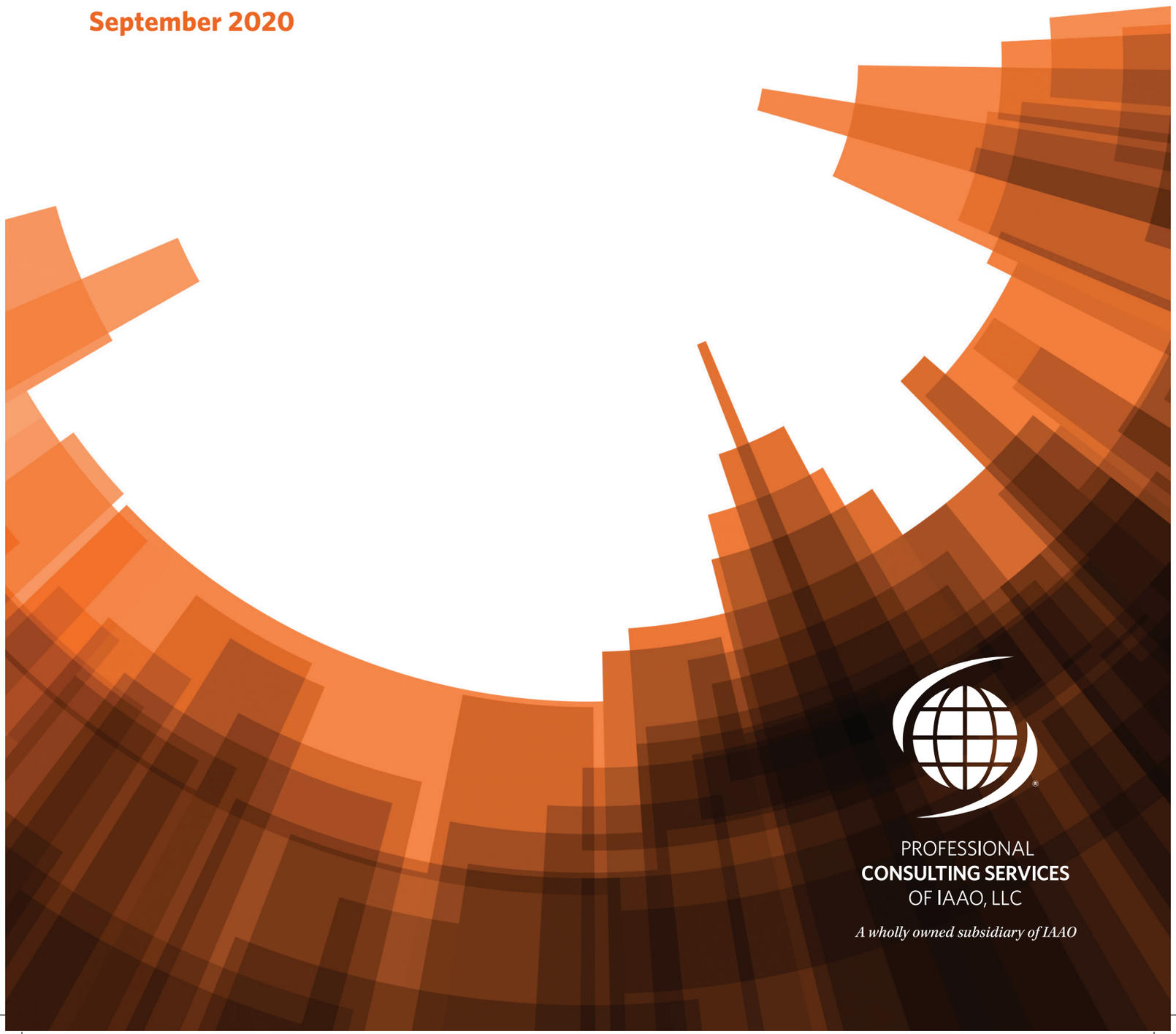
COMMERCIAL SALES RATIO STUDY

of Cook County, Illinois

September 2020



PROFESSIONAL
CONSULTING SERVICES
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ABOUT
PROFESSIONAL CONSULTING SERVICES OF IAAO, LLC

Professional Consulting Services of IAAO, LLC (PCSIAAO)provides professional consulting worldwide, based on a deep and objective understanding of the assessment challenges confronting property valuation and tax practitioners. PCSIAAO is a wholly owned subsidiary of the International Association of Assessing Officers (IAAO).

The IAAO is a nonprofit, educational organization founded in 1934. Its mission is to promote innovation and excellence in property appraisal and property tax policy and administration through professional development, education, research, and professional consulting service assistance. Its nearly 9,000 members are government officials and others interested in property valuation and assessment administration. All IAAO members subscribe to IAAO's Code of Ethics and Standards of Professional Practice and to the Uniform Standards of Professional Appraisal Practice (USPAP). The IAAO is the primary publisher, educator, and leader of standards in the field of property tax assessment. As a standard-setting organization, the IAAO has published 15 standards aimed at improving assessment practices. As an educator, the IAAO has established a curriculum of 30 courses and 28 workshops to supplement university-level and professional training for individuals interested in pursuing a career in property valuation and tax administration. We offer the only comprehensive program of mass appraisal courses in the world. In addition, we offer special seminars and an international conference on assessment administration annually.

IAAO offers 5 designations: a generalist designation requiring demonstrated competence in all areas of assessment—Certified Assessment Evaluator (CAE)—and 5 specialist designations: Mass Appraisal Specialist (MAS), Residential Evaluation Specialist (RES), Cadastral Mapping Specialist (CMS), Personal Property Specialist (PPS), and Assessment Administration Specialist (AAS).

For more than 20 years, IAAO has established voluntary, objective standards for the improvement of assessment practices and conducted a research and technical services program to help jurisdictions attain these standards. Professional consulting services are offered in a number of areas and by means of a variety of arrangements. Our most common engagement is to perform an evaluation of assessment practices within a specific jurisdiction. Our services are provided either on a time-and-materials or fixed-price basis, as the client may prefer, and are rendered by a team of experts chosen to meet the specific requirements of the assignment.

IAAO is an independent association not affiliated with any vendor, company, or firm in the private sector or any other association not in the assessment field. IAAO does not undertake professional consulting services projects for taxpayers.

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INTRODUCTION

Ratio studies, according to the International Association of Assessing Officers, are the most important performance analysis tool available to governments when it comes to inspecting assessments for inequity. The ratio study provides assessors with statistical tests to identify potential inaccuracies and inconsistencies in valuations used for *ad valorem* property tax purposes. Ultimately, these tests help assessors promote fair and equitable property tax assessments for all property owners.

Property Tax Assessment Equity

To illustrate the concept of assessment equity in a simple manner, let us consider an example. In the town of Bedrock, part of the city budget used to conduct necessary services such as trash collection, schools, and road maintenance is financed through a real estate property tax. The law states that each person who owns land or a building (a house, a restaurant, a warehouse, etc.) within Bedrock must pay an annual tax that is based on their property's current value, i.e. what it would likely sell for in the current market. Each year, this value is determined by the town's real estate assessment office, using a group of experienced appraisers, analysts, and technical staff.

In order to measure the accuracy of their valuation estimates, the office analyzes recent market sales within Bedrock and compares the actual price of each property against its *estimated* value (i.e. its assessed value). By dividing the assessed value by the *actual* selling price—what is referred to in the assessment industry as the "assessment-to-sale-price ratio" or just "ratio" — the office is able to determine whether or not they over- or under-estimated a property's market value. For example, consider a property that is assessed at $100,000. If the property sells for $200,000, its ratio would be **0.5** ($100,000 divided by $200,000) and it would be under-assessed. If the property, however, only sells for $50,000, its ratio would be **2.0** ($100,000 divided by $50,000) and it would be over-assessed. The detailed analysis that utilizes statistical measures to identify assessment inequities is referred to as a "ratio study".

