



NEVADA DEPARTMENT OF TAXATION  
Division of Local Government Services

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# 2018-2019 REPORT OF ASSESSMENT RATIO STUDY

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Division of Local Government Services

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2018 - 2019

# Report of Assessment Ratio Study

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## 2018 - 2019 REPORT OF ASSESSMENT RATIO STUDY

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## 2018-2019 RATIO STUDY

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### INTRODUCTION: AUTHORITY, OVERSIGHT AND REPORTING

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NRS 361.333 requires the Department to determine the ratio of the assessed value of each type or class of property, for which the county assessor has the responsibility of assessing in each county, to the taxable value of that property as determined by the Department through appraisals of individual parcels. The ratio is in compliance with statute if the ratio of assessed value to taxable value is more than 32 percent or less than 36 percent. See NRS 361.333(5)(c).

Under NRS 361.333, the Nevada Tax Commission is obligated to equalize property under its jurisdiction. Equalization is the process by which the Commission ensures "that all property subject to taxation within the county has been assessed as required by law."<sup>1</sup>

There are two types of information the Commission considers to determine whether property has been assessed equitably. The first comes from a ratio study, which is a statistical analysis designed to study the level and uniformity of the assessments. The second type of information comes from a review to determine whether each county has adequate procedures to ensure that all property subject to taxation is being assessed in a correct and timely manner.

It is important to note that the statistical analysis required by NRS 361.333 is a quality control technique designed for mass appraisal. Mass appraisal, like single-property appraisal, is a "systematic method for arriving at estimates of value."<sup>2</sup> The difference between mass appraisal and single-property appraisal is only a matter of scope:

*Mass appraisal models have more terms because they attempt to replicate the market for one or more land uses across a wide geographic area. Single-property models, on the other hand, represent the market for one kind of land use in a limited area.*

*Quality is measured differently in mass appraisal and single-property appraisal. The quality of a single-property appraisal is measured against a small number of comparable properties that have sold. The quality of mass appraisals is measured with statistics developed from a sample of sales in the entire area appraised by the model.<sup>3</sup>*

Typically, mass appraisal techniques using valuation models for groups and classes of property are used by county assessors to determine taxable value. For example, mass appraisal techniques for land valuation are described in NAC 361.11795, and reference the use of base lot values as benchmarks for valuing properties within a stratum. In addition an assessor is required to use the IAAO "Standard on Automated Valuation Models" when developing mass appraisal models, pursuant to NAC 361.1216.

<sup>1</sup> NRS 361.333(4)(a) "The board of county commissioners and the county assessor, or their representatives, shall present evidence to the Nevada Tax Commission of the steps taken to ensure that all property subject to taxation within the county has been assessed as required by law." Compare this statutory requirement to the International Association of Assessing Officers definition of equalization: "The process by which an appropriate governmental body attempts to ensure that property under its jurisdiction is appraised equitably at market value or as otherwise required by law."

<sup>2</sup> Eckert, Joseph K., Ed., Property Appraisal and Assessment Administration (IAAO: Chicago, 1990), p. 35.

<sup>3</sup> Ibid.

NRS 361.333(2) permits the Department to conduct a ratio study on smaller groups of counties instead of the entire state in any one year. The ratio study is therefore conducted over a three year cycle. The counties reviewed for 2018-2019 are Clark, Esmeralda, Eureka, Lincoln, Mineral and Storey Counties.

If inequity or bias is discovered, NRS 361.333 provides the Nevada Tax Commission the authority to apply factors designed to correct inequitable conditions to classes of property or it may order reappraisal, the goal of which is to ensure that each of the classifications of real and personal property is assessed between 32% and 36% of taxable value. In addition, NRS 360.215 authorizes the Department of Taxation to assist county assessors in appraising property which the ratio study shows to be in need of reappraisal. The Department also consults on the development and maintenance of standard assessment procedures to ensure that property assessments are uniformly made.

## **RATIO STUDY DESIGN PARAMETERS AND STANDARDS FOR ANALYSIS**

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Generally speaking, a "ratio study" is "designed to evaluate appraisal performance by comparing the estimate of assessed value produced by the assessor on each parcel in the sample to the estimate of taxable value produced by the Department. The comparison is called a "ratio."

The appraisals conducted by the Department comprise a *sample* of the *universe or population* of all properties within the jurisdiction being reviewed. From the information about the *sample*, the Department *infers* what is happening to the population as a whole.

The Department examines the ratio information for *appraisal level* and *appraisal uniformity*. Appraisal level compares how close the assessor's estimate of assessed value is to the legally mandated standard of 35% of taxable value. Appraisal level is measured by a descriptive statistic called a *measure of central tendency*. A measure of central tendency, such as the mean, median, or aggregate ratio, is a single number or value that describes the center or the middle of a set of data. In the case of this ratio study, the median describes the middle of the array of all ratios comparing the assessed value to the taxable value established for each parcel.

*Assessment uniformity* refers to the degree to which different properties are assessed at equal percentages of taxable value. If taxable value could be described as the center of a "target," then assessment uniformity looks at how much dispersion or distance there is between each ratio and the "target." The statistical measure known as the coefficient of dispersion (COD) measures uniformity or the distance from the "target."

The ratio study, by law, must include the median ratio of the total property within each subject county and each class of property. The study must also include two comparative statistics known as the overall ratio (also known as the aggregate ratio or weighted mean ratio) and the coefficient of dispersion (COD) of the median, for both the total property in each subject county and for each major class of property within the county. NRS 361.333 (5)(c) defines the major classes of property as:

- I. Vacant land;
- II. Single-family residential;
- III. Multi-residential;
- IV. Commercial and industrial; and
- V. Rural

In addition, the statistics are calculated specifically for improvements, land, and total property values.

The median is a statistic describing the measure of central tendency of the sample. It is the middle ratio when all the ratios are arrayed in order of magnitude, and divides the sample into two equal parts. The median is the most widely used measure of central tendency by equalization agencies because it is less affected by extreme ratios or "outliers," and is therefore the preferred measure for monitoring appraisal performance or evaluating the need for a reappraisal.<sup>4</sup> NRS 361.333(5)(c) states that under- or- over assessment may exist if the median of the ratios falls in a range less than 32% or more than 36%.

The Department calculates the overall or aggregate ratio by dividing the total assessed value of all the observations (parcels) in the sample by the total taxable value of all the observations (parcels) in the sample. This produces a ratio weighted by dollar value. Because of the weight given to each dollar of value, parcels with higher values exert more influence than parcels with lower values. The aggregate ratio helps identify under or over assessment of higher valued property. For instance, an unusually high aggregate ratio might indicate that higher valued property is over assessed, or valued at a rate higher than other property. The statutory and regulatory framework does not dictate any range of acceptability for the aggregate ratio.

The COD is a measure of dispersion relating to the uniformity of the ratios and is calculated for all property, and each class of property, within the subject jurisdiction. The COD measures the deviation of the individual ratios from the median ratio as a percentage of the median and is calculated by (1) subtracting the median from each ratio; (2) taking the absolute value of the calculated differences; (3) summing the absolute differences; (4) dividing by the number of ratios to obtain the "average absolute deviation;" and (5) dividing by the median. The COD has "the desirable feature that its interpretation does not depend on the assumption that the ratios are normally distributed."<sup>5</sup> The COD is a relative measure and useful for comparing samples from different classes of property within, as well as among, counties.

In 2010, the Nevada Tax Commission adopted NAC 361.1216. The regulation adopted the Standard on Automated Valuation Models, September 2003 edition published by the International Association of Assessing Officers. The Standard on Automated Valuation Models, Section 8.4.2.1, discusses the coefficient of dispersion and Table 2 references Ratio Study Performance Standards with regard to the COD. The IAAO Standard on Ratio Studies states that "the smaller the measure, the better the uniformity, but extremely low measures can signal acceptable causes such as extremely homogeneous properties or very stable markets; or unacceptable causes such as lack of quality control, calculation errors, poor sample representativeness or sales chasing. Note that as market activity changes or as the complexity of properties increases, the measures of variability usually increase, even though appraisal procedures may be equally valid."<sup>6</sup>

The IAAO recommended ratio study performance standards are as follows:

| <u>Type of Property</u>          | <u>COD</u>  |
|----------------------------------|-------------|
| <b>Single-family Residential</b> |             |
| Newer, more homogenous areas     | 5.0 to 10.0 |
| Older, heterogeneous areas       | 5.0 to 15.0 |
| Rural residential and seasonal   | 5.0 to 20.0 |

<sup>4</sup> International Association of Assessing Officers, Standard on Ratio Studies, (2010), p.12; 27.

<sup>5</sup> International Association of Assessing Officers, Standard on Ratio Studies, (2010), p. 13.

<sup>6</sup> International Association of Assessing Officers, Standard on Ratio Studies, (2013), p. 17.

| <u>Type of Property</u>                 | <u>COD</u>                                |
|---|---|
| <b>Income-producing properties</b>      |   |
| Larger, urban jurisdictions             | 5.0 to 15.0                               |
| Smaller, rural jurisdictions            | 5.0 to 20.0                               |
| <b>Vacant land</b>                      | 5.0 to 25.0                               |
| <b>Other real and personal property</b> | Varies with local conditions <sup>7</sup> |

## **RATIO STUDY CONCLUSIONS**

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The 2018-2019 Ratio Study presentation includes the comparison of the median and aggregate ratios and the COD of all 17 counties required by NRS 361.333(1)(b)(1). These charts show the aggregate and median ratios and the coefficient of dispersion for the past three study years (2016 - 2018) across all counties for all properties.

Similar data is shown just for the counties in the 2018-2019 study year. Here the aggregate and median ratios, the COD, and the median related differential (MRD) are compared across types of property in the six counties. Data for each individual county is displayed for each type of property across all appraisal areas within the county, not just the reappraisal area.

### **Median Related Differential**

The median related differential is a statistic that tends to indicate regressivity when it is above 1.03 and progressivity when it is below .98. It is an indication of whether high-value properties are appraised higher or lower than low-value properties. The standard is not an absolute when samples are small or when wide variations in prices exist. In that case, other statistical tests may be more useful. *This particular test is not required by statute.*

The chart on page 12 indicates that of the six counties studied in 2018 - 2019, progressivity is present for Improvements and Commercial/Industrial properties in Mineral and Storey Counties and Vacant Land and Multi-Family properties in Mineral County. Conversely, regressivity is present for Improvements, Single Family, and Commercial/Industrial properties in Esmeralda County and Improved Land properties in Lincoln County. Other counties where progressivity or regressivity occurred in prior years are also listed on page 10. The Department recommends reviewing stratifications of property and neighborhoods to ensure sufficient sales data is available, or use alternate methods of land valuation.

### **Aggregate Ratio**

The data for the Aggregate (overall) Ratio, or weighted mean, shown on page 11 are within the acceptable standard range of 32% to 36% on a composite basis for the six counties studied in 2018 – 2019, with the following exceptions noted: Storey County Improvements at 39.7%; Lincoln County Improved Land at 31.7%; Mineral County Vacant Land at 57.7%; Esmeralda County Single Family properties at 31.9%; and Storey County Commercial/Industrial properties at 39.4%. Additionally, the Aggregate Ratio for all counties produce a total ratio of 36.4%, as a result of individual ratios within Mineral and Storey counties that were above the acceptable standard range.

<sup>7</sup> International Association of Assessing Officers, Standard on Ratio Studies, (2013), p. 17; and Standard on Automated Valuation Models (2003), p. 28.

## **Median Ratio**

The Median Ratios of assessed value to taxable value generally indicate over-or-undervaluation of those types of property taken as a whole within the entire appraisal jurisdiction. Median Ratios may be acceptable, yet inequity could still exist in pocket areas. However, this study makes these inferences for property groups as a whole within the jurisdiction, without regard to individual market areas. As noted above, for purposes of monitoring appraisal performance and for direct equalization, the median ratio is the preferred measure of central tendency.

The Median Ratios shown on page 11 indicate the appraisal level for all classes of property in each county included in this study are within the acceptable standard range of 32% and 36% using the results of the sample taken by the Department. The land, improvement, and the property class ratios of the assessed value established by each county assessor, measured against the taxable value established by the Department, are within statutory limits, with the following exceptions noted: Mineral County Improvements and Multi-Family properties each at 31.1%, and Commercial/Industrial properties at 31.2%.

## **Coefficient of Dispersion**

The COD ratios, shown on page 12, for the six counties studied in 2018 – 2019, indicate the ratios for all property, and each class of property, within the jurisdictions are relatively uniform with the exception of Mineral County. The COD ratios reported are typically at the low end or below the IAAO range standards. The standards are more appropriate for comparison in market-based assessment systems than in Nevada's unique hybrid system.

