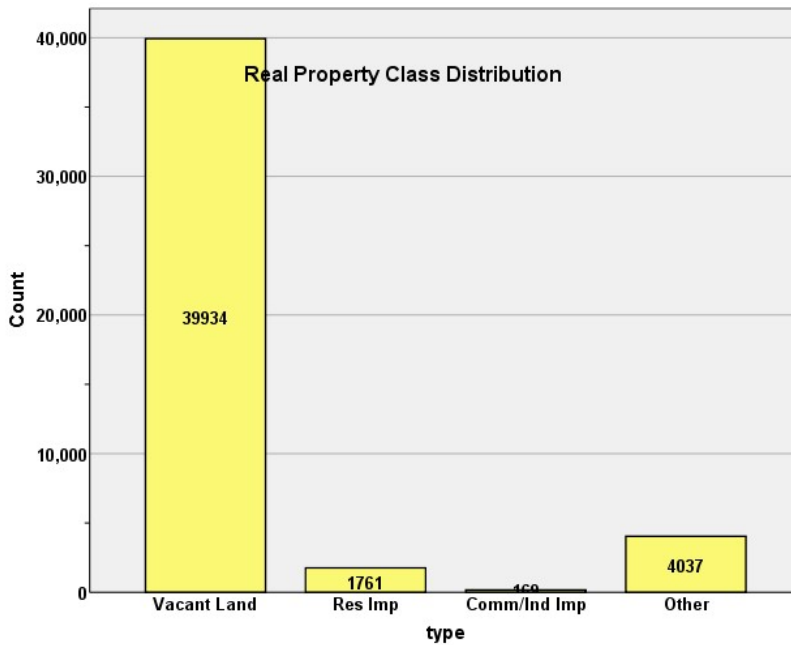
# STATISTICAL APPENDIX



## STATISTICAL COMPLIANCE REPORT FOR COSTILLA COUNTY 2021

### I. OVERVIEW

Costilla County is located in south central Colorado. The county has a total of 45,901 real property parcels, according to data submitted by the county assessor’s office in 2021. 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 95.4% of all vacant land parcels.

For residential improved properties, single family properties accounted for over 98.3% of all residential real property.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 0.4% of all such properties in this county.

### II. DATA FILES

The following sales analyses were based on the requirements of the 2021 Colorado Property Assessment Study. Information was provided by the Costilla Assessor’s Office in May 2021. The data included all 5 property record files as specified by the Auditor.

### III. RESIDENTIAL SALES RESULTS

There were 186 qualified sales. The sale period used in this analysis was the 60-month period ending June 30, 2020. The following are the results from the sales ratio analysis:

Median	<b>0.992</b>
Price Related Differential	<b>1.022</b>
Coefficient of Dispersion	<b>15.3</b>

We next stratified the sale ratio analysis by neighborhoods with at least 10 sales, as follows:

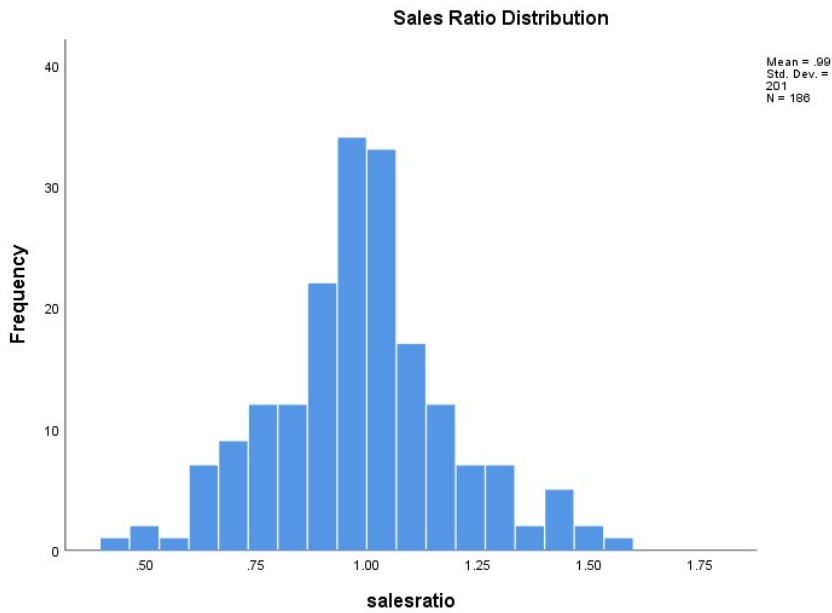
#### Case Processing Summary

	Count	Percent
NBHD	100	7.8%
	500	7.8%
	600	6.5%
	701	28.6%
	702	37.0%
	703	12.3%
Overall	154	100.0%
Excluded	0	
Total	154	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
100	.967	1.000	.174
500	.974	.984	.164
600	.947	1.059	.179
701	1.010	1.007	.098
702	.961	1.054	.162
703	1.014	1.069	.191
Overall	.982	1.019	.151