The IAAO Standard on Ratio Studies states that properties should be assessed at 100% of market value (a ratio equal to 1.0 or 100%), but may be assessed between 90% and 110% of market value (a ratio between .90 and 1.10). To illustrate, a property that has a market value of $100,000 should be assessed at $100,000, but assessed values between $90,000 and $110,000 are acceptable. The **median ratio** is the middle ratio of a listing of ratios based on their value. It is useful in ratio studies because it is not heavily influenced by outliers.

Assessment inequity exists when patterns of relative under- or over-assessing emerge. Assessors study these patterns of inequity to identify where assessment accuracy may be improved. **Horizontal inequity** refers to inconsistent ratios across classifications (e.g. property types, neighborhoods, construction time-periods) or across seemingly similar properties. Assessors utilize a statistic called the **coefficient of dispersion (COD)** to effectively measure how "spread out" assessed levels are. The COD is calculated around the median assessment ratio and is defined by the IAAO as the average percentage deviation of the ratios from the median ratio. This statistic helps assessors evaluate the consistency of their work, as lower CODs indicate more consistent, equitable valuations. Larger CODs indicate a higher variation and less equitable valuations. According to IAAO's Standard on Ratio Studies, COD values for income-producing properties (e.g. retail, office buildings) in a large jurisdiction such as Cook County should fall between 5% and 15%.

Vertical inequity refers to inconsistent ratios across properties of different values. The two types of vertical inequity assessors test for are **regressivity**—when higher-value properties enjoy relatively lower ratios—and **progressivity**—when lower-value properties receive the benefit. The **price-related differential (PRD)** is a statistical metric that tests assessments for evidence of vertical inequity. IAAO's Standard on Ratio Studies states that an acceptable PRD value lies between .98 and 1.03. PRD values above this range suggest assessment regressivity, while values below suggest assessment progressivity.

Analysis

Analysis was performed on 1,643 arm's-length, commercial (income-producing) sales that transferred on the open market during 2018. The classes of the commercial sales included:

- 3-14: Two-or-three-story, non-fireproof building with corridor apartment or California type apartments, no corridors exterior entrance
- 3-15: Two-or-three-story, non-fireproof corridor apartments or California type apartments, interior entrance
- 3-18: Mixed-use commercial/residential building with apartments and commercial area totaling seven units or more with a square-foot area of over 20,000 square feet
- 3-91: Apartment building over three stories, seven or more units
- 3-99: Rental condominium
- 5-17: One-story commercial building
- 5-22: One-story, non-fireproof public garage
- 5-23: Gasoline station
- 5-28: Bank building
- 5-29: Motel
- 5-31: Shopping center
- 5-89: Industrial condominium unit
- 5-90: Commercial minor improvement
- 5-91: Commercial building over three stories
- 5-92: Two-or-three-story building containing part or all retail and/or commercial space
- 5-93: Industrial building
- 5-97: Special commercial structure
- 5-99: Commercial condominium unit
- 6-63: Industrial building

All sales were validated with respect to accuracy and arm's-length status by the Cook County Assessor's Office (CCAO). Assuming no major differences exist between sold properties and unsold properties, this sample size is sufficiently large enough to draw reliable inferences about the population of commercial properties within Cook County (the formulas and descriptions of statistical tests used, as well as additional sampling considerations, are provided below under **Statistical Metrics**).

Because a ratio study sample with fewer than five sales tends to have exceptionally poor reliability, only those classifications (e.g. neighborhoods, property classes) with at least five sales are reported in the maps and tables of this report. No sales were omitted from county-level analysis.

FINDINGS

Sales Count	Median Ratio – C.I. Lower Bound (95%)	Median Ratio	Median Ratio – C.I. Upper Bound (95%)	COD	PRD
1,643	0.59	0.61	0.62	52.11%	1.32

With respect to vertical and horizontal equity, the 2018 commercial assessed values in Cook County fall outside of the acceptability thresholds set forth by IAAO's *Standard on Ratio Studies*.[1] Major findings include:

- The county-wide median assessment ratio (.61) falls considerably below the IAAO-recommended target range (.90 - 1.10). Fluctuating median ratios indicate that commercial property owners are not paying taxes on equitable percentages of their property's market value. Several extreme median estimates suggest that commercial assessments are as low as 25% of market value in some areas, and higher than 150% in others.
- The county-level COD (52.11%) is above the IAAO upper limit of 15%, suggesting that commercial assessments are not uniform and demonstrate horizontal inequity. COD values fluctuate, indicating that ratios – and ultimately assessed levels — vary by location and class. High COD levels suggest that for most locations, assessed levels are not consistent from property to property.
- The county-level PRD (1.32) is above the IAAO upper limit of 1.03, indicating that commercial assessments demonstrate vertical inequity and are highly regressive (favorable to higher-end properties). Inconsistent local PRD values suggest that assessments are more regressive (above 1.03) in some areas, and even progressive (below .98) in others. PRD also varies with respect to the class of the property.

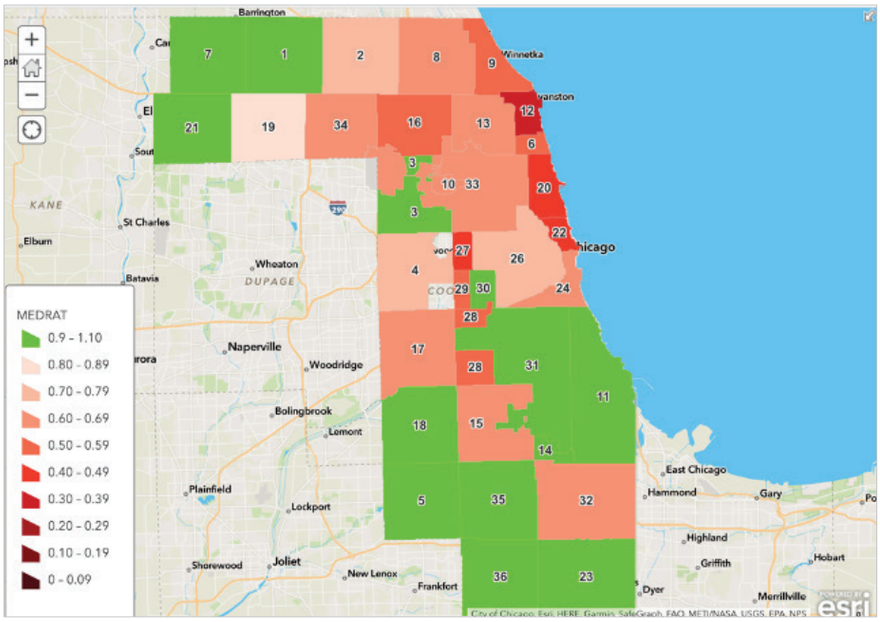
Once assessments are delineated by township, municipality, and school districts, it becomes evident that the level of equity and uniformity of 2018 commercial assessments varies significantly by location. The maps (pages 5 - 10) and tables (pages 14 - 20) in this report serve as diagnostics to identify where inequities exist. These areas should serve as a starting point for CCAO staff when reassessments begin.

Tri	Sales Count	Median Ratio – C.I. Lower Bound (95%)	Median Ratio	Median Ratio – C.I. Upper Bound (95%)	COD	PRD
City	937	0.50	0.52	0.54	55.76%	1.37
North	423	0.63	0.68	0.72	50.25%	1.28
South and West	283	0.67	0.71	0.76	45.75%	1.26

Results fluctuate slightly once disaggregated by tri. While still outside of acceptability thresholds set forth by IAAO,a higher median ratio (.71), as well as reduced COD (45.75%) and PRD (1.26) values, suggest that commercial assessments in the south are typically less under-valued, more uniform, and less regressive than assessments in the north and the city. Commercial assessments in the city are indicated to be more consistently under-valued, less uniform, and more regressive than assessments in the north or south.