## **PROCEDURAL / OFFICE REVIEW**

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NRS 361.333 (1)(b)(2) requires the Department to make a determination about whether each county has adequate procedures to ensure that all property subject to taxation is being assessed in a correct and timely manner, and to note any deficiencies. For the 2018-19 Ratio Study, the Department reviewed assessors' procedures as part of the ratio study process.

## **LAND AND IMPROVEMENT FACTORS**

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Pursuant to NRS 361.260(5), the Department reviews assessments in areas where improvement factors are applied. All counties report that land is annually reappraised, making the land factor no longer applicable. Improvement Factors for the 2018- 2019 tax year are available on the Taxation website at <https://tax.nv.gov/>.



2018-2019

REPORT OF ASSESSMENT RATIO STUDY

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STATISTICAL TABLES

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NEVADA DEPARTMENT OF TAXATION  
2018-2019 RATIO STUDY  
AGGREGATE RATIOS

| SUBJECT COUNTY | STUDY YEAR  | ALL PROPERTY | IMPROVEMENTS | IMPROVED LAND | VACANT LAND | SINGLE FAMILY RESIDENCE | MULTI-FAMILY RESIDENCE | COMMERCIAL INDUSTRIAL | RURAL LAND & IMPROVEMENTS |
|----------------|-------------|--------------|--------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|
| CARSON CITY    | 2017        | 34.1         | 34.6         | 33.8          | 32.5        | 34.1                    | 34.4                   | 34.5                  | 33.7                      |
| CHURCHILL      | 2017        | 34.6         | 34.8         | 34.6          | 29.9        | 34.2                    | 34.9                   | 35.2                  | 35.0                      |
| CLARK          | 2018        | 34.0         | 34.1         | 34.0          | 34.1        | 33.9                    | 34.5                   | 34.0                  | 35.0                      |
| DOUGLAS        | 2016        | 34.7         | 35.0         | 34.2          | 34.2        | 34.5                    | 35.0                   | 34.9                  | 35.0                      |
| ELKO           | 2017        | 33.4         | 33.6         | 34.1          | 34.9        | 34.3                    | 34.1                   | 33.0                  | 35.0                      |
| ESMERALDA      | 2018        | 33.0         | 32.1         | 35.0          | 35.0        | 31.9                    | 34.1                   | 32.1                  | 35.0                      |
| EUREKA         | 2018        | 33.6         | 33.5         | 34.1          | 34.1        | 33.6                    | 33.3                   | 33.8                  | 35.0                      |
| HUMBOLDT       | 2016        | 33.7         | 33.3         | 34.9          | 33.8        | 33.8                    | 34.3                   | 33.2                  | 35.0                      |
| LANDER         | 2017        | 34.3         | 34.2         | 34.7          | 34.4        | 34.4                    | 34.3                   | 34.2                  | 33.3                      |
| LINCOLN        | 2018        | 33.7         | 34.2         | 31.7          | 34.2        | 32.9                    | 34.1                   | 34.4                  | 35.0                      |
| LYON           | 2016        | 33.1         | 32.6         | 34.7          | 33.6        | 33.2                    | 34.2                   | 32.1                  | 35.0                      |
| MINERAL        | 2018        | 36.1         | 34.7         | 34.7          | 57.7        | 34.3                    | 33.9                   | 35.2                  | 35.0                      |
| NYE            | 2016        | 33.3         | 33.2         | 34.3          | 34.0        | 34.2                    | 33.3                   | 32.7                  | 35.0                      |
| PERSHING       | 2017        | 34.5         | 33.9         | 36.4          | 36.1        | 34.6                    | 34.3                   | 34.3                  | 35.0                      |
| STOREY         | 2018        | 39.2         | 39.7         | 35.6          | 34.9        | 34.2                    | 35.2                   | 39.4                  | 35.0                      |
| WASHOE         | 2016        | 34.6         | 34.8         | 34.2          | 34.1        | 34.3                    | 34.8                   | 34.9                  | 35.0                      |
| WHITE PINE     | 2017        | 34.3         | 34.6         | 33.5          | 34.2        | 34.5                    | 34.4                   | 34.2                  | 34.4                      |
| STATEWIDE      | <b>2018</b> | 35.3         | 35.8         | 34.3          | 33.9        | 34.1                    | 34.5                   | 36.0                  | 34.4                      |

NEVADA DEPARTMENT OF TAXATION  
2018-2019 RATIO STUDY  
MEDIAN RATIOS

| SUBJECT COUNTY | STUDY YEAR | ALL PROPERTY | IMPROVEMENTS | IMPROVED LAND | VACANT LAND | SINGLE FAMILY RESIDENCE | MULTI-FAMILY RESIDENCE | COMMERCIAL INDUSTRIAL | RURAL LAND & IMPROVEMENTS |
|----------------|------------|--------------|--------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|
| CARSON CITY    | 2017       | 34.0         | 34.0         | 34.2          | 33.8        | 34.0                    | 34.1                   | 34.1                  | 33.2                      |
| CHURCHILL      | 2017       | 34.7         | 34.9         | 34.6          | 33.5        | 34.6                    | 34.9                   | 34.8                  | 35.0                      |
| CLARK          | 2018       | 34.5         | 34.2         | 34.8          | 34.7        | 34.1                    | 34.5                   | 34.0                  | 35.0                      |
| DOUGLAS        | 2016       | 34.9         | 35.0         | 34.8          | 34.4        | 34.6                    | 35.1                   | 34.8                  | 35.0                      |
| ELKO           | 2017       | 34.2         | 34.0         | 34.9          | 34.1        | 34.3                    | 34.7                   | 33.4                  | 35.0                      |
| ESMERALDA      | 2018       | 34.8         | 33.7         | 35.0          | 35.0        | 34.2                    | 34.0                   | 33.8                  | 35.0                      |
| EUREKA         | 2018       | 34.1         | 33.6         | 34.4          | 34.2        | 33.9                    | 33.7                   | 33.7                  | 35.0                      |
| HUMBOLDT       | 2016       | 34.2         | 33.5         | 34.6          | 34.0        | 34.0                    | 34.5                   | 33.9                  | 35.0                      |
| LANDER         | 2017       | 34.7         | 34.4         | 35.0          | 35.0        | 34.2                    | 34.7                   | 34.7                  | 35.0                      |
| LINCOLN        | 2018       | 34.4         | 33.8         | 35.0          | 34.4        | 34.4                    | 34.0                   | 34.2                  | 35.0                      |
| LYON           | 2016       | 34.2         | 33.5         | 35.0          | 35.2        | 33.6                    | 34.4                   | 33.0                  | 35.0                      |
| MINERAL        | 2018       | 34.3         | 31.1         | 35.4          | 34.5        | 34.3                    | 31.1                   | 31.2                  | 34.9                      |
| NYE            | 2016       | 34.1         | 33.9         | 34.7          | 34.2        | 34.4                    | 33.6                   | 32.6                  | 35.0                      |
| PERSHING       | 2017       | 34.9         | 33.4         | 35.1          | 35.0        | 34.5                    | 33.4                   | 35.8                  | 35.0                      |
| STOREY         | 2018       | 34.8         | 34.5         | 35.0          | 34.8        | 34.1                    | 34.6                   | 34.5                  | 35.0                      |
| WASHOE         | 2016       | 34.4         | 34.5         | 34.7          | 34.2        | 34.4                    | 34.2                   | 34.4                  | 35.0                      |
| WHITE PINE     | 2017       | 34.1         | 34.4         | 33.6          | 33.6        | 34.4                    | 34.6                   | 33.8                  | 35.0                      |
| STATEWIDE      | 2018       | 34.5         | 34.2         | 34.8          | 34.6        | 34.3                    | 34.3                   | 34.1                  | 35.0                      |

NEVADA DEPARTMENT OF TAXATION  
2018-2019 RATIO STUDY  
COEFFICIENTS OF DISPERSION

| SUBJECT COUNTY | STUDY YEAR | ALL PROPERTY | IMPROVEMENTS | IMPROVED LAND | VACANT LAND | SINGLE FAMILY RESIDENCE | MULTI-FAMILY RESIDENCE | COMMERCIAL INDUSTRIAL | RURAL LAND & IMPROVEMENTS |
|----------------|------------|--------------|--------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|
| CARSON CITY    | 2017       | 3.6          | 5.9          | 3.8           | 5.7         | 1.8                     | 2.2                    | 5.5                   | 1.4                       |
| CHURCHILL      | 2017       | 3.1          | 2.2          | 2.6           | 5.7         | 2.0                     | 1.5                    | 3.0                   | 0.0                       |
| CLARK          | 2018       | 2.4          | 3.4          | 2.7           | 2.2         | 2.4                     | 2.3                    | 2.6                   | 0.0                       |
| DOUGLAS        | 2016       | 1.3          | 0.1          | 2.9           | 2.7         | 1.1                     | 0.2                    | 1.3                   | 0.0                       |
| ELKO           | 2017       | 2.6          | 2.7          | 2.0           | 3.4         | 2.0                     | 2.0                    | 2.5                   | 0.1                       |
| ESMERALDA      | 2018       | 2.1          | 3.1          | 0.3           | 0.3         | 3.7                     | 1.3                    | 2.5                   | -                         |
| EUREKA         | 2018       | 2.4          | 3.6          | 2.4           | 1.8         | 3.2                     | 2.1                    | 2.0                   | -                         |
| HUMBOLDT       | 2016       | 2.6          | 3.3          | 3.3           | 1.8         | 2.2                     | 2.0                    | 4.4                   | 0.0                       |
| LANDER         | 2017       | 2.8          | 3.8          | 1.9           | 2.9         | 3.1                     | 2.0                    | 2.7                   | 1.2                       |
| LINCOLN        | 2018       | 3.0          | 5.3          | 2.5           | 1.7         | 4.6                     | 4.2                    | 2.5                   | 0.1                       |
| LYON           | 2016       | 5.7          | 7.5          | 2.3           | 9.0         | 6.5                     | 1.4                    | 5.1                   | 0.1                       |
| MINERAL        | 2018       | 17.8         | 34.0         | 16.1          | 29.9        | 13.7                    | 21.1                   | 13.0                  | 0.1                       |
| NYE            | 2016       | 2.7          | 3.3          | 2.5           | 2.9         | 1.9                     | 2.0                    | 2.3                   | 0.8                       |
| PERSHING       | 2017       | 4.1          | 5.4          | 8.7           | 2.4         | 3.2                     | 5.2                    | 6.0                   | 0.1                       |
| STOREY         | 2018       | 2.9          | 3.7          | 4.0           | 1.7         | 2.9                     | 4.5                    | 5.8                   | 0.0                       |
| WASHOE         | 2016       | 1.7          | 2.5          | 1.7           | 1.7         | 1.6                     | 1.6                    | 1.9                   | 0.0                       |
| WHITE PINE     | 2017       | 3.8          | 4.5          | 2.9           | 3.4         | 4.0                     | 2.1                    | 4.4                   | 3.3                       |
| STATEWIDE      | 2018       | 3.7          | 5.1          | 3.7           | 4.4         | 3.3                     | 3.1                    | 4.4                   | 0.6                       |