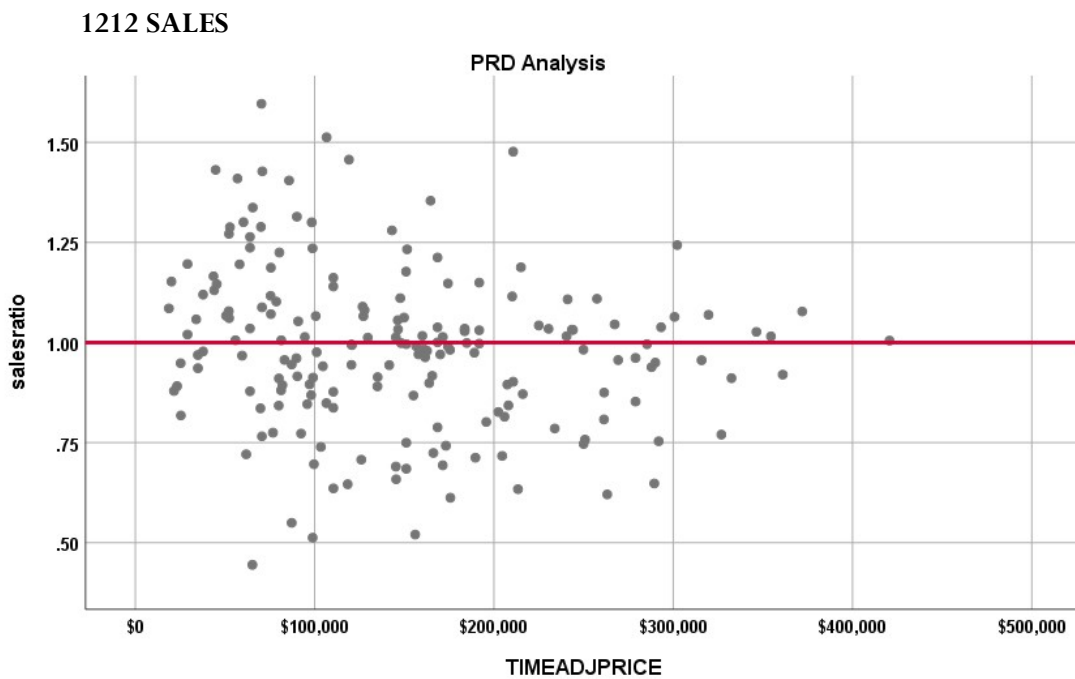
Only Neighborhoods 701 and 702 had sufficient sales for analysis. NBHD 703 after trimming using IAAO guidelines was in compliance. The overall ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graph describes further the sales ratio distribution for these properties:



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

### 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 1.022, 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<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.945	.029		32.690	.000
	CURRTOT	0.00000029	.000	.120	1.636	.104

a. Dependent Variable: salesratio

The slope of the line at 0.00000029 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array.

We also stratified the sales ratio analysis by the sale price range, as follows:

**Case Processing Summary**

		Count	Percent
SPRec	LT \$100K	69	37.1%
	\$100K to \$200K	71	38.2%
	\$200K to \$300K	35	18.8%
	Over \$300K	11	5.9%
Overall		186	100.0%
Excluded		0	
Total		186	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion
LT \$100K	1.035	1.013	.171
\$100K to \$200K	.990	1.002	.139
\$200K to \$300K	.938	1.003	.144
Over \$300K	1.015	1.002	.082
Overall	.992	1.022	.153