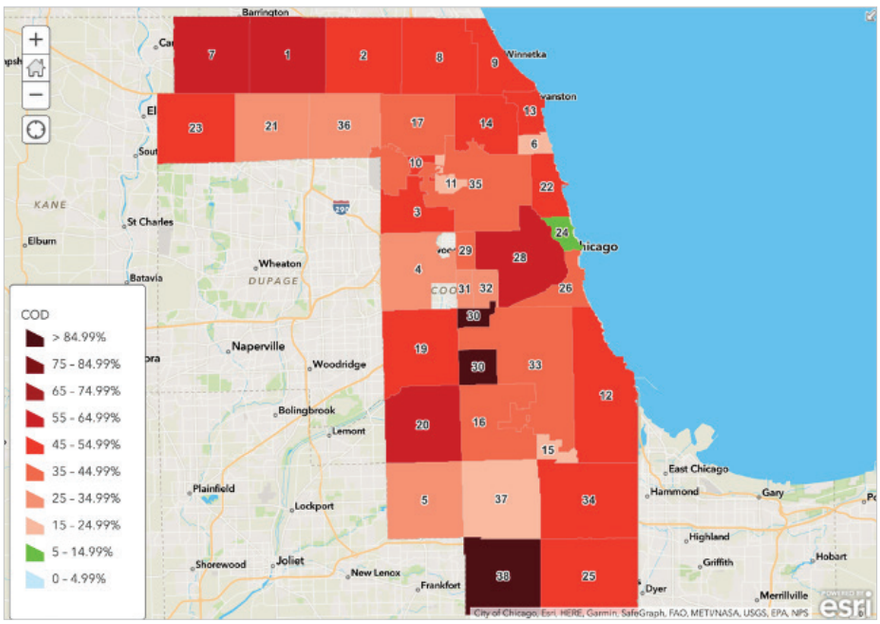
1. Detailed test results with corresponding area IDs are provided under Statistical Tables.
2. For median ratio maps, this includes areas with a confidence interval that overlaps the IAAO acceptability threshold of .90-1.10. Confidence intervals for each subclassification are provided under Statistical Tables.

2018 Median Ratio by Township



Numbers correspond with ID in Results by Township table on page 14.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 Coefficient of Dispersion (COD) by Township



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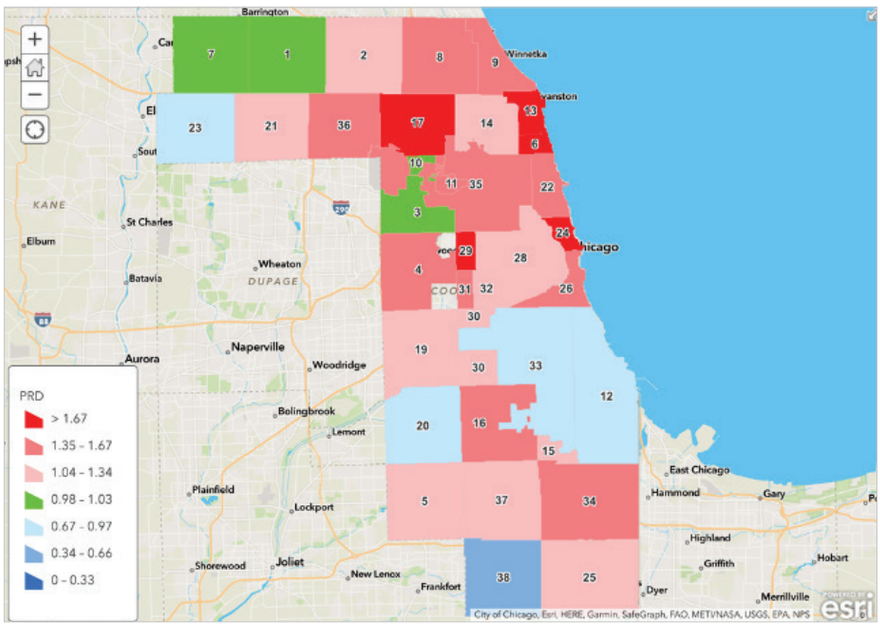
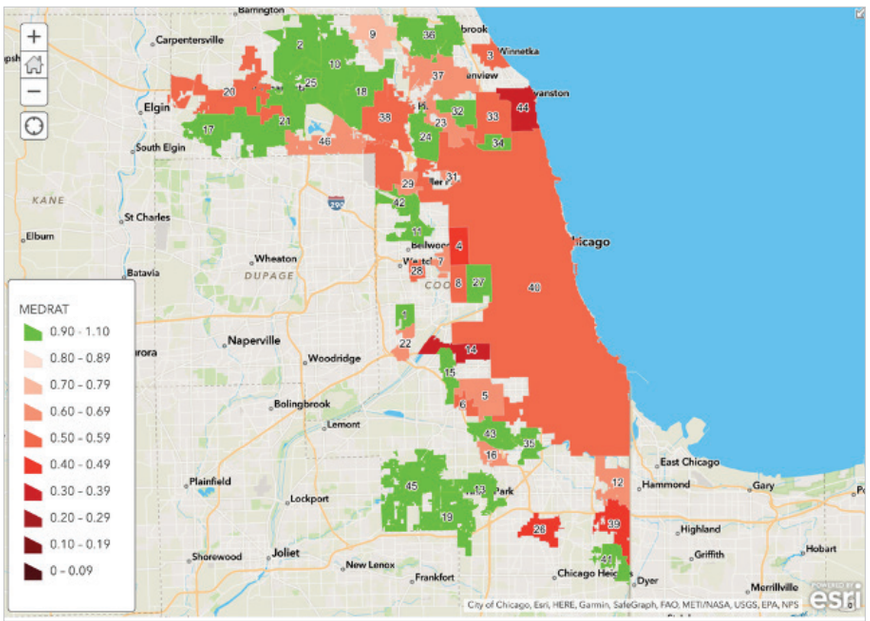
2018 Price-related Differential (PRD) by Township



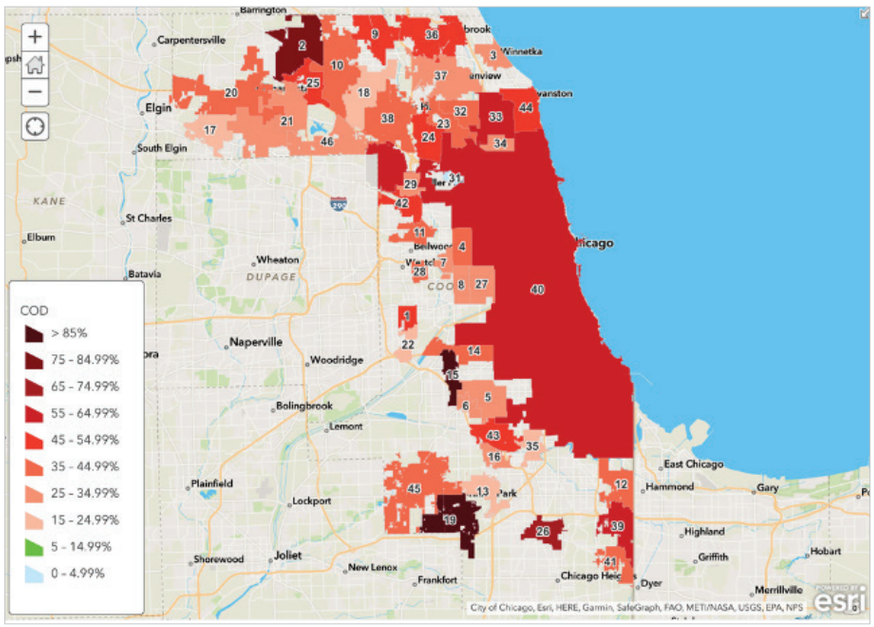
Numbers correspond with ID in Results by Township table on page 14.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 Median Ratio by Municipality



