

Cook County Assessor's Office: 2018 Chicago Triad Assessment

Residential Sales Ratio Study

June 2019

Executive Summary

- In February 2018, the Cook County Board of Commissioners, the Assessor's Office and the Board of Review collectively agreed on four comprehensive goals that Cook County's end-to-end residential property assessment process must meet: Uniformity, Timeliness, Compliance and Transparency.
- This sales ratio study reports on the performance of the 2018 Chicago Triad assessment through the first three steps of the assessment process (Model, Notice and Assessor Final), focusing on Compliance and Uniformity goals. This report also constitutes an important step toward addressing the Transparency goal.
- There are three major findings from this sales ratio study:
 - Overall, the 2018 Chicago Triad assessment consistently misses Uniformity targets, and only meets the Compliance target after Assessor appeals. 2 of the 8 townships meet Compliance and Uniformity goals in 2018 at the Assessor Final step.
 - 2018 Assessor appeals made more and larger changes to property values than in 2015, with marginal or no improvement in assessment results compared to the Model and Notice steps. The Model step improved in 2018, resulting in relatively few changes in hand review. However, there were considerably more changes in Assessor appeals, and the reductions in property values were substantially larger than in 2015.
 - Still, even as the 2018 Chicago Triad assessment did not meet Uniformity targets, overall results improved across the board compared to the previous 2015 assessment. This progress attests to the effectiveness of the intervention of various organizations throughout 2018 in starting to reform the residential property assessment process in Cook County.
- The Chicago Triad assessment full performance against the four goals will be reviewed after completion of the Board of Review appeals.

There are four goals for the Cook County Residential Assessment System

Goal	Description	Metrics	Target Range
Uniformity	<ul style="list-style-type: none"> Similar properties to be assessed at the same value with as little variability as possible Properties of different values to be assessed at the same ratio with as little progressivity or regressivity as possible 	<ul style="list-style-type: none"> Coefficient of Dispersion Price-related Differential Price-related Bias 	<ul style="list-style-type: none"> 5 - 15 0.98 - 1.03 -0.05 - 0.05
Timeliness	<ul style="list-style-type: none"> Assessment process to be completed to allow for on-time collection of property taxes 	<ul style="list-style-type: none"> Meeting deadlines to allow for timely second installment property tax bills 	<ul style="list-style-type: none"> 100%
Compliance	<ul style="list-style-type: none"> Assessment levels (ratio of market value to assessed value for residential properties) in the County consistently in line with ordinance 	<ul style="list-style-type: none"> Assessment ratio (residential) 	<ul style="list-style-type: none"> 10%
Transparency	<ul style="list-style-type: none"> Trust in any government function depends on the public's ability to understand how and on what basis decisions are made 	<ul style="list-style-type: none"> Sales ratio studies Annual report Valuation methodologies for major property types Annual independent third-party review 	<ul style="list-style-type: none"> Yes/No – metrics not quantifiable

Note: The Uniformity goal is met if the COD meets target and *either* of the two “vertical equity” metrics (PRD or PRB) meets target.