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

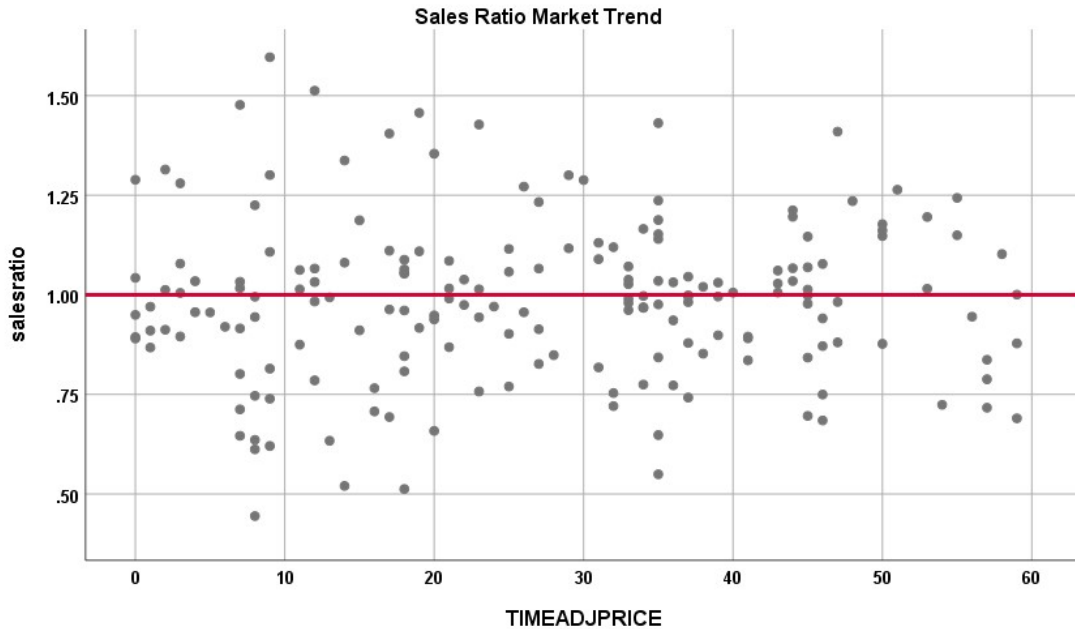
**Residential Market Trend Analysis**

We next analyzed the residential dataset using the 60-month sale period for any residual market trending, with the following results:

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.978	.029		34.153	.000
	SalePeriod	.000	.001	.024	.332	.740

a. Dependent Variable: salesratio



With no significant statistical trend evident in the sales ratio data, 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 2021 median actual value per square foot between both groups, as follows:

#### Report

VALSF			
sold	N	Median	Mean
UNSOLD	1532	\$59	\$66
SOLD	185	\$69	\$71

#### 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	.004	Reject the null hypothesis.

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

Based on the statistically significant difference between sold and unsold residential properties using the first comparison test, we next used the second comparison test that compares the median and mean change in actual value between both groups for valuation year 2018 and valuation year 2020, as follows:

**Report**

DIFF			
sold	N	Median	Mean
UNSOLD	1491	1.0363	1.0776
SOLD	184	1.0435	1.0893

**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	.400	Retain the null hypothesis.

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

We next stratified this comparison test by neighborhoods with at least 10 sales, as follows:

**Report**

DIFF				
NBHD	sold	N	Median	Mean
100	UNSOLD	284	1.0000	.9800
	SOLD	12	1.0073	1.0361
200	UNSOLD	228	1.0735	1.0911
	SOLD	9	1.1843	1.2209
500	UNSOLD	93	1.0485	1.0774
	SOLD	12	1.0547	1.0971
600	UNSOLD	124	1.1584	1.1595
	SOLD	10	1.1559	1.1407
701	UNSOLD	123	1.0389	1.0753
	SOLD	44	.9953	1.0216
702	UNSOLD	319	1.0388	1.0541
	SOLD	56	1.0491	1.1132
703	UNSOLD	106	1.0049	1.0362
	SOLD	19	1.0060	1.0629

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

**IV. COMMERCIAL/INDUSTRIAL SALE RESULTS**

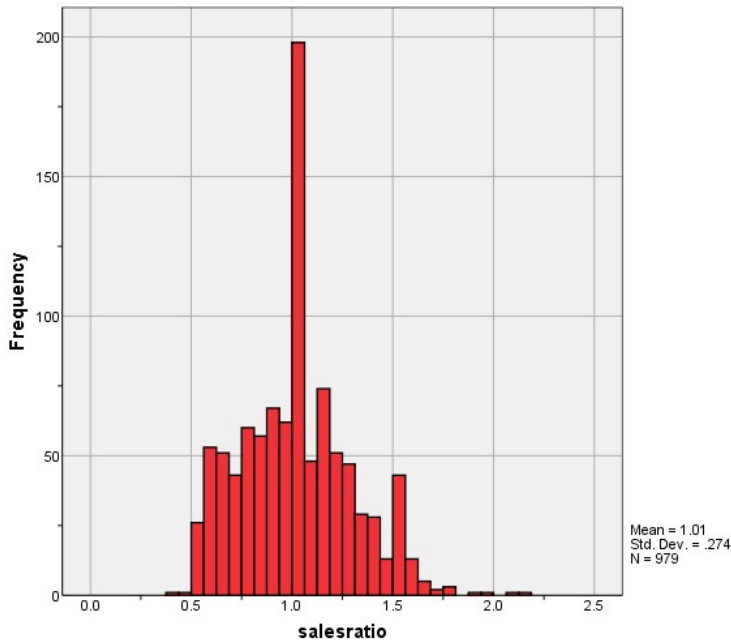
The County did not have enough qualified commercial/industrial sales to be statistically significant. A procedural audit was completed for taxable year 2021. This analysis reviewed all qualified commercial sales. Information was gathered concerning class of property, year built, improvement size, type and quality of construction, condition at the time of sale, sale date and amount and the Assessor value. The audit then determined sale price per square foot and the sales ratio. The audit concluded that the County is in compliance due to the lack of substantive data to support a revaluation decision.