NEVADA DEPARTMENT OF TAXATION  
2018-2019 RATIO STUDY  
MEDIAN RELATED DIFFERENTIALS

| SUBJECT COUNTY | STUDY YEAR | ALL PROPERTY | IMPROVEMENTS | IMPROVED LAND | VACANT LAND | SINGLE FAMILY RESIDENCE | MULTI-FAMILY RESIDENCE | COMMERCIAL INDUSTRIAL | RURAL LAND & IMPROVEMENTS |
|----------------|------------|--------------|--------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|
| CARSON CITY    | 2017       | 1.00         | 0.98         | 1.01          | 1.04        | 1.00                    | 0.99                   | 0.99                  | 0.98                      |
| CHURCHILL      | 2017       | 1.00         | 1.01         | 1.00          | 1.12        | 1.01                    | 1.00                   | 0.99                  | 1.00                      |
| CLARK          | 2018       | 1.01         | 1.00         | 1.02          | 1.02        | 1.01                    | 1.00                   | 1.00                  | 1.00                      |
| DOUGLAS        | 2016       | 1.01         | 1.00         | 1.02          | 1.00        | 1.00                    | 1.00                   | 1.00                  | 1.00                      |
| ELKO           | 2017       | 1.02         | 1.01         | 1.02          | 0.98        | 1.00                    | 1.02                   | 1.01                  | 1.00                      |
| ESMERALDA      | 2018       | 1.05         | 1.05         | 1.00          | 1.00        | 1.07                    | 1.00                   | 1.05                  | 1.00                      |
| EUREKA         | 2018       | 1.01         | 1.00         | 1.01          | 1.01        | 1.01                    | 1.01                   | 1.00                  | 1.00                      |
| HUMBOLDT       | 2016       | 1.01         | 1.00         | 0.99          | 1.01        | 1.00                    | 1.01                   | 1.02                  | 1.00                      |
| LANDER         | 2017       | 1.01         | 1.00         | 1.01          | 1.02        | 0.99                    | 1.01                   | 1.01                  | 1.05                      |
| LINCOLN        | 2018       | 1.02         | 0.99         | 1.10          | 1.00        | 1.05                    | 1.00                   | 0.99                  | 1.00                      |
| LYON           | 2016       | 1.03         | 1.03         | 1.01          | 1.05        | 1.01                    | 1.01                   | 1.03                  | 1.00                      |
| MINERAL        | 2018       | 0.95         | 0.90         | 1.02          | 0.60        | 1.00                    | 0.92                   | 0.89                  | 1.00                      |
| NYE            | 2016       | 1.02         | 1.02         | 1.01          | 1.01        | 1.01                    | 1.01                   | 1.00                  | 1.00                      |
| PERSHING       | 2017       | 1.01         | 0.99         | 0.96          | 0.97        | 1.00                    | 0.97                   | 1.04                  | 1.00                      |
| STOREY         | 2018       | 0.89         | 0.87         | 0.98          | 1.00        | 1.00                    | 0.98                   | 0.88                  | 1.00                      |
| WASHOE         | 2016       | 0.99         | 0.99         | 1.02          | 1.00        | 1.00                    | 0.98                   | 0.99                  | 1.00                      |
| WHITE PINE     | 2017       | 0.99         | 1.00         | 1.00          | 0.98        | 1.00                    | 1.00                   | 0.99                  | 1.02                      |
| STATEWIDE      | 2018       | 0.98         | 0.96         | 1.02          | 1.02        | 1.00                    | 1.00                   | 0.95                  | 1.02                      |

NEVADA DEPARTMENT OF TAXATION  
2018-2019 RATIO STUDY  
ALL APPRAISAL AREAS

OVERALL (AGGREGATE) RATIO

| Subject County | All Property |
|----------------|--------------|
| CLARK          | 34.0         |
| ESMERALDA      | 33.0         |
| EUREKA         | 33.6         |
| LINCOLN        | 33.7         |
| MINERAL        | 36.1         |
| STOREY         | 39.2         |
| ALL COUNTIES   | 36.4         |

| Class of Property |               |             |                         |                        |                       |                           |  |
|-------------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|--|
| Improvements      | Improved Land | Vacant Land | Single Family Residence | Multi-Family Residence | Commercial Industrial | Rural Land & Improvements |  |
| 34.1              | 34.0          | 34.1        | 33.9                    | 34.5                   | 34.0                  | 35.0                      |  |
| 32.1              | 35.0          | 35.0        | 31.9                    | 34.1                   | 32.1                  | 35.0                      |  |
| 33.5              | 34.1          | 34.1        | 33.6                    | 33.3                   | 33.8                  | 35.0                      |  |
| 34.2              | 31.7          | 34.2        | 32.9                    | 34.1                   | 34.4                  | 35.0                      |  |
| 34.7              | 34.7          | 57.7        | 34.3                    | 33.9                   | 35.2                  | 35.0                      |  |
| 39.7              | 35.6          | 34.9        | 34.2                    | 35.2                   | 39.4                  | 35.0                      |  |
| 37.0              | 34.4          | 34.6        | 33.8                    | 34.5                   | 37.1                  | 35.0                      |  |

MEDIAN RATIO

| Subject County | All Property |
|----------------|--------------|
| CLARK          | 34.5         |
| ESMERALDA      | 34.8         |
| EUREKA         | 34.1         |
| LINCOLN        | 34.4         |
| MINERAL        | 34.3         |
| STOREY         | 34.8         |
| ALL COUNTIES   | 34.5         |

| Class of Property |               |             |                         |                        |                       |                           |  |
|-------------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|--|
| Improvements      | Improved Land | Vacant Land | Single Family Residence | Multi-Family Residence | Commercial Industrial | Rural Land & Improvements |  |
| 34.2              | 34.8          | 34.7        | 34.1                    | 34.5                   | 34.0                  | 35.0                      |  |
| 33.7              | 35.0          | 35.0        | 34.2                    | 34.0                   | 33.8                  | 35.0                      |  |
| 33.6              | 34.4          | 34.2        | 33.9                    | 33.7                   | 33.7                  | 35.0                      |  |
| 33.8              | 35.0          | 34.4        | 34.4                    | 34.0                   | 34.2                  | 35.0                      |  |
| 31.1              | 35.4          | 34.5        | 34.3                    | 31.1                   | 31.2                  | 34.9                      |  |
| 34.5              | 35.0          | 34.8        | 34.1                    | 34.6                   | 34.5                  | 35.0                      |  |
| 34.0              | 35.0          | 34.8        | 34.1                    | 34.2                   | 33.8                  | 35.0                      |  |

NEVADA DEPARTMENT OF TAXATION  
 2018-2019 RATIO STUDY  
 ALL APPRAISAL AREAS  
 COEFFICIENT OF DISPERSION (COD)

| Subject County | All Property |
|----------------|--------------|
| CLARK          | 2.4          |
| ESMERALDA      | 2.1          |
| EUREKA         | 2.4          |
| LINCOLN        | 3.0          |
| MINERAL        | 17.8         |
| STOREY         | 2.9          |
| ALL COUNTIES   | 4.6          |

| Class of Property |               |             |                         |                        |                       |                           |  |
|-------------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|--|
| Improvements      | Improved Land | Vacant Land | Single Family Residence | Multi-Family Residence | Commercial Industrial | Rural Land & Improvements |  |
| 3.4               | 2.7           | 2.2         | 2.4                     | 2.3                    | 2.6                   | 0.0                       |  |
| 3.1               | 0.3           | 0.3         | 3.7                     | 1.3                    | 2.5                   | -                         |  |
| 3.6               | 2.4           | 1.8         | 3.2                     | 2.1                    | 2.0                   | -                         |  |
| 5.3               | 2.5           | 1.7         | 4.6                     | 4.2                    | 2.5                   | 0.1                       |  |
| 34.0              | 16.1          | 29.9        | 13.7                    | 21.1                   | 13.0                  | 0.1                       |  |
| 3.7               | 4.0           | 1.7         | 2.9                     | 4.5                    | 5.8                   | 0.0                       |  |
| 7.6               | 4.4           | 5.0         | 5.0                     | 4.7                    | 4.3                   | 0.1                       |  |

MEDIAN RELATED DIFFERENTIAL

| Subject County | All Property |
|----------------|--------------|
| CLARK          | 1.01         |
| ESMERALDA      | 1.05         |
| EUREKA         | 1.01         |
| LINCOLN        | 1.02         |
| MINERAL        | 0.95         |
| STOREY         | 0.89         |
| ALL COUNTIES   | 0.95         |

| Class of Property |               |             |                         |                        |                       |                           |  |
|-------------------|---------------|-------------|-------------------------|------------------------|-----------------------|---------------------------|--|
| Improvements      | Improved Land | Vacant Land | Single Family Residence | Multi-Family Residence | Commercial Industrial | Rural Land & Improvements |  |
| 1.00              | 1.02          | 1.02        | 1.01                    | 1.00                   | 1.00                  | 1.00                      |  |
| 1.05              | 1.00          | 1.00        | 1.07                    | 1.00                   | 1.05                  | 1.00                      |  |
| 1.00              | 1.01          | 1.01        | 1.01                    | 1.01                   | 1.00                  | 1.00                      |  |
| 0.99              | 1.10          | 1.00        | 1.05                    | 1.00                   | 0.99                  | 1.00                      |  |
| 0.90              | 1.02          | 0.60        | 1.00                    | 0.92                   | 0.89                  | 1.00                      |  |
| 0.87              | 0.98          | 1.00        | 1.00                    | 0.98                   | 0.88                  | 1.00                      |  |
| 0.92              | 1.02          | 1.01        | 1.01                    | 0.99                   | 0.91                  | 1.00                      |  |

**CLARK COUNTY**  
**2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 34.0%                      | 34.5%                   | 2.4%                  | 131                    |
| COUNTYWIDE IMPROVEMENTS              | 34.1%                      | 34.2%                   | 3.4%                  | 93                     |
| COUNTYWIDE IMPROVED LAND             | 34.0%                      | 34.8%                   | 2.7%                  | 99                     |
| COUNTYWIDE VACANT LAND               | 34.1%                      | 34.7%                   | 2.2%                  | 32                     |
| SINGLE FAMILY IMPROVEMENTS           | 33.9%                      | 34.1%                   | 3.5%                  | 32                     |
| SINGLE FAMILY LAND                   | 34.0%                      | 34.5%                   | 2.2%                  | 32                     |
| SINGLE FAMILY TOTAL PROPERTY         | 33.9%                      | 34.1%                   | 2.4%                  | 32                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 34.6%                      | 34.4%                   | 3.4%                  | 30                     |
| MULTIPLE FAMILY LAND                 | 34.3%                      | 35.0%                   | 2.8%                  | 30                     |
| MULTIPLE FAMILY TOTAL PROPERTY       | 34.5%                      | 34.5%                   | 2.3%                  | 30                     |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 34.0%                      | 34.2%                   | 3.2%                  | 30                     |
| COMMERCIAL/INDUSTRIAL LAND           | 33.9%                      | 34.9%                   | 3.2%                  | 30                     |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 34.0%                      | 34.0%                   | 2.6%                  | 30                     |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | n/a                    |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.0%                  | 7                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.0%                  | 7                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | n/a                        | n/a                     | n/a                   | -                      |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | n/a                        | n/a                     | n/a                   | -                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | n/a                        | n/a                     | n/a                   | -                      |
| MOBILE HOMES                         | n/a                        | n/a                     | n/a                   | -                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.0%                  | 44                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.1%                  | 10                     |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.0%                  | 5                      |
| BILLBOARDS                           | 35.0%                      | 35.0%                   | 0.0%                  | 8                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.0%                  | 8                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.0%                  | 13                     |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.0%</b>           | <b>44</b>              |



**ESMERALDA COUNTY  
2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 33.0%                      | 34.8%                   | 2.1%                  | 54                     |
| COUNTYWIDE IMPROVEMENTS              | 32.1%                      | 33.7%                   | 3.1%                  | 30                     |
| COUNTYWIDE IMPROVED LAND             | 35.0%                      | 35.0%                   | 0.3%                  | 34                     |
| COUNTYWIDE VACANT LAND               | 35.0%                      | 35.0%                   | 0.3%                  | 18                     |
| SINGLE FAMILY IMPROVEMENTS           | 30.9%                      | 33.6%                   | 4.4%                  | 11                     |
| SINGLE FAMILY LAND                   | 35.0%                      | 35.0%                   | 0.3%                  | 11                     |
| SINGLE FAMILY TOTAL PROPERTY         | 31.9%                      | 34.2%                   | 3.7%                  | 12                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 33.8%                      | 33.8%                   | 1.8%                  | 9                      |
| MULTIPLE FAMILY LAND                 | 35.0%                      | 35.0%                   | 0.2%                  | 9                      |
| MULTIPLE FAMILY TOTAL PROPERTY       | 34.1%                      | 34.0%                   | 1.3%                  | 9                      |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 31.7%                      | 33.8%                   | 3.0%                  | 9                      |
| COMMERCIAL/INDUSTRIAL LAND           | 34.9%                      | 34.8%                   | 0.5%                  | 8                      |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 32.1%                      | 33.8%                   | 2.5%                  | 9                      |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 35.0%                      | 35.0%                   | 0.3%                  | 17                     |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.2%                  | 4                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.1%                      | 35.2%                   | 0.4%                  | 5                      |
| MOBILE HOMES                         | 34.9%                      | 35.0%                   | 0.2%                  | 8                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.3%                  | 19                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 3                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.3%                  | 3                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.6%                  | 5                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.2%                  | 8                      |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.3%</b>           | <b>36</b>              |