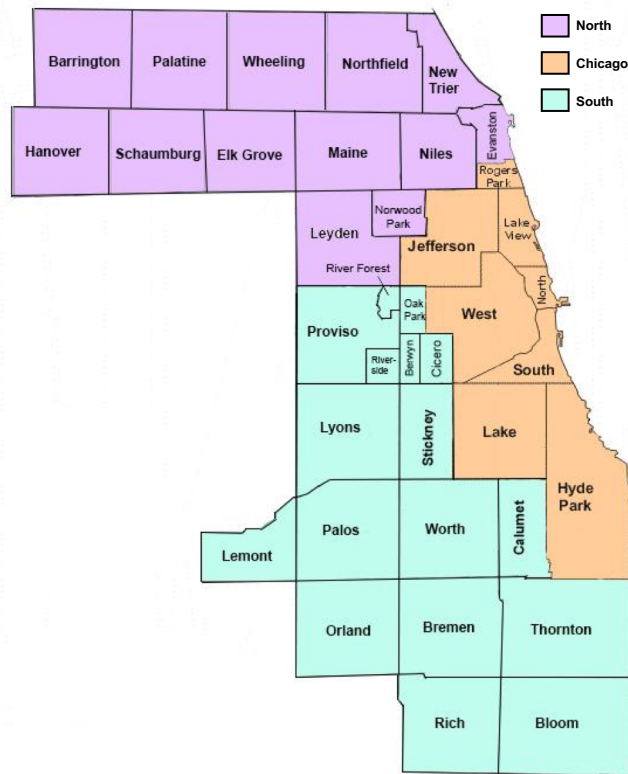
2018 Sales Ratio Study: Key Findings

- Overall, the 2018 Chicago Triad assessment consistently misses Uniformity targets, and only meets the Compliance target after Assessor appeals.
 - For the City overall, only the Assessment Ratio meets target, and only at the Assessor Final step.
 - For the City overall, the Coefficient of Distribution, Price-related Differential and Price-related Bias are all out of the target range, showing variability and regressivity of assessments.
 - 2 townships (North and Rogers Park) meet both Compliance and Uniformity goals at all steps of the process. Two others (Jefferson and Lakeview) meet Uniformity but fail on Compliance at Assessor appeals.
 - Hyde Park, Lake and West Chicago miss all targets at the Assessor Final step, and Uniformity targets at every step of the process.
- 2018 Assessor appeals made more and larger changes to property values than in 2015, with marginal or no improvement in assessment results compared to the Model and Notice steps.
 - Model improvements resulted in relatively few properties (6%) changing value during hand review, but the number doubled in Assessor appeals (to 12%), increasing substantially compared to 2015.
 - Changes during the Assessor appeals were substantially larger than in 2015, and all of them reduced assessed property values.
 - While metrics improved marginally along the process, 2 townships meet all targets at Assessor Final, compared to 4 at the Model step. 44% of metrics meet target at the Assessor Final step, compared to 50% and 53% at the Model and Notice steps, respectively.
- Even as the 2018 Chicago Triad assessment did not meet Uniformity targets, the overall results improved significantly across the board compared to the previous 2015 assessment.
 - Overall, all 4 metrics improved when comparing 2018 Chicago-wide results with the 2015 assessment.
 - All 4 metrics improved for most townships. North is the only township where 2018 results worsened compared to 2015 at all steps of the assessment process.
 - Results improved significantly from 2015 to 2018 at the Model step, and can really only be compared at this step due to selective reappraisal in 2015.
- Results of the 2018 Chicago Triad assessment through the Assessor's Office continue to highlight the need for significant progress in delivering fair and consistent residential property assessments in Cook County.

Note: 2015 results have been corrected since publication of Civic Consulting Alliance February 2018 report. They include Hyde Park township parcel sales that had been previously filtered out. See "Technical Note With Respect to Hyde Park Township" at the end of this report for details.

The Chicago Triad consists of 8 townships including 422,393 residential properties

Cook County Assessment Triads



Residential Property Statistics

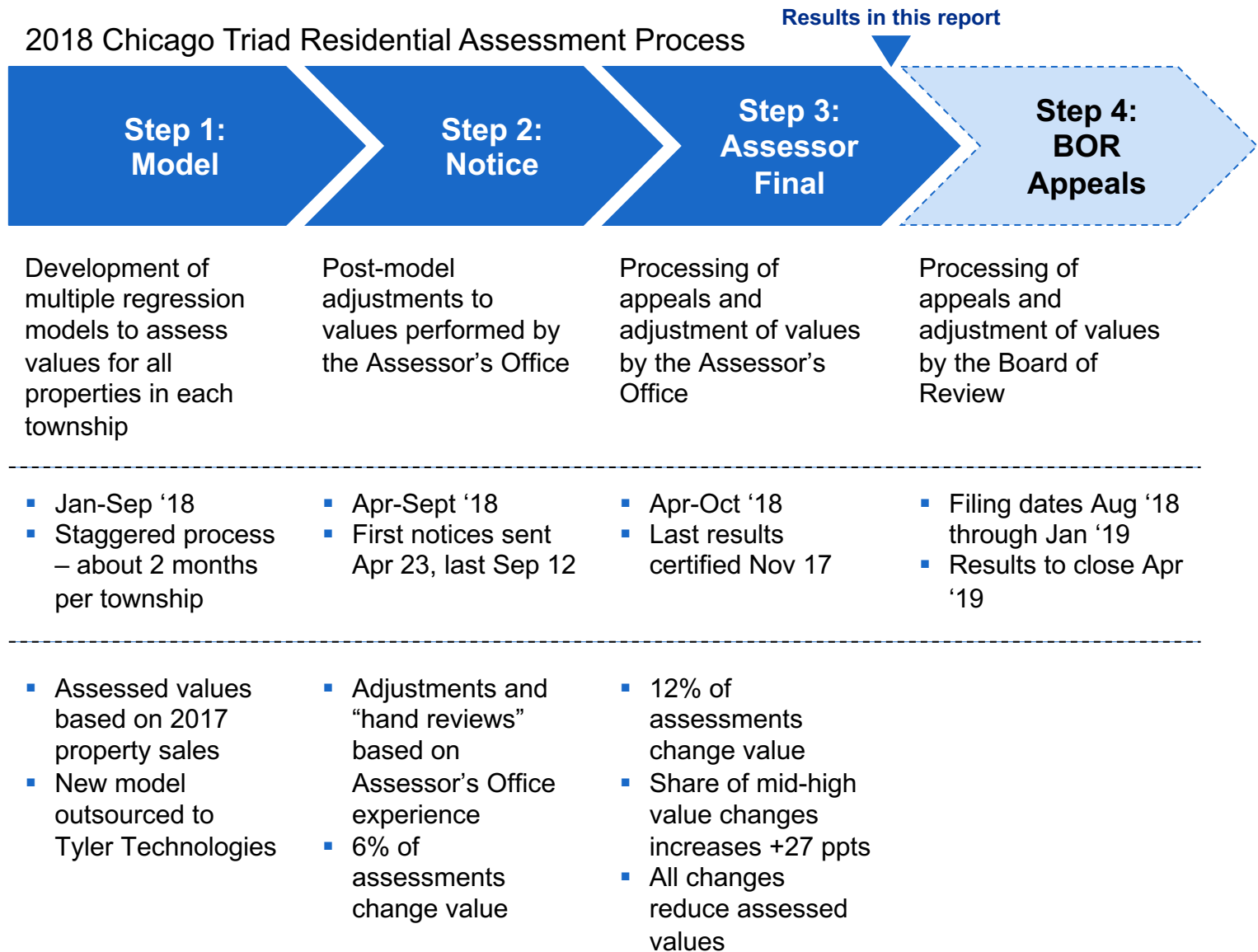
Chicago Triad 2017 Residential Sales (Used in this Sales Ratio Study)