## V. VACANT LAND SALE RESULTS

There were 979 qualified sales used in this analysis that for the 24-month period ending June 30, 2020. The sales were analyzed as follows:

Median	<b>1.000</b>
Price Related Differential	<b>1.062</b>
Coefficient of Dispersion	<b>20.9</b>

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





The following is the above graph with sales under \$35,000:



### Vacant Land Market Trend Analysis

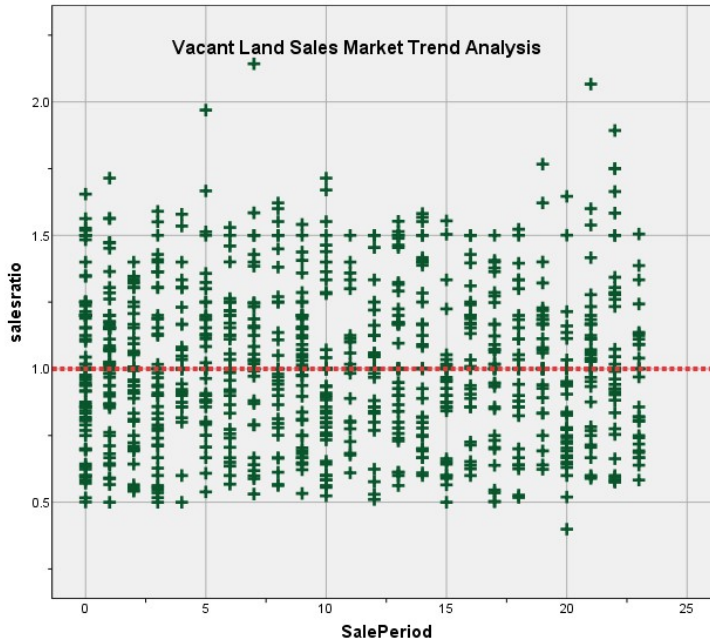
The vacant land sales were analyzed, examining the sale ratios across the 24 month sale period with the following results:



**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	1.024	.015		67.486	.000
	SalePeriod	-.001	.001	-.027	-.832	.406

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concluded that the assessor has adequately addressed market trending for vacant land in Costilla County.

**Sold/Unsold Analysis**

We compared the median change in actual value between valuation year 2018 and valuation year 2020 for vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

<b>Report</b>			
DIFF			
	N	Median	Mean
UNSOLD	44833	1.0000	1.2951
SOLD	971	1.0000	1.0850

### 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	.687	Retain the null hypothesis.

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

We also stratified this analysis by subdivisions with at least 10 sales, as follows:

#### Report

DIFF	SUBDIVNO	sold	N	Median	Mean
701	UNSOLD		3201	.9376	.9332
	SOLD		138	.9376	1.0026
702	UNSOLD		7578	1.0756	1.1736
	SOLD		250	1.1300	1.1933
703	UNSOLD		9683	1.1321	1.1056
	SOLD		205	1.1321	1.1266
704	UNSOLD		797	.6704	.7467
	SOLD		16	.6704	.6704
705	UNSOLD		658	.8333	.8217
	SOLD		8	.8333	.8333
706	UNSOLD		564	1.0355	1.0403
	SOLD		18	1.0355	1.0355
707	UNSOLD		1093	.6245	.6244
	SOLD		11	.6245	.6245
708	UNSOLD		652	1.0431	1.0644
	SOLD		7	1.0431	1.0429
712	UNSOLD		3543	1.0714	1.0091
	SOLD		29	1.0714	1.0120
715	UNSOLD		7077	.9231	.9287
	SOLD		183	.9231	.9264
716	UNSOLD		451	.4211	.5831
	SOLD		5	.4211	.3789
718	UNSOLD		833	1.0000	1.0000
	SOLD		12	1.0000	.9583
719	UNSOLD		709	2.0000	1.9984
	SOLD		10	2.0000	2.0000
720	UNSOLD		222	.6848	.8407
	SOLD		8	.8851	.8851

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

#### V. CONCLUSIONS

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

**STATISTICAL ABSTRACT**

**Residential**

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			
.986	.957	1.015	.992	.963	1.014	95.3%	.965	.937	.993	1.022	.153	20.4%

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.