**EUREKA COUNTY**  
**2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 33.6%                      | 34.1%                   | 2.4%                  | 50                     |
| COUNTYWIDE IMPROVEMENTS              | 33.5%                      | 33.6%                   | 3.6%                  | 26                     |
| COUNTYWIDE IMPROVED LAND             | 34.1%                      | 34.4%                   | 2.4%                  | 34                     |
| COUNTYWIDE VACANT LAND               | 34.1%                      | 34.2%                   | 1.8%                  | 16                     |
| SINGLE FAMILY IMPROVEMENTS           | 33.4%                      | 33.7%                   | 4.1%                  | 12                     |
| SINGLE FAMILY LAND                   | 34.4%                      | 34.2%                   | 2.1%                  | 12                     |
| SINGLE FAMILY TOTAL PROPERTY         | 33.6%                      | 33.9%                   | 3.2%                  | 12                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 33.1%                      | 33.6%                   | 3.4%                  | 7                      |
| MULTIPLE FAMILY LAND                 | 34.3%                      | 34.4%                   | 2.2%                  | 7                      |
| MULTIPLE FAMILY TOTAL PROPERTY       | 33.3%                      | 33.7%                   | 2.1%                  | 7                      |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 33.8%                      | 33.2%                   | 2.6%                  | 7                      |
| COMMERCIAL/INDUSTRIAL LAND           | 33.6%                      | 34.1%                   | 3.0%                  | 9                      |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 33.8%                      | 33.7%                   | 2.0%                  | 9                      |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 35.0%                      | 35.0%                   | 1.2%                  | 19                     |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.2%                  | 5                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.3%                      | 35.6%                   | 2.2%                  | 6                      |
| MOBILE HOMES                         | 34.8%                      | 34.8%                   | 0.4%                  | 8                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.6%                      | 35.0%                   | 0.4%                  | 15                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 1                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.0%                  | 3                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 36.5%                      | 35.1%                   | 1.1%                  | 5                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.1%                  | 6                      |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.3%</b>               | <b>35.0%</b>            | <b>0.8%</b>           | <b>34</b>              |

**LINCOLN COUNTY**  
**2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 33.7%                      | 34.4%                   | 3.0%                  | 50                     |
| COUNTYWIDE IMPROVEMENTS              | 34.2%                      | 33.8%                   | 5.3%                  | 28                     |
| COUNTYWIDE IMPROVED LAND             | 31.7%                      | 35.0%                   | 2.5%                  | 34                     |
| COUNTYWIDE VACANT LAND               | 34.2%                      | 34.4%                   | 1.7%                  | 15                     |
| SINGLE FAMILY IMPROVEMENTS           | 34.3%                      | 34.2%                   | 3.1%                  | 15                     |
| SINGLE FAMILY LAND                   | 28.8%                      | 35.0%                   | 4.9%                  | 14                     |
| SINGLE FAMILY TOTAL PROPERTY         | 32.9%                      | 34.4%                   | 4.6%                  | 15                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 33.8%                      | 32.4%                   | 12.0%                 | 6                      |
| MULTIPLE FAMILY LAND                 | 34.8%                      | 34.8%                   | 0.8%                  | 6                      |
| MULTIPLE FAMILY TOTAL PROPERTY       | 34.1%                      | 34.0%                   | 4.2%                  | 6                      |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 34.3%                      | 33.6%                   | 3.9%                  | 7                      |
| COMMERCIAL/INDUSTRIAL LAND           | 34.9%                      | 34.9%                   | 1.2%                  | 8                      |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 34.4%                      | 34.2%                   | 2.5%                  | 8                      |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.1%                  | 6                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.1%                  | 6                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 35.0%                      | 35.0%                   | 0.4%                  | 14                     |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.2%                  | 4                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.1%                  | 4                      |
| MOBILE HOMES                         | 34.8%                      | 35.0%                   | 0.6%                  | 6                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.1%                  | 15                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 3                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.0%                  | 2                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.1%                  | 4                      |
| MOBILE HOMES                         | 34.8%                      | 34.9%                   | 0.3%                  | 6                      |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.2%</b>           | <b>29</b>              |

**MINERAL COUNTY  
2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 36.1%                      | 34.3%                   | 17.8%                 | 51                     |
| COUNTYWIDE IMPROVEMENTS              | 34.7%                      | 31.1%                   | 34.0%                 | 32                     |
| COUNTYWIDE IMPROVED LAND             | 34.7%                      | 35.4%                   | 16.1%                 | 38                     |
| COUNTYWIDE VACANT LAND               | 57.7%                      | 34.5%                   | 29.9%                 | 13                     |
| SINGLE FAMILY IMPROVEMENTS           | 33.5%                      | 33.9%                   | 24.3%                 | 17                     |
| SINGLE FAMILY LAND                   | 35.4%                      | 36.5%                   | 17.1%                 | 17                     |
| SINGLE FAMILY TOTAL PROPERTY         | 34.3%                      | 34.3%                   | 13.7%                 | 17                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 33.0%                      | 29.8%                   | 71.2%                 | 7                      |
| MULTIPLE FAMILY LAND                 | 36.1%                      | 37.0%                   | 12.7%                 | 7                      |
| MULTIPLE FAMILY TOTAL PROPERTY       | 33.9%                      | 31.1%                   | 21.1%                 | 7                      |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 35.7%                      | 30.2%                   | 15.5%                 | 8                      |
| COMMERCIAL/INDUSTRIAL LAND           | 33.2%                      | 33.7%                   | 26.1%                 | 8                      |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 35.2%                      | 31.2%                   | 13.0%                 | 8                      |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 34.9%                   | 0.1%                  | 6                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 34.9%                   | 0.1%                  | 6                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 34.4%                      | 35.0%                   | 5.2%                  | 19                     |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | 34.8%                      | 35.0%                   | 0.8%                  | 3                      |
| BILLBOARDS                           | 20.3%                      | 26.6%                   | 31.6%                 | 2                      |
| COMMERCIAL/INDUSTRIAL                | 34.8%                      | 35.0%                   | 8.1%                  | 6                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.0%                  | 8                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 34.7%                      | 35.0%                   | 1.5%                  | 20                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 2                      |
| AGRICULTURAL                         | 30.4%                      | 35.0%                   | 8.9%                  | 3                      |
| BILLBOARDS                           | 35.0%                      | 35.0%                   | 0.0%                  | 3                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.9%                  | 4                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.1%                  | 8                      |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>34.5%</b>               | <b>35.0%</b>            | <b>3.3%</b>           | <b>39</b>              |

**STOREY COUNTY**  
**2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| COUNTYWIDE TOTAL PROPERTY            | 39.2%                      | 34.8%                   | 2.9%                  | 50                     |
| COUNTYWIDE IMPROVEMENTS              | 39.7%                      | 34.5%                   | 3.7%                  | 24                     |
| COUNTYWIDE IMPROVED LAND             | 35.6%                      | 35.0%                   | 4.0%                  | 32                     |
| COUNTYWIDE VACANT LAND               | 34.9%                      | 34.8%                   | 1.7%                  | 18                     |
| SINGLE FAMILY IMPROVEMENTS           | 34.4%                      | 34.8%                   | 2.6%                  | 12                     |
| SINGLE FAMILY LAND                   | 33.6%                      | 33.7%                   | 3.9%                  | 12                     |
| SINGLE FAMILY TOTAL PROPERTY         | 34.2%                      | 34.1%                   | 2.9%                  | 12                     |
| MULTIPLE FAMILY IMPROVEMENTS         | 34.5%                      | 34.4%                   | 1.2%                  | 6                      |
| MULTIPLE FAMILY LAND                 | 36.7%                      | 33.8%                   | 7.9%                  | 6                      |
| MULTIPLE FAMILY TOTAL PROPERTY       | 35.2%                      | 34.6%                   | 4.5%                  | 6                      |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 39.9%                      | 34.6%                   | 8.2%                  | 6                      |
| COMMERCIAL/INDUSTRIAL LAND           | 35.6%                      | 35.1%                   | 2.1%                  | 8                      |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 39.4%                      | 34.5%                   | 5.8%                  | 8                      |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 35.0%                      | 35.0%                   | 0.0%                  | 2                      |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | n/a                        | n/a                     | n/a                   | -                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | n/a                        | n/a                     | n/a                   | -                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.0%                  | 2                      |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.0%                  | 13                     |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 1                      |
| AGRICULTURAL                         | n/a                        | n/a                     | n/a                   | -                      |
| BILLBOARDS                           | n/a                        | n/a                     | n/a                   | -                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 0.1%                  | 6                      |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.0%                  | 6                      |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.0%</b>           | <b>15</b>              |

**ALL COUNTIES INCLUDED IN  
2018-2019 RATIO STUDY**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| ALL COUNTIES TOTAL PROPERTY          | 36.4%                      | 34.5%                   | 4.6%                  | 386                    |
| ALL COUNTIES IMPROVEMENTS            | 37.0%                      | 34.0%                   | 7.6%                  | 233                    |
| ALL COUNTIES IMPROVED LAND           | 34.4%                      | 35.0%                   | 4.4%                  | 271                    |
| ALL COUNTIES VACANT LAND             | 34.6%                      | 34.8%                   | 5.0%                  | 112                    |
| <br>                                 |                            |                         |                       |                        |
| SINGLE FAMILY IMPROVEMENTS           | 33.8%                      | 34.0%                   | 7.2%                  | 99                     |
| SINGLE FAMILY LAND                   | 33.7%                      | 34.7%                   | 5.8%                  | 98                     |
| SINGLE FAMILY TOTAL PROPERTY         | 33.8%                      | 34.1%                   | 5.0%                  | 100                    |
| <br>                                 |                            |                         |                       |                        |
| MULTIPLE FAMILY IMPROVEMENTS         | 34.4%                      | 34.0%                   | 10.5%                 | 65                     |
| MULTIPLE FAMILY LAND                 | 34.6%                      | 35.0%                   | 4.0%                  | 65                     |
| MULTIPLE FAMILY TOTAL PROPERTY       | 34.5%                      | 34.2%                   | 4.7%                  | 65                     |
| <br>                                 |                            |                         |                       |                        |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 37.7%                      | 33.8%                   | 5.6%                  | 67                     |
| COMMERCIAL/INDUSTRIAL LAND           | 34.5%                      | 34.9%                   | 5.1%                  | 71                     |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 37.1%                      | 33.8%                   | 4.3%                  | 72                     |
| <br>                                 |                            |                         |                       |                        |
| RURAL IMPROVEMENTS                   | n/a                        | n/a                     | n/a                   | -                      |
| RURAL LAND                           | 35.0%                      | 35.0%                   | 0.1%                  | 37                     |
| RURAL TOTAL PROPERTY                 | 35.0%                      | 35.0%                   | 0.1%                  | 37                     |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 34.8%                      | 35.0%                   | 1.9%                  | 71                     |
| AIRCRAFT                             | n/a                        | n/a                     | n/a                   | -                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.3%                  | 16                     |
| BILLBOARDS                           | 20.3%                      | 26.6%                   | 31.6%                 | 2                      |
| COMMERCIAL/INDUSTRIAL                | 34.9%                      | 35.0%                   | 3.2%                  | 21                     |
| MOBILE HOMES                         | 34.9%                      | 35.0%                   | 0.3%                  | 32                     |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.4%                  | 126                    |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.1%                  | 20                     |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 1.7%                  | 16                     |
| BILLBOARDS                           | 35.0%                      | 35.0%                   | 0.0%                  | 11                     |
| COMMERCIAL/INDUSTRIAL                | 35.4%                      | 35.0%                   | 0.4%                  | 32                     |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.1%                  | 47                     |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.9%</b>           | <b>197</b>             |