Numbers correspond with ID in Results by Municipality table on page 16.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 COD by Municipality



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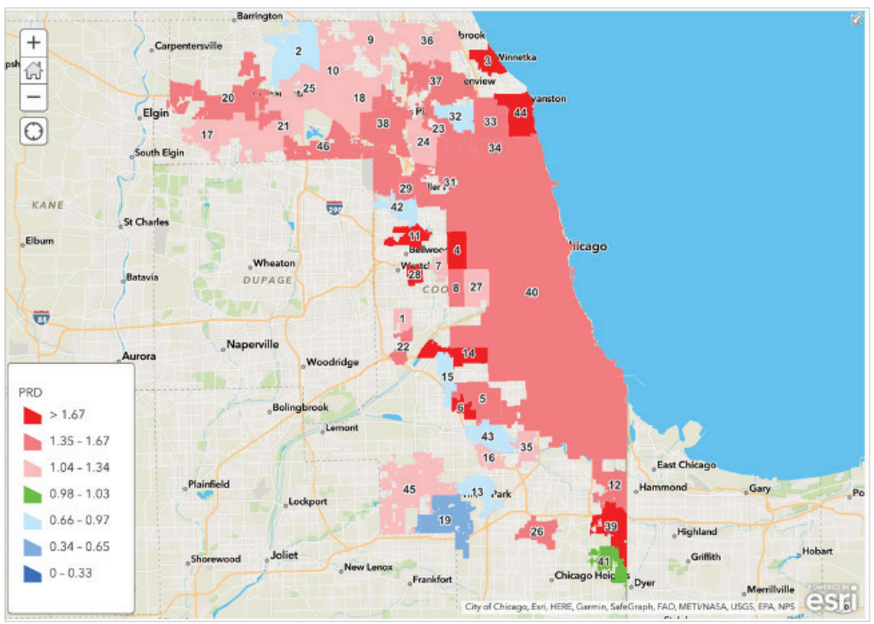
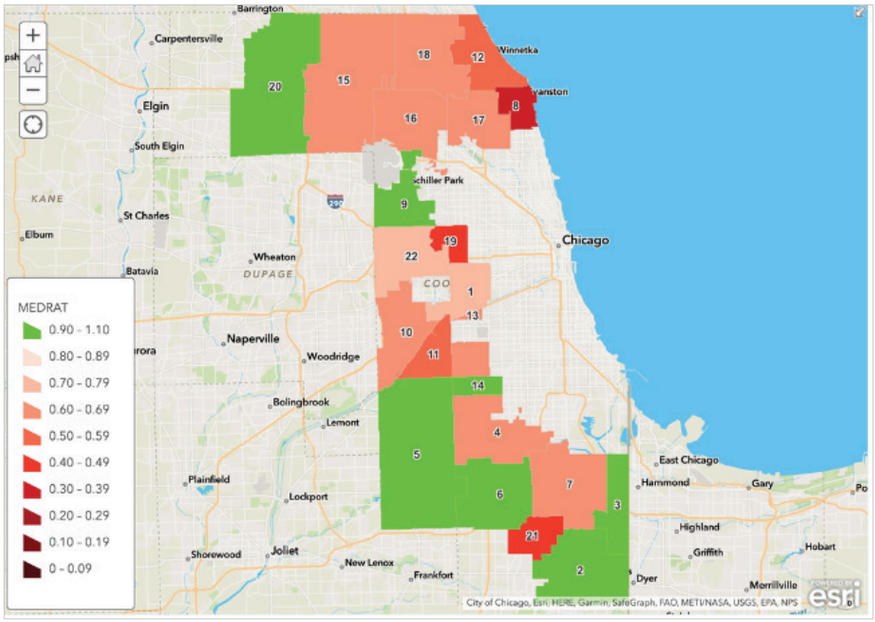
2018 PRD by Municipality



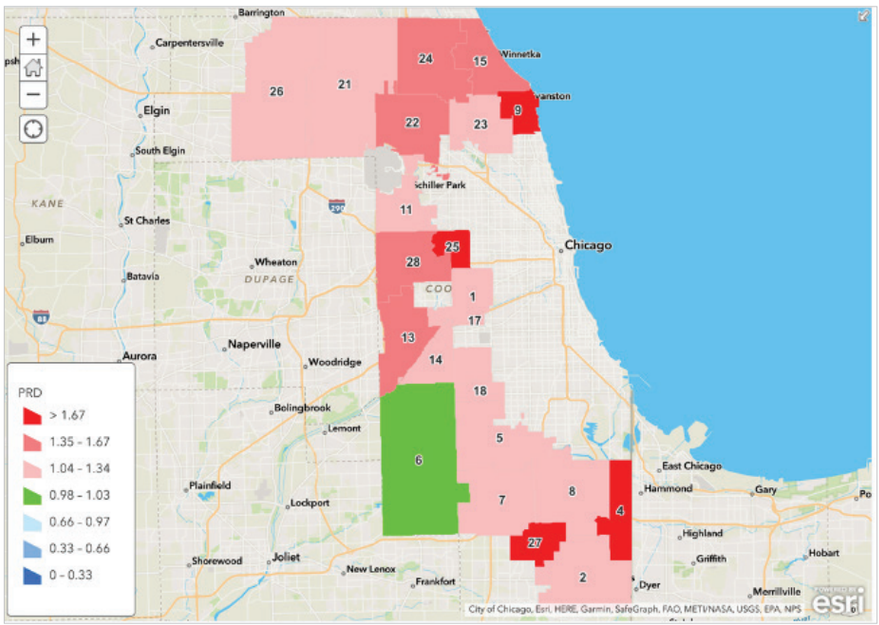
Numbers correspond with ID in Results by Municipality table on page 16.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 Median Ratio by High School Tax District



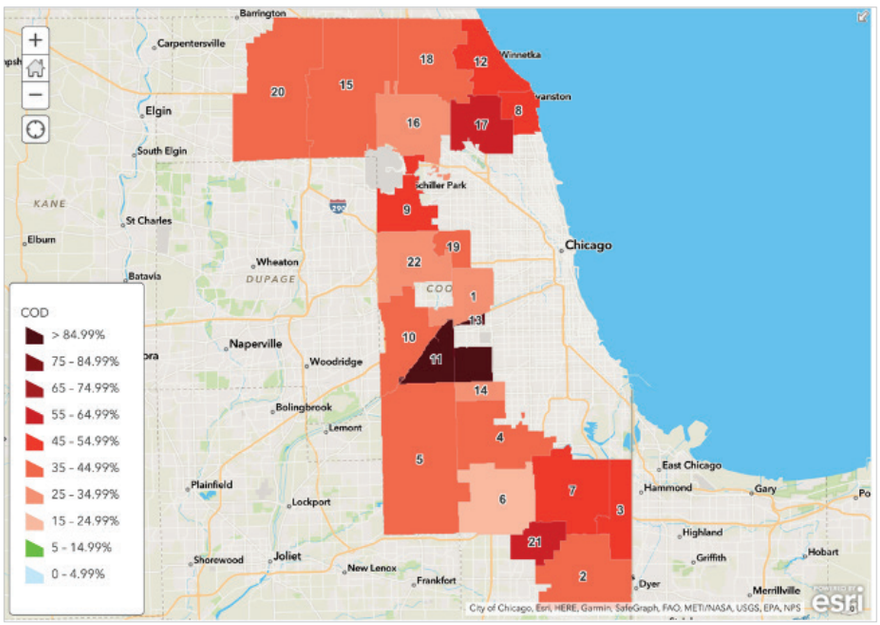
Numbers correspond with ID in Results by High School Tax District table on page 17.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 PRD by High School Tax District