**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			
1.014	.997	1.031	1.000	1.000	1.000	95.3%	.954	.931	.978	1.062	.209	27.1%

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



**Residential Median Ratio Stratification**

**Subclass**

**Case Processing Summary**

		Count	Percent
ABSTRIMP	1212.00	186	100.0%
Overall		186	100.0%
Excluded		0	
Total		186	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.992	1.022	.153	20.3%
Overall	.992	1.022	.153	20.3%

**Age**

**Case Processing Summary**

		Count	Percent
AgeRec	.00	1	0.5%
	Over 100	4	2.2%
	75 to 100	6	3.2%
	50 to 75	8	4.3%
	25 to 50	53	28.5%
	5 to 25	106	57.0%
	5 or Newer	8	4.3%
Overall		186	100.0%
Excluded		0	
Total		186	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	1.428	1.000	.000	.
Over 100	.796	1.054	.174	26.3%
75 to 100	.963	.996	.088	12.7%
50 to 75	1.004	.984	.191	21.8%
25 to 50	.982	1.035	.166	21.8%
5 to 25	.997	1.021	.140	19.3%
5 or Newer	.976	1.055	.158	22.5%
Overall	.992	1.022	.153	20.3%

## Improved Area

### Case Processing Summary

	Count	Percent
ImpSFRec		
LE 500 sf	3	1.6%
500 to 1,000 sf	29	15.6%
1,000 to 1,500 sf	33	17.7%
1,500 to 2,000 sf	41	22.0%
2,000 to 3,000 sf	46	24.7%
3,000 sf or Higher	34	18.3%
Overall	186	100.0%
Excluded	0	
Total	186	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	1.085	.900	.165	25.6%
500 to 1,000 sf	.936	1.057	.175	22.7%
1,000 to 1,500 sf	1.006	1.045	.194	23.9%
1,500 to 2,000 sf	.963	1.036	.160	21.7%
2,000 to 3,000 sf	.992	1.027	.123	17.7%
3,000 sf or Higher	1.022	1.015	.108	15.3%
Overall	.992	1.022	.153	20.3%

## Improvement Quality

### Case Processing Summary

	Count	Percent
QUALITY		
0 - Low	4	2.2%
1 - Fair	41	22.0%
2 - Average	123	66.1%
3 - Good	17	9.1%
Overall	186	100.0%
Excluded	0	
Total	186	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	1.428	1.000	.000	.
0 - Low	.928	1.003	.099	12.7%
1 - Fair	.948	1.042	.182	23.6%
2 - Average	.999	1.026	.146	19.7%
3 - Good	.997	1.014	.123	17.5%
Overall	.992	1.022	.153	20.3%

## Vacant Land Median Ratio Stratification

### Sale Price

#### Case Processing Summary

		Count	Percent
SPRec	LT \$25K	963	98.4%
	\$25K to \$50K	11	1.1%
	\$50K to \$100K	4	0.4%
	\$150K to \$200K	1	0.1%
Overall		979	100.0%
Excluded		0	
Total		979	

#### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	1.000	1.052	.209	27.4%
\$25K to \$50K	.925	.984	.191	26.3%
\$50K to \$100K	.675	1.018	.312	59.6%
\$150K to \$200K	1.000	1.000	.000	.
Overall	1.000	1.062	.209	27.5%

#### Sub-Class

#### Case Processing Summary

		Count	Percent
ABSTRLND	100.00	932	95.2%
	510.00	9	0.9%
	520.00	1	0.1%
	530.00	1	0.1%
	540.00	10	1.0%
	550.00	19	1.9%
	560.00	6	0.6%
	1135.00	1	0.1%
Overall		979	100.0%
Excluded		0	
Total		979	

#### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	1.000	1.068	.210	27.5%
510.00	1.000	1.049	.116	21.4%
520.00	.769	1.000	.000	.
530.00	1.133	1.000	.000	.
540.00	1.122	1.051	.240	29.8%
550.00	.998	1.049	.192	28.0%
560.00	1.001	1.012	.154	23.8%
1135.00	1.324	1.000	.000	.
Overall	1.000	1.062	.209	27.5%