**STATEWIDE  
2016-2019 RATIO STUDIES**

**ALL APPRAISAL AREAS**

| <b>REAL PROPERTY</b>                 | <b>AGGREGATE<br/>RATIO</b> | <b>MEDIAN<br/>RATIO</b> | <b>COD<br/>MEDIAN</b> | <b>SAMPLE<br/>SIZE</b> |
|--------------------------------------|----------------------------|-------------------------|-----------------------|------------------------|
| STATEWIDE TOTAL PROPERTY             | 35.3%                      | 34.5%                   | 3.7%                  | 1,226                  |
| STATEWIDE IMPROVEMENTS               | 35.8%                      | 34.2%                   | 5.1%                  | 826                    |
| STATEWIDE IMPROVED LAND              | 34.3%                      | 34.8%                   | 3.7%                  | 920                    |
| STATEWIDE VACANT LAND                | 33.9%                      | 34.6%                   | 4.4%                  | 301                    |
| SINGLE FAMILY IMPROVEMENTS           | 34.2%                      | 34.2%                   | 4.6%                  | 384                    |
| SINGLE FAMILY LAND                   | 34.0%                      | 34.5%                   | 4.2%                  | 383                    |
| SINGLE FAMILY TOTAL PROPERTY         | 34.1%                      | 34.3%                   | 3.3%                  | 385                    |
| MULTIPLE FAMILY IMPROVEMENTS         | 34.5%                      | 34.4%                   | 5.2%                  | 203                    |
| MULTIPLE FAMILY LAND                 | 34.4%                      | 34.8%                   | 3.3%                  | 203                    |
| MULTIPLE FAMILY TOTAL PROPERTY       | 34.5%                      | 34.3%                   | 3.1%                  | 203                    |
| COMMERCIAL/INDUSTRIAL IMPROVEMENTS   | 36.5%                      | 34.0%                   | 5.5%                  | 229                    |
| COMMERCIAL/INDUSTRIAL LAND           | 34.4%                      | 34.7%                   | 4.7%                  | 231                    |
| COMMERCIAL/INDUSTRIAL TOTAL PROPERTY | 36.0%                      | 34.1%                   | 4.4%                  | 234                    |
| RURAL IMPROVEMENTS                   | 32.7%                      | 32.4%                   | 3.8%                  | 3                      |
| RURAL LAND                           | 34.6%                      | 35.0%                   | 0.4%                  | 103                    |
| RURAL TOTAL PROPERTY                 | 34.4%                      | 35.0%                   | 0.6%                  | 103                    |
| <b>SECURED PERSONAL PROPERTY</b>     |                            |                         |                       |                        |
| ALL SECURED                          | 35.0%                      | 35.0%                   | 0.8%                  | 242                    |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.0%                  | 5                      |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.9%                  | 57                     |
| BILLBOARDS                           | 34.7%                      | 35.0%                   | 16.0%                 | 3                      |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 1.3%                  | 68                     |
| MOBILE HOMES                         | 34.9%                      | 35.0%                   | 0.2%                  | 109                    |
| <b>UNSECURED PERSONAL PROPERTY</b>   |                            |                         |                       |                        |
| ALL UNSECURED                        | 35.0%                      | 35.0%                   | 0.7%                  | 397                    |
| AIRCRAFT                             | 35.0%                      | 35.0%                   | 0.1%                  | 72                     |
| AGRICULTURAL                         | 35.0%                      | 35.0%                   | 0.9%                  | 45                     |
| BILLBOARDS                           | 35.0%                      | 35.0%                   | 0.0%                  | 45                     |
| COMMERCIAL/INDUSTRIAL                | 35.0%                      | 35.0%                   | 2.2%                  | 110                    |
| MOBILE HOMES                         | 35.0%                      | 35.0%                   | 0.1%                  | 125                    |
| <b>TOTAL PERSONAL PROPERTY</b>       | <b>35.0%</b>               | <b>35.0%</b>            | <b>0.8%</b>           | <b>639</b>             |

2018-2019

REPORT OF ASSESSMENT RATIO STUDY

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COUNTY ABSTRACTS  
AND FINDINGS

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# CLARK COUNTY NARRATIVE

## 2018-19 RATIO STUDY

Clark County annually reappraises all land and improvements. The Assessor's<sup>1</sup> website includes the past and current assessed and taxable values for land and improvements, previous sale data, building sketches when applicable, chronological aerial photography with measurement tools, plat maps, and other valuable information for each parcel.

*NRS 361.333* requires the Department to determine the ratio of the assessed value of each type or class of property for which the county assessor has the responsibility of assessing, to the taxable value of that type or class of property as determined by the Department through appraisals of individual parcels. The comparison, or "ratio," is in compliance with statutory requirements if the ratio of assessed value to taxable value is 35%. Ratios less than 32% or more than 36% are considered to be under-or-over assessed. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type                         | (b)<br>Sample Size | (c)<br>Samples in Compliance | (d)<br>Samples out of Compliance | (e)<br>Exception Rate |
|--|--------------------|------------------------------|----------------------------------|-----------------------|
| Vacant Land                                  | 32                 | 32                           | 0                                | 0%                    |
| Single-Family Residential Land               | 31                 | 31                           | 0                                | 0%                    |
| Multi-Family Residential Land                | 31                 | 31                           | 0                                | 0%                    |
| Commercial and Industrial Land               | 30                 | 29                           | 1                                | 3%                    |
| Agricultural Land                            | 7                  | 7                            | 0                                | 0%                    |
| Single Family Residential Improvements       | 31                 | 30                           | 1                                | 3%                    |
| Multi-family Residential Improvements (Note) | 31                 | 28                           | 3                                | 10%                   |
| Commercial and Industrial Improvements       | 30                 | 28                           | 2                                | 7%                    |

Note: Two of the MFR outliers resulted from a difference in the way the Clark County M&S is valuing the building vs. the Department. The Department cannot see the Clark county valuation

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff.

system component breakdown and therefore is unable to determine where/how it is occurring.

| <b>Property Type</b> | <b>Sample Size Accounts Reviewed</b> | <b>Total Property Records Examined</b> | <b>Records In Ratio</b> | <b>Records Out of Ratio</b> | <b>Exception Rate</b> |
|----------------------|--------------------------------------|--|-------------------------|-----------------------------|-----------------------|
| Personal Property    | 44                                   | 949                                    | 948                     | 1<br>(Note)                 | <1%                   |

**Note:** *Records Out of Ratio* reflect outliers after adjusting for computer system rounding differences

## O B S E R V A T I O N S   A N D   S U M M A R Y

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**Improvement Discovery / Identification:** County appraisers perform site inspections of improvements prior to occupancy to appraise interiors and on-site minor improvements including porches, patios, and driveway areas. Once an area is built-out, however, the assessor’s office relies on building permits and/or annual aerial photography to capture any changes or new improvements to existing properties throughout the county.

Outliers exist in the rural areas as a result of discovery and identification of small improvements. This appears to be the result of a higher reliance on building plans than on-site property inspection. Clark County believes that the current procedure is the only realistic method of yearly revaluation of the approximately 750,000 properties in Clark County, and the Department concurs. It is apparent that Clark County has improved their review of the aerial photography and other tools available to them as well as the discovery and valuation of improvements throughout the county, as recommended in the 2015-2016 Ratio Study. The Department recommends that the county continue this pattern of better “Improvement Discovery and Identification” but increase their efforts within the rural areas of the county to reduce property escaping taxation.

**Obsolescence:** Since the economic decline, the assessor has applied economic obsolescence to improvements in various market areas uniformly and equally throughout Clark County by producing an extensive analysis of recent market sales data. Once a land value is established, a sales ratio analysis is done by statistically analyzing market areas. A factor for obsolescence is applied, as needed, to all properties where taxable value exceeds market value within specified strata. Despite the recent market turnaround, obsolescence is still required in areas throughout Clark County. The assessor is to be commended for their continued efforts in analyzing the market, determining whether obsolescence is still needed, and ensuring the most fair and accurate values possible within an ever changing real estate market.

**Personal Property:** The assessor discovers business property from a variety of sources including business licensing agencies, tenant lists and a variety of media publications; for aircraft, from airport tie-down lists, hangar owner records, FAA reports, flight schools, and referrals.

The county requests copies of sales agreements, receipts, and IRS depreciation schedules to estimate the personal property component of the sales price when personal property is purchased with real property for a lump-sum amount. When a declaration is not returned by the taxpayer, the county estimates a value based on cost manuals and comparable businesses. Benchmarks are developed for industries where expected value ranges can be established. When a declaration does not meet benchmarks for that business type, the county will conduct telephone interviews, internet research, and visit the site, as well as request additional documents to support reported values.

Forty-four accounts with 949 records were examined. After adjusting for outliers caused by rounding, there was one valid outlier.

# ESMERALDA COUNTY NARRATIVE

## 2018-19 RATIO STUDY

All land is reappraised each year in Esmeralda County. The Nevada Tax Commission approved the Assessor's<sup>1</sup> request to reappraise all land, rather than apply a land factor in non-reappraisal areas in 2008. Beginning in 2011, the assessor began annual re-costing of all improvements though still physically reviewing 1/5 of the county each year.

*NRS 361.333* requires the Department to determine the ratio of the assessed value of each type or class of property for which the county assessor has the responsibility of assessing in each county to the taxable value of that type or class of property as determined by the Department through appraisals of individual randomly chosen parcels. The ratio is in compliance with statute if the ratio of assessed value to taxable value is more than 32 percent or less than 36 percent. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type                            | (b)<br>Sample Size | (c)<br>In Ratio | (d)<br>Out of Ratio | (e)<br>Exception Rate |
|---|--------------------|-----------------|---------------------|-----------------------|
| Vacant Land                                     | 14                 | 14              | 0                   | 0%                    |
| Single-Family Residential Land                  | 12                 | 12              | 0                   | 0%                    |
| Multi-Family Residential Land                   | 9                  | 9               | 0                   | 0%                    |
| Commercial and Industrial Land                  | 9                  | 9               | 0                   | 0%                    |
| Agricultural Land                               | 6                  | 6               | 0                   | 0%                    |
| Single Family Residential Improvements (Note 1) | 12                 | 11              | 1                   | 10%                   |
| Multi-family Residential Improvements           | 9                  | 9               | 0                   | 0%                    |
| Commercial and Industrial Improvements (Note 2) | 9                  | 8               | 1                   | 10%                   |

Note 1: Single Family Residential Improvements: Outlier was in the current reappraisal area.

Note 2: Commercial and Industrial Improvements: Outlier was in the current reappraisal area.

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff.

| Property Type     | Sample Size Accounts Reviewed | Total Property Records Examined | Records In Ratio | Records Out of Ratio | Exception Rate |
|-------------------|-------------------------------|---------------------------------|------------------|----------------------|----------------|
| Personal Property | 36                            | 253                             | 253              | 0<br>(Notes)         | 0%             |

**Notes:** *Records Out of Ratio* reflect outliers after adjusting for rounding differences. One account (EQ000054) had no DEC. Assessor will correct this issue.

## O B S E R V A T I O N S   A N D   S U M M A R Y

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**Marshall & Swift (M&S):** Assessor does not make use of the M&S floor covering allowance nor the appliance allowance when costing real property improvements. Assessor considers floor coverings and appliances to be personal property despite their being included in M&S as real property costs. As a result, these items are escaping taxation since they are not included in the replacement cost of real property.

The Assessor is using the zip code default multipliers within the Advanced Data Systems (ADS) software for Residential properties. These multipliers are verified correct by the Assessor prior to implementation and have been confirmed correct by the Department. Any local costs which differ from values in Marshall & Swift must be sent to the Department for approval prior to use.

However, for commercial properties, the process of defaulting to the correct local cost multiplier (based on zip code tables) within ADS is not functioning as intended. See Finding No. ES 2018-01 (in last section in this document) for details.

**Minor Improvements:** Minor improvements are identified by the Assessor and valued from either the Marshall Swift cost manuals, the Assessor’s Handbook of Rural Building Costs, or (most commonly) internally prepared documents summarizing the most commonly used (in Esmeralda County) appraisal categories and minor improvement values. These internal costs, which are updated annually, are derived directly from the statutorily approved cost manuals (Marshall & Swift and the Rural Manual), with reference columns that include Unit of Measurement, Total Cost; Base Cost; Section & Page from the corresponding manual, and the proper multipliers assigned to Esmeralda County. The assessor does not employ lump sum costing but instead values minor improvements individually. When practical this is a best practice.

However, there are instances where buildings are valued from rural manual data as “General Purpose” buildings, cabins or bunkhouses (implying built by unskilled

labor) even when that does not appear to be the case. Assessor should consider using M&S in these instances and if necessary incorporating an adjustment for very low quality and/or unskilled labor.

There were a few instances in which small minor improvements were not picked up in the reappraisal area but were not enough to create an outlier. In general, these are small decks, patio covers, etc. associated with personal property mobile homes plus perimeter farm wire fencing. (This type of fencing in general is not picked up if its primary purpose is to keep wild animals off the owner's property.) The Assessor elects not to value flag poles anywhere in the county even when they are considered to be real property.

**Improvement Factor:** Esmeralda County now annually re-costs improvements.

**New Construction Valuation:** Esmeralda County does not have an official "Building Department". New construction is documented as it's discovered (word of mouth, random observation and during the physical re-appraisal of each area. During this ratio study there were 5 parcels in the non-reappraisal areas on which changes, updates, additions etc. were discovered, documented and discussed with the assessor who made the appropriate changes to the property file and tax roll. In those few instances, where the changes are significant, the assessor made a note to visit the property prior to the scheduled physical re-appraisal year.

**Land:** Esmeralda County does have a fair number of vacant land sales compared to other rural counties; however, they are mostly located in Goldfield and to a lesser extent Fish Lake Valley. The assessor is able to utilize these sales in developing base lot values used for valuing land. Assessor does not rely on abstraction since it would not be useful with so little new construction and no newer homogeneous neighborhoods in the county.

In Esmeralda County the assessor generally does not make a distinction in value between residential and commercial vacant land values. In Goldfield this practice is based on a previous study. Current data supports that this assumption remains valid. This facilitates the use of vacant sales (LUC 100) in valuing land throughout the county. Ratio study land values were typically in ratio based on 5 years of sales of similar size parcels without regard to LUC of the subject.