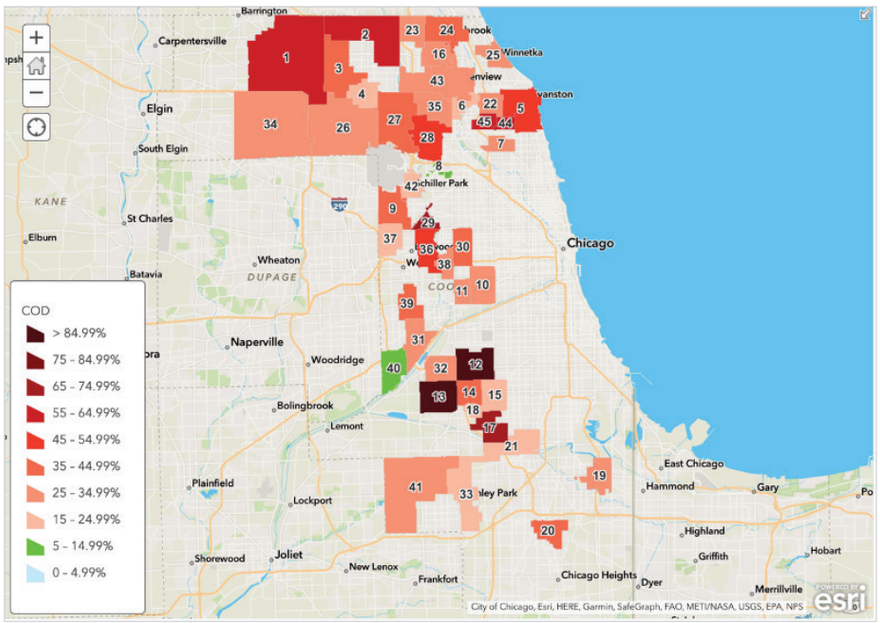
Numbers correspond with ID in Results by High School Tax District table on page 17.
Green areas indicate compliance with IAAO's *Standard on Ratio Studiess*.

2018 COD by High School Tax District



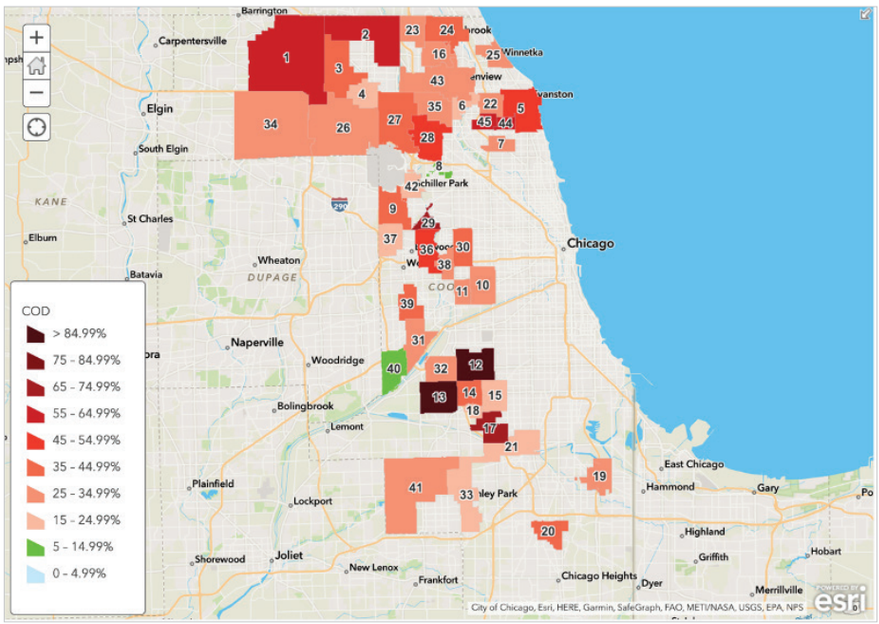
Numbers correspond with ID in Results by High School Tax District table on page 17.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 Median Ratio by Elementary School Tax District



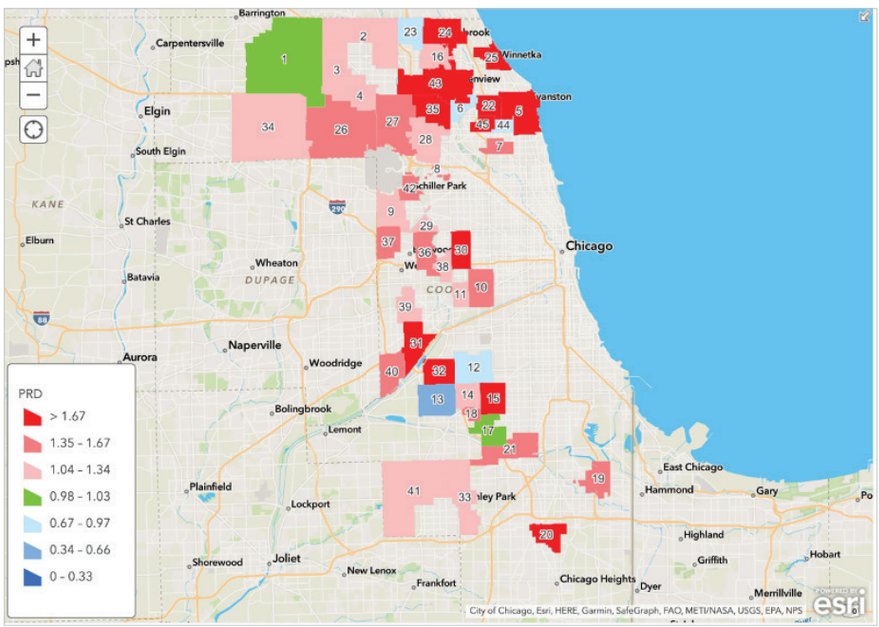
Numbers correspond with ID in Results by Elementary School Tax District table on page 18.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 COD by Elementary School Tax District



Numbers correspond with ID in Results by Elementary School Tax District table on page 18.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

2018 PRD by Elementary School Tax District



Numbers correspond with ID in Results by Elementary School Tax District table on page 18.
Green areas indicate compliance with IAAO's *Standard on Ratio Studies*.

STATISTICAL METRICS

Median Ratio

From page 13 of IAAO's *Standard on Ratio Studies:*

> ***"5.3.1 Median:** The median ratio is the middle ratio when the ratios are arrayed in order of magnitude. If there is an even number of ratios, the median is the average of the two middle ratios. The median always divides the data into two equal parts and is less affected by extreme ratios than the other measures of central tendency. Because of these properties, the median is the generally preferred measure of central tendency for evaluating overall appraisal level, determining reappraisal priorities, or evaluating the need for a reappraisal."*

From page 29 of IAAO's *Standard on Ratio Studies*:

> ***"6.5 Measures of Reliability:** It is good practice to calculate measures of reliability whenever the results of a ratio study are used for equalization. Measures of reliability will indicate whether there is a desired degree of confidence that a given level of appraisal has not been achieved. The most commonly used measure of ratio study sample reliability is the confidence interval. This interval brackets the unknown population parameter for any sample statistic with a specified (chosen) degree of confidence."*

Coefficient of Dispersion (COD)

From pages 13-14 of IAAO's *Standard on Ratio Studies:*

> ***"5.4.1 Coefficient of Dispersion:** The most generally useful measure of variability or uniformity is the COD. The COD measures the average percentage deviation of the ratios from the median ratio and is calculated by the following steps:*
>
> 1. *subtract the median from each ratio*
> 2. *take the absolute value of the calculated differences*
> 3. *sum the absolute differences*
> 4. *divide by the number of ratios to obtain the average absolute deviation*
> 5. *divide by the median*
> 6. *multiply by 100*
>
> *The COD has the desirable feature that its interpretation does not depend on the assumption that the ratios are normally distributed. In general, more than half the ratios fall within one COD of the median. The COD should not be calculated about the mean ratio."*

From page 18 of IAAO's *Standard on Ratio Studies:*

> ***"9.2 Appraisal Uniformity:*** *Assuming the existence of an adequate and sufficiently representative sample, if the uniformity of appraisal is unacceptable, model recalibration and/or reappraisal should be undertaken. It is important to recognize that the COD is a point estimate and, especially for small samples, should not be accepted as proof of assessment uniformity problems. Proof can be provided by recognized statistical tests, including bootstrap confidence intervals. In unusually homogeneous strata, low CODs can be anticipated. In all other cases, CODs less than 5 percent should be considered suspect and possibly indicative of nonrepresentative samples or selective reappraisal of selling parcels."*

From page 12 of IAAO's *Standard on Ratio Studies:*

> *"Although the coefficient of dispersion (COD) is affected by extreme ratios, it is affected to a lesser extent than the coefficient of variation (COV) and the mean."*

From page 19 of IAAO's *Standard on Ratio Studies:*

> ***"9.2.3 Uniformity among Income-Producing Properties:*** *The COD should be between 5.0 and 20.0. In larger, urban market areas, it should be between 5.0 and 15.0."*

Price-related Differential (PRD)

From page 14 of IAAO's *Standard on Ratio Studies:*

> ***"5.6 Vertical Inequities:*** *The measures of variability discussed in section 5.4 relate to "horizontal," or random, dispersion among the ratios in a stratum, regardless of the value of individual parcels. Another form of inequity can be systematic differences in the appraisal of low- and high-value properties, termed "vertical" inequities. When low-value properties are appraised at greater percentages of market value than high-value properties, assessment regressivity is indicated. When low-value properties are appraised at smaller percentages of market value than high-value properties, assessment progressivity is the result. Appraisals made for tax purposes of course should be neither regressive nor progressive.*
>
> *An index statistic for measuring vertical equity is the PRD, which is calculated by dividing the mean ratio by the weighted mean ratio. This statistic should be close to 1.00. Measures considerably above 1.00 tend to indicate assessment regressivity; measures below 1.00 suggest assessment progressivity. When samples are small or the weighted mean is heavily influenced by several extreme sales prices, the PRD may not be a sufficiently reliable measure of vertical inequities. A scatter plot of ratios versus appraised values or sale prices is a useful diagnostic tool. A downward (or upward) trend to the data indicates systematic regressivity (or progressivity). Assuming representativeness, high PRDs generally indicate low appraisals on high-priced properties. If not sufficiently representative, extreme sales prices can be excluded in calculation of the PRD. Similarly, when samples are very large, the PRD may be too insensitive to show small pockets in which there is significant vertical inequity."*

From page 19 of IAAO's *Standard on Ratio Studies:*

> *"PRDs should be between 0.98 and 1.03. The reason this range is not centered on 1.00 relates to an inherent upward bias in the arithmetic mean (numerator in the PRD) that does not equally affect the weighted mean (denominator in the PRD). When samples are small, have high dispersion, or include properties with extreme values, the PRD may not provide an accurate indication of assessment regressivity or progressivity."*

From page 12 of IAAO's *Standard on Ratio Studies:*

> *"The weighted mean and price-related differential (PRD) are sensitive to sales with high prices even if the ratios on higher priced sales do not appear unusual relative to other sales."*

From page 14 of IAAO's *Standard on Ratio Studies:*

> *"When samples are small or the weighted mean is heavily influenced by several extreme sales prices, the PRD may not be a sufficiently reliable measure of vertical inequities. Assuming representativeness, high PRDs generally indicate low appraisals on high-priced properties. If not sufficiently representative, extreme sales prices can be excluded in calculation of the PRD. Similarly, when samples are very large, the PRD may be too insensitive to show small pockets in which there is significant vertical inequity."*

STATISTICAL TABLES

Because a ratio study sample with fewer than five sales tends to have exceptionally poor reliability, only those classifications (e.g. neighborhoods, property classes) with at least five are reported below. Median ratios are reported using a 95% confidence interval. If intervals overlap with the target range of 0.90 - 1.10, compliance with respect to the target assessment level is met.

2018 Results by Township

ID	Township	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
1	PALATINE	35	0.69	0.89	1.09	Yes	62.75%	No	0.99	Yes
2	WHEELING	40	0.61	0.74	0.87	No	54.34%	No	1.18	No
3	LEYDEN	42	0.75	0.90	1.04	Yes	49.38%	No	1.02	Yes
4	PROVISO	34	0.62	0.74	0.85	No	31.18%	No	1.37	No
5	ORLAND	20	0.66	0.83	0.99	Yes	33.94%	No	1.14	No
6	ROGERS PARK	34	0.47	0.50	0.54	No	19.19%	No	1.85	No
7	BARRINGTON	7	0.38	0.81	1.24	Yes	56.44%	No	1.00	Yes
8	NORTHFIELD	30	0.52	0.63	0.75	No	45.80%	No	1.38	No
9	NEW TRIER	10	0.38	0.58	0.79	No	46.09%	No	1.48	No
10	NORWOOD PARK	20	0.66	0.69	0.72	No	17.18%	No	1.50	No
11	HYDE PARK	110	0.78	0.85	0.91	Yes	53.53%	No	0.98	No
12	EVANSTON	24	0.33	0.39	0.45	No	45.91%	No	2.09	No
13	NILES	42	0.52	0.65	0.78	No	53.69%	No	1.28	No
14	CALUMET	6	0.57	0.74	0.91	Yes	21.71%	No	1.29	No
15	WORTH	40	0.54	0.63	0.71	No	41.40%	No	1.35	No
16	MAINE	41	0.44	0.51	0.58	No	42.07%	No	1.70	No
17	LYONS	41	0.56	0.64	0.72	No	49.00%	No	1.32	No
18	PALOS	8	0.74	0.99	1.24	Yes	57.74%	No	0.72	No

2018 Results by Township (continued)

ID	Township	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
19	SCHAUMBURG	49	0.71	0.80	0.89	No	27.63%	No	1.25	No
20	LAKE VIEW	70	0.44	0.50	0.56	No	53.71%	No	1.55	No
21	HANOVER	18	0.74	0.97	1.20	Yes	50.13%	No	0.85	No
22	NORTH	304	0.50	0.50	0.50	No	5.55%	Yes	1.97	No
23	BLOOM	14	0.48	0.89	1.30	Yes	46.73%	No	1.09	No
24	SOUTH	38	0.55	0.64	0.74	No	35.48%	No	1.42	No
25	WORTH	40	0.54	0.63	0.71	No	41.40%	No	1.35	No
26	WEST	135	0.64	0.72	0.81	No	62.47%	No	1.22	No
27	OAK PARK	16	0.32	0.43	0.53	No	44.71%	No	1.89	No
28	STICKNEY	10	0.23	0.51	0.78	No	104.10%	No	1.26	No
29	BERWYN	11	0.51	0.59	0.67	No	29.23%	No	1.44	No
30	CICERO	19	0.66	0.79	0.92	Yes	28.86%	No	1.27	No
31	LAKE	102	0.90	1.00	1.10	Yes	41.31%	No	0.88	No
32	THORNTON	31	0.45	0.61	0.77	No	52.28%	No	1.41	No
33	JEFFERSON	144	0.59	0.64	0.68	No	35.14%	No	1.43	No
34	ELK GROVE	65	0.58	0.67	0.76	No	32.47%	No	1.50	No
35	BREMEN	21	0.82	0.94	1.07	Yes	23.15%	No	1.15	No
36	RICH	5	0.77	1.00	1.23	Yes	103.83%	No	0.59	No