While there were no land valuation outliers for those parcels in the ratio study there are two *potential* issues that bear watching;

- A detailed review of the parcels in the ratio study indicates their land values have not changed over the last 3 years (current tax year plus two previous years).

- A cursory “broad brush” study of all land values in Esmeralda County using SPSS Statistical Software suggests that where values did change those change occurred primarily in the re-appraisal area for a given year.

Neither of these observations is necessarily indicative of a trend, however, Assessor should insure that all land values are reviewed during annual reappraisal of land.

Note: there was one land outlier discovered in the re-appraisal area, however, the assessor was notified and updated the value prior to close of the tax roll.

**Appraisal Records:** Esmeralda County parcel files are neat, well organized and generally current when compared to files of other counties reviewed to date. New computerized sketches of improved properties are replacing old hand-drawn sketches as needed. Minor improvements are generally not included on the APEX sketch however the “Appraiser’s Information” sheet provides enough detail to distinguish existing from new minor improvements.

Assessor has made progress in the last few years making property information available to the general public via the Esmeralda County Assessor website. Apex sketches, photos, parcel maps and costing calculations are now available online.

**Agricultural Properties:** The agricultural records are well maintained with maps and detailed descriptions of land classifications. There were no outliers for agricultural land in this year’s ratio study.

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## FINDINGS AND RECOMMENDATIONS

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### Finding No. ES 2018-01

#### Criteria

This finding is specific to commercial properties. The cost of replacement of an improvement must be calculated in accordance with Nevada Administrative Code (NAC) 361.128 (1) using the standards and modifiers of local costs published in the version of the *Residential Cost Handbook*, *Marshall Valuation Service*, *Residential Estimator* software or *Commercial Estimator* software, as appropriate, adopted by reference pursuant to [NAC 361.1177](#) as of January 1 of the year immediately preceding the lien date for the current year.

## **Condition**

For Esmeralda County, *Marshall Valuation Service, Commercial Estimator* software defaults to the Lincoln County local cost multipliers when valuing commercial improvements. However, those default values are overridden by the Esmeralda County Assessor with the Nye County equivalent multipliers which are considered to be more appropriate.

When valuing commercial properties, the specific multiplier is dependent on the Class of Construction Indicator (i.e. building class A, B, C, D or S). M&S software utilizes the built in zip code tables in order to select the appropriate multiplier based on building type. Thus, the Esmeralda assessor would typically override the zip code for the property being valued with a Nye county zip code. Because the zip code override is not functioning properly (a known M&S problem), the Esmeralda Assessor would manually override the actual local multiplier in ADS such that the same multiplier value (regardless of building class) is perpetuated across all commercial properties. A local Multiplier of .88 (Class D), the lowest of the Nye County default commercial local multipliers was utilized for Esmeralda's 2018-19 tax roll.

## **Cause**

The M&S process of programmatically selecting the appropriate local multiplier for commercial improvements, based on building class and built in zip code tables, is not functioning properly.

## **Effect**

Utilizing the lowest of the multiplier options (.88) for valuing all commercial improvements has the potential to produce a final value that is approximately 3% to 7% lower than the value calculated with the proper multiplier. (In this case, the multipliers for the tax year in question range from .88 to .95). Note that for this ratio study the commercial sample consisted primarily of Class D improvements with only one class C building with an LCM of .91, i.e. approximately a 3% difference from .88. Not enough to produce an out of ratio condition.

## **Recommendation**

Manually overriding the local cost multiplier to correspond to the building class for every commercial property in the county is generally not a practical solution. Several other counties have created a 'work-around' solution utilizing an otherwise unused field in ADS (typically the 'Category' field) to maintain a code representing the building class. By creating a query to select records based on the value in this field they are able to select all commercial properties with a specific Class of Construction. Those records are then updated en masse with the appropriate local cost multiplier.



Esmeralda is prevented from using this solution since the 'Category' field is currently in use for another purpose. The simplest solution would be to use a composite multiplier that best represents the distribution of building classes in the county. However, the Department does not recommend this solution since it will produce an incorrect value in some cases even though chances are that none of the resulting values will be out of ratio due to the multiplier.

The Department met with the assessor to discuss the work-around solution utilized by other assessors. In the end, a simpler solution suggested by the Esmeralda Assessor will be put in place.

The agreed on solution is based on Esmeralda having a relatively small number of commercial accounts thus not requiring mass updating of multipliers for each building class. Instead, assessor is confident she can programmatically create commercial account lists, by building class, and use these to manually review and update accounts as required.

This task will be completed the week of April 9<sup>th</sup>. To insure the correct commercial local multipliers are used in the future the appropriate steps will be incorporated into the office operating procedures.

# EUREKA COUNTY NARRATIVE

## 2018-19 RATIO STUDY

Eureka County comprises 5 appraisal areas which are defined by geography, township, range, and section boundaries. The Eureka County Assessor's Office appraises all land and improvements within the county each year<sup>1</sup>. The Assessor continues to physically inspect 1/5 of the county each year to capture any new improvements added within the previous 5 years.

*NRS 361.333* requires a comparison of the assessed value of each type or class of property determined by the county Assessor to the taxable value of that type or class of property within that county determined by the Department through appraisals of individual parcels. The comparison, or "ratio," is in compliance with statutory requirements if the ratio of assessed value to taxable value is 35%. Ratios less than 32% or more than 36% are considered to be under-or-over assessed. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type                   | (b)<br>Sample Size | (c)<br>Samples in Compliance | (d)<br>Samples out of Compliance | (e)<br>Exception Rate |
|--|--------------------|------------------------------|----------------------------------|-----------------------|
| Vacant Land                            | 16                 | 16                           | 0                                | 0%                    |
| Single-Family Residential Land         | 0                  | 0                            | 0                                | 0%                    |
| Multi-Family Residential Land          | 0                  | 0                            | 0                                | 0%                    |
| Commercial and Industrial Land         | 0                  | 0                            | 0                                | 0%                    |
| Agricultural Land                      | 6                  | 6                            | 0                                | 0%                    |
| Single Family Residential Improvements | 12                 | 11                           | 1                                | 8%                    |
| Multi-family Residential Improvements  | 7                  | 6                            | 1                                | 14%                   |
| Commercial and Industrial Improvements | 9                  | 9                            | 0                                | 0%                    |

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff.

| <b>Property Type</b> | <b>Sample Size Accounts Reviewed</b> | <b>Total Property Records Examined</b> | <b>Records In Ratio</b> | <b>Records Out of Ratio</b> | <b>Exception Rate</b> |
|----------------------|--------------------------------------|--|-------------------------|-----------------------------|-----------------------|
| Personal Property    | 33                                   | 275                                    | 268                     | 7<br>(Note)                 | 3%                    |

**Note:** *Records Out of Ratio* reflect outliers after adjusting for computer system rounding differences

## O B S E R V A T I O N S   A N D   S U M M A R Y

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**Marshall & Swift (M&S):** The Assessor values real property using software developed by Advanced Data Systems (ADS) that incorporates Marshall & Swift Valuation Service cost tables, pursuant to NAC 361.128. This system uses “current cost” and “local conditions” multipliers that trend the published costs to a current date and adjust the costs by location.

These location multipliers vary by area and are based upon the United States Postal Service, Zone Improvement Plan (ZIP) Codes. The Assessor is using the zip code multipliers within the CAMA system for all classes of improved property. These multipliers have been confirmed correct by the Department.

**Minor Improvements:** Eureka County utilizes a comprehensive list of various minor improvements referred to as computer cost additives which include but are not limited to: flatwork, curbs, outdoor lighting, porches, decks and awnings. A variance study was conducted to determine whether the computer additive costs were comparable to similar component costs published in the M&S cost manuals, and the Department has validated these costs.

Certain minor improvements are published within cost tables that indicate a unit cost based on a specific area that is usually expressed in square footage. These tables typically require interpolation to derive a proper unit cost for the area being valued. Interpolation is the process of finding the value that lies between two other values. A review of the county’s appraisal records reveals that interpolation is being properly applied when applicable.

**New Construction Improvement Valuation:** Eureka County does not have a building department. Therefore, the Assessor discovers new construction while performing field inspections during the physical, annual reappraisal. Every two weeks the Assessor reviews changes in ownership by examining instruments particular to the transfer of property. The Department has determined that the Assessor is appropriately valuing new improvements upon discovery. The

Department noted one Single Family Residential parcel in the sample had some improvements that had not yet been discovered; it is expected they will be added to the assessment roll the next time that appraisal area is inspected in 2022.

**Appraisal Records:** The information contained within the Assessor's files is complete, correct, and up to date. Improved property files having sketches have been scanned and are available via computer imaging. All assessment and tax information is made available on-line to the general public via the Eureka County Assessor's Office website.

**Personal Property:** The personal property portion of the ratio study examined 34 accounts comprising 275 records. Seven outliers were discovered; from which four were for incorrect values assigned to antennas and two were for incorrect values assigned to computer based switch equipment that were all found in a single account. The seven record outliers resulted in two Commercial/Industrial accounts being slightly out of ratio at 37.8 percent and 36.7 percent.

# LINCOLN COUNTY NARRATIVE

## 2018-19 RATIO STUDY

All improvements are revalued and land reappraised annually in Lincoln County. The Assessor<sup>1</sup> continues to physically inspect 1/5 of the county each year to capture any new improvements added without a permit within the previous 5 years. The reappraisal area for this ratio study is Area 3 (Panaca).

NRS 361.333 requires the Department to determine the ratio of the assessed value of each type or class of property for which the county assessor has the responsibility of assessing in each county to the taxable value of that type or class of property within that county determined by the Department through appraisals of individual parcels. The ratio is in compliance with statute if the ratio of assessed value to taxable value is more than 32 percent or less than 36 percent. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type                                | (b)<br>Sample Size | (c)<br>In Ratio | (d)<br>Out of Ratio | (e)<br>Exception Rate |
|---|--------------------|-----------------|---------------------|-----------------------|
| Vacant Land   | 15                 | 15              | 0                   | 0%                    |
| Single-Family Residential Land<br>(Note #1)         | 15                 | 14              | 1                   | 7%                    |
| Multi-Family Residential Land                       | 6                  | 6               | 0                   | 0%                    |
| Commercial and Industrial Land                      | 8                  | 8               | 0                   | 0%                    |
| Agricultural Land                                   | 6                  | 6               | 0                   | 0%                    |
| Single Family Residential Improvements<br>(Note #2) | 15                 | 14              | 1                   | 7%                    |
| Multi-family Residential Improvements<br>(Note #3)  | 6                  | 3               | 3                   | 50%                   |
| Commercial and Industrial Improvements<br>(Note #4) | 8                  | 6               | 2                   | 25%                   |

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff

Note 1: Single Family Residential Land: The 1 outlier listed above was found in the 4/5 of the county which was not *physically* inspected during the 2018-2019 tax year.

Note 2: Single-Family Residential Improvements: The 1 outlier listed above was found in the 4/5 of the county which was not *physically* inspected during the 2018-19 tax year.

Note 3: Multi-Family Residential Improvements: The 3 outliers listed above were found in the 4/5 of the county which was not *physically* inspected during the 2018-2019 tax year.

Note 4: Commercial and Industrial Improvements: The 2 outliers listed above was found in the 4/5 of the county which was not *physically* inspected during the 2018-2019 tax year.

| <b>Property Type</b> | <b>Sample Size Accounts Reviewed</b> | <b>Total Property Records Examined</b> | <b>Records In Ratio</b> | <b>Records Out of Ratio</b> | <b>Exception Rate</b> |
|----------------------|--------------------------------------|--|-------------------------|-----------------------------|-----------------------|
| Personal Property    | 29                                   | 166                                    | 166                     | 0                           | 0%                    |

**Notes:** *Records Out of Ratio* reflect outliers after adjusting for computer system rounding differences.

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## O B S E R V A T I O N S   A N D   S U M M A R Y

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**Technology:** Lincoln County has created a user friendly website with transparency which allows taxpayers to retrieve information anytime. In addition, staff is available to address taxpayer questions and concerns directly. Also, the county assessor has signed up for Pictometry. Pictometry conducts aerial photographs for high resolution images of buildings and improvements. These services will begin this spring and should assist in more accurate discovery of improvements, especially in more remote areas. Also, the county assessor has been proactive in asking for help from the State and other assessors.

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## F I N D I N G S   A N D   R E C O M M E N D A T I O N S

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### Finding No. LN 2018-01

#### Criteria

According to NRS 360.215(2), the Department shall consult and assist county assessors to develop and maintain standard assessment procedures to be applied and used in all of the counties of the State, to ensure that assessments

of property by county assessors are made equal in each of the several counties of this state.