2018 Results by Municipality

ID	Municipality	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
1	La Grange	8	0.44	0.73	1.02	Yes	51.74%	No	1.10	No
2	Palatine	19	0.58	0.89	1.19	Yes	81.93%	No	0.89	No
3	Winnetka	5	0.35	0.57	0.80	No	29.36%	**No**	1.88	No
4	Oak Park	16	0.32	0.43	0.53	No	44.71%	No	1.89	No
5	Oak Lawn	19	0.58	0.66	0.75	No	29.69%	No	1.47	No
6	Chicago Ridge	5	0.42	0.56	0.70	No	26.39%	No	1.79	No
7	Forest Park	8	0.47	0.66	0.86	No	29.57%	No	1.33	No
8	Berwyn	11	0.51	0.59	0.67	No	29.23%	No	1.44	No
9	Wheeling	18	0.52	0.71	0.89	No	52.72%	No	1.24	No
10	Arlington Heights	19	0.66	0.86	1.05	Yes	35.32%	No	1.30	No
11	Melrose Park	7	0.39	0.69	0.99	Yes	40.17%	No	1.74	No
12	Calumet City	8	0.42	0.62	0.81	No	41.13%	No	1.59	No
13	Oak Forest	5	0.82	1.03	1.25	Yes	21.94%	No	0.89	No
14	Bedford Park	5	0.20	0.35	0.50	No	42.26%	No	2.13	No
15	Bridgeview	8	0.45	0.76	1.08	Yes	86.16%	No	0.82	No
16	Crestwood	7	0.44	0.66	0.87	No	25.85%	No	1.31	No
17	Streamwood	6	0.81	0.92	1.03	Yes	19.63%	No	1.13	No
18	Mount Prospect	15	0.71	0.82	0.94	Yes	23.57%	No	1.31	No
19	Tinley Park	5	0.83	1.01	1.19	Yes	96.36%	No	0.54	No
20	Hoffman Estates	9	0.46	0.57	0.67	No	41.12%	No	1.41	No
21	Schaumburg	42	0.73	0.82	0.91	Yes	25.01%	No	1.24	No
22	Countryside	9	0.52	0.61	0.70	No	23.85%	No	1.58	No
23	Niles	9	0.39	0.61	0.83	No	38.13%	No	1.51	No
24	Park Ridge	15	0.52	0.77	1.02	Yes	54.56%	No	1.23	No
25	Rolling Meadows	14	0.39	0.70	1.00	Yes	53.44%	No	1.23	No
26	Homewood	7	0.17	0.43	0.69	No	69.41%	No	1.62	No
27	Cicero	19	0.66	0.79	0.92	Yes	28.86%	No	1.27	No
28	Broadview	7	0.36	0.57	0.78	No	38.78%	No	1.82	No
29	Schiller Park	12	0.54	0.68	0.82	No	26.24%	No	1.52	No
30	Bensenville	6	0.65	0.90	1.14	Yes	38.09%	No	1.09	No
31	Harwood Heights	14	0.67	0.69	0.71	No	4.73%	No	1.46	No
32	Morton Grove	5	0.46	1.00	1.54	Yes	39.10%	No	0.86	No
33	Skokie	25	0.48	0.57	0.67	No	60.72%	No	1.34	No
34	Lincolnwood	7	0.43	0.66	0.90	Yes	32.93%	No	1.55	No
35	Blue Island	8	0.62	0.77	0.92	Yes	16.67%	No	1.28	No
36	Northbrook	15	0.47	0.73	0.99	Yes	51.94%	No	1.14	No
37	Glenview	15	0.50	0.63	0.77	No	25.78%	No	1.64	No
38	Des Plaines	24	0.43	0.53	0.62	No	41.56%	No	1.60	No
39	Lansing	6	0.13	0.45	0.77	No	59.26%	No	1.72	No
40	Chicago	937	0.50	0.52	0.54	No	55.76%	No	1.37	No
41	Lynwood	5	0.33	1.00	1.67	Yes	43.18%	No	1.00	Yes
42	Franklin Park	9	0.52	1.01	1.49	Yes	52.57%	No	0.93	No
43	Alsip	7	0.60	1.00	1.40	Yes	53.29%	No	0.89	No
44	Evanston	24	0.33	0.39	0.45	No	45.91%	No	2.09	No
45	Orland Park	19	0.61	0.77	0.92	Yes	35.41%	No	1.17	No
46	Elk Grove Village	48	0.57	0.66	0.75	No	32.22%	No	1.55	No

2018 Results by High School Tax District

ID	High School Tax District	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
1	BERWYN CICERO STICKNEY HIGH SCHOOL 201	35	0.62	0.73	0.84	No	34.93%	No	1.34	No
2	BLOOM TOWNSHIP HIGH SCHOOL 206	12	0.48	0.89	1.31	Yes	43.15%	No	1.07	No
3	THORNTON TWP FRACTIONAL HIGH SCHOOL 215	6	0.20	0.55	0.90	Yes	50.15%	No	1.67	No
4	COMMUNITY HIGH SCHOOL 218	40	0.57	0.64	0.72	No	35.58%	No	1.34	No
5	CONSOLIDATED HIGH SCHOOL 230	30	0.75	0.87	0.99	Yes	41.05%	No	1.00	Yes
6	COMMUNITY HIGH SCHOOL 228	12	0.91	1.00	1.09	Yes	20.64%	No	1.04	No
7	THORNTON TOWNSHIP HIGH SCHOOL 205	20	0.49	0.69	0.88	No	51.13%	No	1.26	No
8	EVANSTON TOWNSHIP HIGH SCHOOL 202	25	0.32	0.40	0.47	No	46.74%	No	2.05	No
9	COMMUNITY HIGH SCHOOL 212	35	0.64	0.79	0.95	Yes	51.41%	No	1.13	No
10	LYONS TOWNSHIP HIGH SCHOOL 204	29	0.56	0.64	0.73	No	36.19%	No	1.41	No
11	COMMUNITY HIGH SCHOOL 217	11	0.37	0.53	0.70	No	86.53%	No	1.23	No
12	NEW TRIER TOWNSHIP HIGH SCHOOL 203	10	0.38	0.58	0.79	No	46.09%	No	1.48	No
13	COMMUNITY HIGH SCHOOL 220	8	0.43	0.62	0.82	No	91.48%	No	1.05	No
14	COMMUNITY HIGH SCHOOL 229	10	0.56	0.75	0.94	Yes	34.27%	No	1.35	No
15	ARLINGTON HTS TOWNSHIP HIGH SCHOOL 214	105	0.59	0.67	0.76	No	43.36%	No	1.37	No
16	MAINE TOWNSHIP HIGH SCHOOL 207	62	0.60	0.66	0.72	No	34.86%	No	1.47	No
17	COMMUNITY HIGH SCHOOL 219	40	0.50	0.64	0.77	No	56.98%	No	1.27	No
18	NORTHFIELD TOWNSHIP HIGH SCHOOL 225	31	0.55	0.66	0.77	No	43.33%	No	1.38	No
19	CONSOLIDATED HIGH SCHOOL 200	18	0.36	0.43	0.50	No	42.09%	No	1.91	No
20	PALATINE TOWNSHIP HIGH SCHOOL 211	83	0.77	0.85	0.93	Yes	42.40%	No	1.11	No
21	HOMEWOOD FLOSSMOOR COMM HIGH SCHOOL 233	8	0.27	0.43	0.59	No	60.57%	No	1.68	No
22	PROVISO TOWNSHIP HIGH SCHOOL 209	30	0.59	0.71	0.84	No	32.79%	No	1.42	No