### **Condition**

In Advanced Data Systems (ADS) software, there is a county override in place making the seismic adjustment level 2. Per Guidance Letter 10-003 dated 7/14/2010, the seismic adjustment level 3 should be applied in all counties when costing residential properties. The exception to this would occur if the local building department indicates a different seismic level in the building codes for the county and documentation must be provided to the Department of Taxation for approval. There is no evidence that Lincoln County has requested this exception.

### **Cause**

The data system used to calculate improvement values using Marshall & Swift costs was applying the Zone 2 seismic adjustment instead of the Zone 3 adjustment, which should be used.

### **Effect**

Residential properties in Lincoln County are being undervalued. Values of residential properties will increase once the seismic adjustment is changed from Level 2 to Level 3. The difference between these two adjustments is approximately \$1.16/sq.ft. Depending upon the square footage of the parcel, it could become statistically significant. There are approximately 2,067 SFR parcels in Lincoln County. Because so many elements are being affected and occurring at once, it is impossible to know the fiscal impact on the county.

### **Recommendation**

The county assessor should check all the residential properties & change the seismic level adjustment to 3. This error was not brought to the attention of the Assessor prior to the tax roll closing as it was not discovered until after that point. The Assessor should be extra diligent to ensure all pertinent guidance letters are being followed.

## **Finding No. LN 2018-02**

### **Criteria**

NAC 361.1179 Land: Methods for determining full cash value. If sufficient sales of comparable properties which were vacant at the time of sale are available, a county assessor shall determine the full cash value of land by applying the sales

comparison approach using: a mass appraisal technique, single property technique or alternate methods to sales comparison approach.

### **Condition**

Land values throughout the county have not been examined or properly determined for the past 3 years.

### **Cause**

The Assessor has admitted he is unsure how to value land properly. As a result, the values for land remain unchanged.

### **Effect**

As a result of land values not being examined and determined, their accuracy is questionable leaving the resulting assessed values questionable. The differences in the sample may not be statistically valid to apply to the population, so the effect is not known to a valid range.

### **Recommendation**

Land values need to be addressed. The assessor has reached out to the Department of Taxation for training. A training session on land valuation has been scheduled for late February 2018 with the Assessor. Once the assessor has a better understanding on proper land valuation techniques, the appropriate changes should be made in a timely manner.

## **Finding No. LN 2018-03**

### **Criteria**

The statewide Improvement Factor from the Department of Taxation is 1.02 yielding a composite factor (depreciation and improvement factor) of 1.005 for 2018-19. The county assessor agreed to apply an improvement factor outside of the reappraisal area.

### **Condition**

Several parcels have the wrong composite factor applied for 2018-19. There are 12 parcels (3 commercial, 1 multi family residence, 8 single family residences), which share this issue. Composite factors of .995 and 1.01 were used by the Assessor.



## **Cause**

There does not appear to be a common reason for the incorrect use of the composite factor affecting these parcels. Incorrect factors were simply miscalculated and applied to various property types.

## **Effect**

Various parcels have had incorrect composite factors applied over multiple years. The random improper application of the composite factor, does not necessarily cause outliers throughout the county resulting in a violation of *NRS 361.333(5)(c)*, but creates over and under assessment throughout the county creating an equalization problem. Many elements are being affected and occurring at once, thus it is impossible to know the fiscal impact to the county.

## **Recommendation**

In order to ensure all properties are in compliance with all statutory regulations, full county reappraisal is recommended. Annual re-costing of improvements is the preferred method of valuation. Preparing to transition to annual re-costing, with the implementation of the new Computer Assisted Mass Appraisal (CAMA) system, provided by DevNet, is recommended.

# MINERAL COUNTY NARRATIVE

## 2018-2019 RATIO STUDY

All land is reappraised each year in Mineral County. The Assessor's<sup>1</sup> Office applies the improvement factor, approved by the Nevada Tax Commission, in 4/5 of the county, the non-reappraisal areas, annually and re-inspects the 1/5 of the county in the re-appraisal area for each year.

*NRS 361.333* requires the Department to determine the ratio of the assessed value of each type or class of property for which the county assessor has the responsibility of assessing in each county to the taxable value of that type or class of property within that county determined by the Department through appraisals of individual parcels. The ratio is in compliance with statute if the ratio of assessed value to taxable value is more than 32 percent or less than 36 percent. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type <sup>2</sup>      | (b)<br>Sample Size | (c)<br>Observations in Compliance | (d)<br>Observations out of Compliance | (e)<br>Exception Rate |
|--|--------------------|-----------------------------------|---------------------------------------|-----------------------|
| Vacant Land                            | 13                 | 7                                 | 6                                     | 46%                   |
| Single-Family Residential Land         | 17                 | 5                                 | 12                                    | 71%                   |
| Multi-Family Residential Land          | 7                  | 1                                 | 6                                     | 86%                   |
| Commercial and Industrial Land         | 8                  | 3                                 | 5                                     | 63%                   |
| Agricultural Land                      | 6                  | 6                                 | 0                                     | 0%                    |
| Single Family Residential Improvements | 17                 | 3                                 | 14                                    | 82%                   |
| Multi-family Residential Improvements  | 7                  | 0                                 | 7                                     | 100%                  |
| Commercial and Industrial Improvements | 8                  | 0                                 | 8                                     | 100%                  |

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff.

<sup>2</sup> See Findings No. MN 2018-01 thru 03 for details related to above Exception Rates and Observations out of Compliance.

| <b>Property Type</b> | <b>Sample Size Accounts Reviewed</b> | <b>Total Property Records Examined</b> | <b>Records In Ratio</b> | <b>Records Out of Ratio</b> | <b>Exception Rate</b> |
|----------------------|--------------------------------------|--|-------------------------|-----------------------------|-----------------------|
| Personal Property    | 43                                   | 301                                    | 295                     | 6<br>(Notes)                | 2%                    |

**Notes:** *Records Out of Ratio* reflect outliers after adjusting for computer system rounding differences. See Personal Property Observation for additional information.

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## O B S E R V A T I O N S   A N D   S U M M A R Y

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**APEX:** The 2015-2016 Ratio Study noted that sketches in file should be redone in the APEX drawing program to eliminate errors in total square footage starting in the next reappraisal year. Incorrect square footage was the result of several outliers in 2015-2016. Conversion to APEX has not been started.

**Records:** Sales verification and validation records need to be maintained within the sales database system. Sales are lacking codes and remarks as to their validity. As a result, determining whether a sale is valid or not, is difficult. It is unknown whether a separate excel spreadsheet was maintained by the Assessor for land valuation purposes.

**Land Valuation:** Most land values within the county have remained the same since either the 2013-2014 or 2011-2012 tax years. Some were found to have had no value change since 2008-2009. The Department did find some land values, within Reappraisal Group 2, that had value changes during the 2016-2017 year when Group 2 was last reappraised. Thirty percent of the land out of compliance, within the sample, is less than 1% above or below statutory compliance.

**Personal Property:** Forty-three accounts with 301 records were examined. After adjusting for outliers caused by rounding, there are six valid outliers. Upon review of assigned life expectancies, it was noted that the life assignment of copiers is incorrect. In 2011-2012 the life of copiers changed from 7 to 5 years. Accounts were not updated, at that time, to reflect the life change. Currently all copiers within the sample are fully depreciated, therefore, no outliers were caused. Upon review of personal property accounts, outside the sample, to determine if the correct life is currently being assigned for copiers, no newer copiers were found. However, inconsistencies were discovered in life assignments for other property types. Digital “point and shoot” type cameras have life assignments of 3, 10 and 15 years, fax machines, laptop computers and printers also have inconsistent and/or incorrect life assignments. In order to ensure fair and equal taxation, it is directed that the assessor review personal property records, in order to compare

the currently assigned NAICS Code and life classification of all copier; fax; computer; camera and other office related equipment, to the Personal Property Manual, verify proper NAICS Industry Code and life classification, and make appropriate changes.

On review of Mobile Home accounts, 9 of the 16 accounts are pre-1982. Only 2 of the accounts have a Dealer Report of Sale (DRS) or Suggested Retail Price (SRP), in file, documenting the acquisition cost/value of the mobile home. It is directed that the Assessor maintain records documenting how the value was derived and assigned.

During review of the Declarations of Value, it was noted that, several of the accounts do not have current declarations and/or all equipment is deactivated. It is directed that procedures be put in place to ensure property records are accurate, current, and that accounts no longer active are put into inactive status.

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## FINDINGS AND RECOMMENDATIONS

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### **Finding No. MN 2018-01**

#### **Criteria**

Each year, property is assessed according to *NRS 361.260*. When determining the taxable value of improvements, the calculation of the cost of replacement of an improvement must be calculated in accordance with *NAC 361.128*, which states that the *Residential Cost Handbook*, *Marshall Valuation Service*, *Residential Estimator* software or *Commercial Estimator* software, or the manual of rural building costs must be used.

#### **Condition**

The Department was unable to reconcile the Assessor's cost sheets with the values in Marshall & Swift or the Rural Manual, with the exception of costs containing a range of values. Costs were found to be both higher and lower than those within the manuals. Additionally, the Assessor was directed during the 2015-2016 Ratio Study to use the Seismic 3 adjustment from Marshall and Swift in accordance with Guidance letter 10-003 (2010). The Commercial Local Cost Multipliers in the Marshall and Swift software program default to Sparks but the Assessor overrides to the Fallon multipliers. Multipliers in the Advanced Data System (ADS), the vendor for the county appraisal software, do not match those in Fallon and are input to the thousandths place (ex .998).

## **Cause**

Several attempts were made by the Department to get an explanation by the Assessor for the differing costs with no response. Seismic 3 is still not being used in valuing residential property consistently. A random search within ADS shows Seismic Adjustments applied as blank field, 1, 2 & 3. It is unknown where the Commercial multipliers being used came from or why they have been taken out 3 places as Marshall and Swift multipliers are taken out 2 places.

## **Effect**

By itself, each of the three items do not necessarily create outliers resulting in a violation of *NRS 361.333(5)(c)*, but together, in combination with Finding MN 2018-02, the county had extremely high exception rates on all property types. Over and under assessment is occurring throughout the county creating an equalization problem. Because so many elements are being affected and occurring at once, it is impossible to know the fiscal impact on the county.

## **Recommendation**

In order to ensure all properties are in compliance with all statutory regulations, full county reappraisal is needed. It is the Department's intent to guide the interim, and future Assessor, in correcting the deficiencies and getting all properties reappraised prior to the next Mineral County Ratio Study.

## **Finding No. MN 2018-02**

### **Criteria**

Each year, property is assessed according to *NRS 361.260*. In the non-reappraisal area, an improvement factor shall be applied as prescribed in *NRS 361.260(5)(b)*. All property is subject to depreciation in accordance with *NRS 361.227(2)(b)*.

### **Condition**

Depreciation was not applied to properties during the 17-18 or 18-19 tax years in accordance with *NRS 361.260(5)* and incorrect composite factors (depreciation and improvement factor) were applied in the 2014-2015 and 2016-2017 tax years. Improvement factors have been applied on many parcels in lieu of the statutory reappraisal minimum of every 5 years in accordance with *NRS 361.260(6)*. It appears that the improvements in Reappraisal Group 2 have not been reappraised since the 2011-2012 tax year. Reappraisal should have been done during the 2016-2017 tax year. Reappraisal Group 3 should have been reappraised during the 2017-2018 tax year. It appears that Group 3 has not been

reappraised since the 2012-2013 tax year. Reappraisal Group 4 should have been reappraised during the 2018-2019 appraisal year. It appears that Group 4 has not been reappraised since the 2013-2014 tax year. A random search within ADS showed conflicting costing dates between the county website, the property costing system, and the property appraisal master inquiry.

### **Cause**

The Assessor must, each year, apply the statutory depreciation to property during the re-costing process or, for the non-reappraisal area, the factoring process. It is unknown why depreciation was not applied during the 17-18 or 18-19 tax years. Math calculation errors are the cause of incorrect composite factor applications. A combination of factors, are present with regard to property not being reappraised within the 5 years reappraisal cycle. It is the Department's belief that the Assessor has not been consistently re-costing using the property costing portion of the system and possibly attempted to make manual updates instead of using the system as designed. This resulted in some parcels appearing to have been revalued, which may not be the case. Improvement values therefore may be older than they actually appear when looking in the system. A random search through ADS's property costing portion of the system showed "last updated" dates going back to 2001. The date in addition to the "cost as of" date should update when a new appraisal valuation is run. The Department is unable to definitively determine what has been done and would require a parcel by parcel examination to determine what occurred.