2018 Results by Elementary School Tax District

ID	Elementary School Tax District	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
1	SCHOOL DISTRICT CC 15	36	0.67	0.87	1.07	Yes	63.38%	No	1.00	Yes
2	SCHOOL DISTRICT CC 21	25	0.58	0.74	0.90	Yes	62.94%	No	1.08	No
3	SCHOOL DISTRICT 25	12	0.47	0.70	0.94	Yes	44.95%	No	1.32	No
4	SCHOOL DISTRICT 57	5	0.73	0.85	0.97	Yes	21.10%	No	1.22	No
5	SCHOOL DISTRICT 65	25	0.32	0.40	0.47	No	46.74%	No	2.05	No
6	SCHOOL DISTRICT 67	5	0.94	1.04	1.15	Yes	17.87%	No	0.86	No
7	SCHOOL DISTRICT 74	7	0.43	0.66	0.90	Yes	32.93%	No	1.55	No
8	SCHOOL DISTRICT 79	15	0.67	0.70	0.72	No	6.33%	Yes	1.43	No
9	SCHOOL DISTRICT 83	12	0.61	0.90	1.19	Yes	39.02%	No	1.14	No
10	SCHOOL DISTRICT 99	21	0.63	0.79	0.94	Yes	33.70%	No	1.37	No
11	SCHOOL DISTRICT 100	8	0.59	0.72	0.84	No	26.67%	No	1.34	No
12	SCHOOL DISTRICT 111	5	0.15	0.49	0.82	No	164.36%	No	0.91	No
13	SCHOOL DISTRICT 117	5	0.19	1.00	1.81	Yes	85.83%	No	0.61	No
14	SCHOOL DISTRICT 122	7	0.44	0.77	1.10	Yes	39.87%	No	1.29	No
15	SCHOOL DISTRICT 123	9	0.50	0.61	0.73	No	23.68%	No	1.72	No
16	SCHOOL DISTRICT 30	5	0.61	0.73	0.84	No	25.70%	No	1.26	No
17	SCHOOL DISTRICT 126	7	0.38	0.66	0.95	Yes	71.93%	No	0.99	Yes
18	SCHOOL DISTRICT 127 1/2	7	0.52	0.62	0.72	No	17.60%	No	1.54	No
19	SCHOOL DISTRICT 149	7	0.44	0.61	0.78	No	33.18%	No	1.42	No
20	SCHOOL DISTRICT 153	6	0.27	0.42	0.58	No	41.70%	No	2.10	No
21	SCHOOL DISTRICT 130	11	0.53	0.65	0.78	No	20.53%	No	1.36	No
22	SCHOOL DISTRICT 68	8	0.38	0.49	0.59	No	29.18%	No	2.31	No
23	SCHOOL DISTRICT 27	5	1.02	1.32	1.63	Yes	31.18%	No	0.76	No
24	SCHOOL DISTRICT 28	8	0.26	0.45	0.64	No	40.86%	No	1.85	No
25	SCHOOL DISTRICT 36	5	0.35	0.57	0.80	No	29.36%	No	1.88	No
26	SCHOOL DISTRICT CC 59	56	0.58	0.67	0.76	No	31.32%	No	1.53	No
27	SCHOOL DISTRICT CC 62	24	0.48	0.57	0.66	No	39.22%	No	1.57	No
28	SCHOOL DISTRICT CC 64	15	0.53	0.77	1.02	Yes	54.24%	No	1.22	No
29	SCHOOL DISTRICT 84 1/2	5	0.27	0.69	1.12	Yes	66.81%	No	1.31	No
30	SCHOOL DISTRICT 97	16	0.32	0.43	0.53	No	44.71%	No	1.89	No
31	SCHOOL DISTRICT 105	9	0.44	0.54	0.64	No	29.98%	No	1.74	No
32	SCHOOL DISTRICT 109	6	0.41	0.60	0.79	No	27.87%	No	1.78	No
33	SCHOOL DISTRICT CC 146	5	0.81	1.00	1.19	Yes	17.57%	No	1.06	No
34	SCHOOL DISTRICT CC 54	51	0.71	0.80	0.89	No	27.47%	No	1.25	No
35	SCHOOL DISTRICT 63	8	0.36	0.50	0.64	No	30.66%	No	1.93	No
36	SCHOOL DISTRICT 89	5	0.15	0.69	1.22	Yes	49.22%	No	1.56	No
37	SCHOOL DISTRICT 87	5	0.56	0.73	0.91	Yes	20.14%	No	1.66	No
38	SCHOOL DISTRICT 91	8	0.47	0.66	0.86	No	29.57%	No	1.33	No
39	SCHOOL DISTRICT 102	11	0.65	0.83	1.01	Yes	35.97%	No	1.10	No
40	SCHOOL DISTRICT 107	5	0.59	0.70	0.82	Yes	14.90%	No	1.61	No
41	SCHOOL DISTRICT 135	18	0.61	0.75	0.89	No	33.97%	No	1.20	No
42	SCHOOL DISTRICT 81	11	0.59	0.69	0.78	No	23.00%	No	1.44	No
43	SCHOOL DISTRICT C C 34	13	0.39	0.54	0.69	No	34.27%	No	1.72	No
44	SCHOOL DISTRICT 73 1/2	6	0.64	1.09	1.55	Yes	60.33%	No	0.73	No
45	SCHOOL DISTRICT 69	7	0.21	0.42	0.64	No	61.29%	No	1.68	No

2018 Results by Class

ID	Class	Sales Count	Median Ratio: C.I. Lower Bound (95%)	Median Ratio	Median Ratio: C.I. Upper Bound (95%)	Median Ratio: Standard Compliance	COD	COD: Standard Compliance	PRD	PRD: Standard Compliance
1	3-14: Two-or-three-story, non-fireproof building with corridor apartment or California type apartments, no corridors exterior entrance	89	0.64	0.72	0.80	No	50.86%	No	1.12	No
2	3-15: Two-or-three-story, non-fireproof corridor apartments or California type apartments, interior entrance	217	0.68	0.73	0.78	No	55.68%	No	1.12	No
3	3-18: Mixed-use commercial/ residential building with apartments and commercial area totaling seven units or more with a square-foot area of over 20,000 square feet	69	0.51	0.60	0.69	No	65.36%	No	1.23	No
4	3-91: Apartment building over three stories, seven or more units	18	0.38	0.44	0.51	No	25.98%	No	2.12	No
5	3-99: Rental condominium	339	0.50	0.50	0.50	No	6.27%	Yes	1.93	No
6	5-17: One-story commercial building	286	0.75	0.80	0.84	No	41.86%	No	1.21	No
7	5-22: One-story, non-fireproof public garage	32	0.61	0.72	0.84	No	36.11%	No	1.28	No
8	5-23: Gasoline station	31	0.61	0.72	0.84	No	46.50%	No	1.20	No
9	5-28: Bank building	14	0.36	0.53	0.69	No	48.31%	No	1.83	No
10	5-29: Motel	6	0.57	0.64	0.70	No	129.56%	No	0.72	No
11	5-31: Shopping center	9	0.49	0.89	1.28	Yes	96.30%	No	0.67	No
12	5-89: Industrial condominium unit	15	0.57	0.74	0.90	Yes	37.26%	No	1.14	No
13	5-90: Commercial minor improvement	19	0.29	0.45	0.61	No	55.84%	No	2.40	No
14	5-91: Commercial building over three stories	15	0.47	0.63	0.78	No	27.29%	No	1.45	No
15	5-92: Two-or-three-story building containing part or all retail and/or commercial space	60	0.62	0.72	0.82	No	46.48%	No	1.28	No
16	5-93: Industrial building	228	0.66	0.72	0.78	No	46.96%	No	1.26	No
17	5-97: Special commercial structure	40	0.49	0.62	0.74	No	76.78%	No	1.16	No
18	5-99: Commercial condominium unit	103	0.81	0.87	0.93	Yes	33.74%	No	1.11	No
19	6-63: Industrial building	21	0.28	0.32	0.35	No	24.93%	No	3.11	No

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