Differences in the way improvements were valued can be found from one parcel to another within the same reappraisal area making it difficult to determine what actually occurred. It appears as if an attempt at a "work around" in the computer may have been used which increases errors resulting in improper valuation. In addition, it was noted that the Assessor's Annual Report of Appraisals showed inconsistencies with when groups were being reappraised. This has resulted in reappraisal groups not being reappraised according to the designated schedule. Several attempts were made by the Department to obtain an explanation for the change in the reappraisal cycle with no response. The lack of certified and trained appraisal staff undoubtedly contributed to the condition as stated. However, *NRS 360.215(8)* affords the Assessor the ability to seek assistance from the Department in conducting appraisals when the assessor considers such assistance necessary. No assistance was requested.

### **Effect**

The improper application of depreciation and improvement factors, by themselves, do not necessarily create outliers resulting in a violation of *NRS 361.333(5)(c)*, but together, in combination with stated findings in MN 2018-01, the county had extremely high exception rates on all property types. Over and under assessment has occurred throughout the county creating an equalization

problem. Because so many elements are being affected and occurring at once, it is impossible to know the fiscal impact on the county.

### **Recommendation**

In order to ensure all properties are in compliance with all statutory regulations, full county reappraisal is needed. It is the Department's intent to guide the interim, and future Assessor, in correcting the deficiencies and getting all properties reappraised prior to the next Mineral County Ratio Study. Annual re-costing of improvements is the preferred method of valuation. Preparing to transition to annual re-costing, with the implementation of the new Computer Assisted Mass Appraisal (CAMA) system, provided by DevNet, is recommended.

### **Finding No. MN 2018-03**

#### **Criteria**

*NRS 361.221* requires a person to hold a valid appraisers certificate to perform the duties of an appraiser.

#### **Condition**

During the 2017-2018 Ratio Study the Assessor's Office had 3 employees. The Assessor was the only person within the Assessor's Office to hold a valid certification. Prior to the conclusion of the 2017-2018 Ratio Study, the Assessor retired leaving no one certified to assess property within Mineral County.

#### **Cause**

Of the two remaining employees, one has never held a temporary certificate and the other's 2 year temporary certificate expired. Certification training and testing is made available by the Department four times per year. During the fall of the 2017-2018 year, in depth web based certification classes/training and certification review were made available to all county staff via GoToMeeting, followed by testing in Carson City. Several attempts were made by Department Staff to get Mineral employees involved. Department records show no employees have attended any of the classes or certification exams since Fall 2016. *NAC 361.563* allows the counties to request additional testing dates and locations when needed. At no time was a request made for testing in Mineral County.

#### **Effect**

With only 1 member of the Assessor's Office certified, the burden of assessment completion falls to that one member. Currently, no one is certified in Mineral County which results in no assessment work being done in the Assessor's Office.

## **Recommendation**

Since the appointment of the Interim Assessor, the Department has, again, provided the education materials needed to study for and pass the certification exam. The Assessor and one employee now possess a temporary certification. It is the Department's intent to work closely with the Assessor to get the staff trained and certified as soon as possible. It is recommended that the Assessor's staff utilize the education materials provided by the Department and make studying and testing for the certification exam a priority, so as to ensure a full staff capable of performing the assessment duties required of the Assessor's Office.

## **Finding No. MN 2018-04**

### **Criteria**

*NRS and NAC 361* require the Assessor to provide specified reports to the Department by specified dates.

### **Condition**

During 2016-2017, the Department shows no record of receiving the Tax Roll (*NAC 361.152 & NRS 361.310*), Annual Report of Appraisal (*NAC 361.150 & NRS 360.250*), or the Sales Data Report (*NAC 361.151 & NRS 360.250*). For the 2017-2018 tax year there is no record of having received the Sales Data Report. The Annual Report of Appraisal submitted to the Department for the 2018-2019 year was turned in late and in conflict with those turned in in 2015-2016 and in prior years. The Tax Roll for 2018-2019 was closed after the statutory date of January 1 and the Tax Roll was not received until January 16, 2018.

### **Cause**

The Department attempted to have these reports resent, in the event that they were lost during Department staff changes and subsequent relocation. All attempts by the Department to obtain these reports from the Assessor went unanswered.

### **Effect**

Mineral County Assessor's Office is in violation of *NAC 361.152, NRS 361.310, NAC 361.150, NRS 360.250, NAC 361.151 and NRS 361.300*.

## **Recommendation**

All reports must be provided on time to the Department as required by statute and administrative code.



# STOREY COUNTY NARRATIVE

## 2018-2019 RATIO STUDY

Land is reappraised each year in Storey County. The Assessor<sup>1</sup> conducts full revaluation of all improvements annually and continues to inspect 1/5 of the county either through the use of Pictometry or physical inspection. An independent contractor is responsible for the valuation of land, new construction and improvements in the Industrial Area each year.

*NRS 361.333* requires the Department to determine the ratio of the assessed value of each type or class of property for which the county assessor has the responsibility of assessing in each county to the taxable value of that type or class of property within that county determined by the Department through appraisals of individual parcels. The ratio is in compliance with statute if the ratio of assessed value to taxable value is more than 32 percent or less than 36 percent. See *NRS 361.333(5)(c)*. The Department considers parcels to be in compliance when rounding to the statutory requirement of 32 to 36 percent; thus, parcels reported to be out of compliance, as shown in the below table, are below 31.50% or above 36.49 percent.

### DEPARTMENT FINDINGS

| (a)<br>Property Type                            | (b)<br>Sample Size | (c)<br>Samples in Compliance | (d)<br>Samples out of Compliance | (e)<br>Exception Rate |
|---|--------------------|------------------------------|----------------------------------|-----------------------|
| Vacant Land                                     | 18                 | 18                           | 0                                | 0%                    |
| Single-Family Residential Land                  | 12                 | 10                           | 2                                | 17%                   |
| Multi-Family Residential Land                   | 6                  | 5                            | 1                                | 17%                   |
| Commercial and Industrial Land                  | 8                  | 7                            | 1                                | 12.5%                 |
| Agricultural Land/Mining                        | 6                  | 6                            | 0                                | 0%                    |
| Single Family Residential Improvements          | 12                 | 12                           | 0                                | 0%                    |
| Multi-family Residential Improvements           | 6                  | 6                            | 0                                | 0%                    |
| Commercial and Industrial Improvements (Note 1) | 8                  | 6                            | 2                                | 25%                   |

<sup>1</sup> All references to the Assessor means the Assessor or the Assessor's staff.

Note 1: Commercial and Industrial Improvements: Both outliers were the result of Marshall & Swift software's local cost multiplier defaults, used by the Assessor, differing from the local cost multipliers in the Marshall & Swift Manual used by The Department. Further explanation can be found in Finding No. 2018-01.

| <b>Property Type</b> | <b>Sample Size Accounts Reviewed</b> | <b>Total Property Records Examined</b> | <b>Records In Ratio</b> | <b>Records Out of Ratio</b> | <b>Exception Rate</b> |
|----------------------|--------------------------------------|--|-------------------------|-----------------------------|-----------------------|
| Personal Property    | 15                                   | 146                                    | 145                     | 1<br>(Note)                 | <1%                   |

**Note:** *Records Out of Ratio* reflect outliers after adjusting for computer system rounding differences

## OBSERVATIONS AND SUMMARY

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**Staffing:** The Assessor currently has one appraiser and the Assessor certified in both Real and Personal Property, and one appraiser certified in Personal Property. It is expected that another appraiser will be hired at the start of the next fiscal year. In addition, the Assessor will no longer be responsible for DMV which will allow the staff to focus more time on assessment duties.

**Mapping:** The Assessor has contracted with Farr West Engineering to improve their parcel maps. Some of the maps still reflect hand changes to parcels but those maps that were illegible have been redone and the parcel maps in their entirety have been vastly improved for both public and office use. Hand changed maps are in the process of being redone. The Assessor expects to have them completed during the 2018 year.

**Minor Improvements:** Minor improvements are identified by the Assessor and valued from either the Marshall & Swift (M&S) cost manuals or the Manual of Rural Building Costs. The implementation of the electronic program for small improvements and depreciation was implemented by the Assessor prior to completion of the last Ratio Study with the exception of personal property mobile homes. This has been completed and the county is now 100% electronic with hardcopy backup. Physically inspecting 1/5 of the county each year to capture any non permitted improvements added or removed is best practice. The Assessor uses a combination of Pictometry and physical inspection on the 1/5 of the county in the reappraisal cycle.

**New Construction Valuation:** The Assessor discovers new construction using county building permits, taxpayer notification and thorough physical inspections. Nearly, all new construction is discovered in this manner. In past studies, it was noted that improvements requiring permits were escaping taxation. The new

Community Development Director and staff have worked with the Assessor to improve this issue. The Assessor now has access to a shared file with all Building Department notes including their utilization of the M&S percent complete form at the time the Certificate of Occupancy is issued. This has greatly improved the Assessor's new construction valuation process.

**Obsolescence:** Obsolescence has been removed from all property within the county with the exception of individual properties as needed.

**Land:** In order to properly adjust land for various positive or negative characteristics, all adjustments must be supported by market data and documented in the property record. It was directed, during the last Ratio Study, that the Assessor create a procedure of documenting and quantifying adjustments to the land and updating them periodically to reflect changes to the market that affect the adjustments made to areas and/or characteristic types. The Assessor did not maintain discernible records of how base land values were developed in the past. The Assessor has not yet been able to gather historical information, where available, and organize it in such a manner as to utilize the data, as a tool, for additional support of values determined using authorized methods. It is, however, expected to be accomplished in the future. The Assessor has met with the Department to obtain additional assistance in order to more accurately develop land values and has made progress in the equalization of land. Budgetary approval has been received and in the spring of 2018, the Independent Contractor for Storey County and the Assessor will begin the process of classifying each parcel and identifying land characteristics for adjustment and valuation throughout the county. The Assessor and contractor will be working together to ensure proper identification, classification, equalization and valuation of all parcels throughout the county.

**Appraisal Records:** It was directed, during the last Ratio Study, that the Assessor put procedures in place with the contracted appraiser to receive copies of all valuation and support documentation for any improvements, land and adjustments to value so as to ensure full compliance with *NAC 361.146*. This has been done. All property has been entered and calculated in the ADS system and copies of all records are now available within the Assessor's Office.

**Personal Property:** Fifteen accounts with 146 records were examined. After adjusting for outliers caused by rounding, there is one valid outlier within the commercial accounts, resulting from the assignment of an incorrect life to one item. The resulting outlier is 37.25%, which is just out of ratio.

## FINDINGS AND RECOMMENDATIONS

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### **Finding No. ST 2018-01**

#### **Criteria**

The calculation of the cost of replacement of an improvement must be calculated in accordance with *NAC 361.128(1)* which states that the standards and modifiers of local costs, published in the version of the *Commercial Cost Handbook, Marshall Valuation Service, Commercial Estimator* software adopted by reference pursuant to *NAC 361.1177* as of January 1 of the year immediately preceding the lien date for the current year, must be utilized.

#### **Condition**

Local multipliers reflect local cost conditions, are based on weighted labor and material costs, which include local sales taxes, and are designed to adjust the basic costs to each locality. Storey County uses the default cost multipliers from the *Marshall Valuation Service, Commercial Estimator* software for Sparks when valuing commercial properties in the northern portion of the county known as the Industrial Area within the McCarran zip code.

#### **Cause**

The commercial multipliers within the McCarran zip code are defaulting incorrectly when compared to the M&S Commercial Manual. The default also results in a Climate 3 adjustment for heating and cooling vs. the Climate 2 designated for this area, found in the Marshall and Swift Commercial Valuation Book, further increasing the value.

#### **Effect**

The default multipliers combined with the Climate Code 3 resulted in values as much as 13% higher, depending on the building class, when compared to the M&S costing manual's stated multiplier for the Sparks area. There are no multipliers in the manual at these percentages throughout the state, so it is unknown where the M&S program is getting them from. Previous years within the ADS system shows the same issue on commercial properties. The Assessor contacted ADS who verified that the tables provided by M&S were loaded correctly into the ADS system. When M&S was contacted, the Assessor was told that the defaults were correct and to disregard what the book multipliers state. Further investigation into the default multipliers revealed the same inconsistencies in the Reno, Sparks, and Lake Tahoe areas with Lake Tahoe having the largest disparity.

## **Recommendation**

The Department is attempting to resolve this issue with M&S. Until resolved, the department recommends utilizing the “Category” field, in ADS, within the *Marshall Valuation Service, Commercial Estimator* software program’s General Information page, to query all commercial buildings, in this area, by their building class and manually apply a hard multiplier override for each of the building classes prior to annual re-costing.