	Count	Min	Max	Median	Mean	Std. Dev.
City Overall	11,826	\$ 1	\$ 74,650,000	\$ 215,000	\$ 431,408	\$ 2,501,073
Hyde Park	1,565	\$ 1	\$ 11,225,000	\$ 40,000	\$ 125,627	\$ 410,592
Jefferson	2,815	\$ 1	\$ 5,238,000	\$ 320,000	\$ 355,583	\$ 200,825
Lake	3,631	\$ 1	\$ 777,500	\$ 80,000	\$ 108,862	\$ 112,475
Lakeview	772	\$ 1	\$ 3,750,000	\$ 799,500	\$ 899,151	\$ 510,130
North	149	\$ 1	\$ 15,000,000	\$ 890,000	\$ 1,268,751	\$ 1,551,801
Rogers Park	305	\$ 1	\$ 1,025,000	\$ 284,900	\$ 258,229	\$ 233,221
South	768	\$ 1	\$ 1,950,000	\$ 214,350	\$ 239,238	\$ 254,410
West Chicago	1,821	\$ 100	\$ 74,650,000	\$ 385,000	\$ 1,297,803	\$ 6,232,904

Chicago Triad 2018 Assessment Values (Post-Assessor Appeals)

	Count	Min	Max	Median	Mean	Std. Dev.
City Overall	422,393	\$ 360	\$ 1,936,205	\$ 21,438	\$ 29,482	\$ 29,227
Hyde Park	62,306	\$ 1,265	\$ 349,410	\$ 13,111	\$ 16,059	\$ 12,970
Jefferson	110,050	\$ 942	\$ 277,104	\$ 31,531	\$ 34,680	\$ 13,120
Lake	140,513	\$ 996	\$ 119,055	\$ 14,724	\$ 15,891	\$ 7,879
Lakeview	21,492	\$ 9,300	\$ 641,080	\$ 76,281	\$ 86,953	\$ 41,633
North	4,876	\$ 13,312	\$ 1,936,205	\$ 124,377	\$ 147,920	\$ 105,901
Rogers Park	7,616	\$ 360	\$ 136,878	\$ 35,972	\$ 38,175	\$ 13,333
South	14,795	\$ 2,157	\$ 275,756	\$ 31,127	\$ 35,255	\$ 18,343
West Chicago	60,745	\$ 1,504	\$ 451,102	\$ 20,017	\$ 32,935	\$ 26,632

The first three steps of the 2018 Chicago Triad assessment process have been completed



Overall, the 2018 Chicago Triad assessment consistently misses Uniformity targets, and only meets the Compliance target at the Assessor Final step

2018 Chicago Triad Assessment Overall Results

	Assessment Ratio	Coefficient of Dispersion	Price-Related Differential	Price-Related Bias	
Model	10.13	30.75	1.20	-0.28	Does not meet target
Notice	10.09	29.27	1.18	-0.26	Does not meet target
Assessor Final	9.94	29.50	1.18	-0.25	Does not meet target

 Meets target
 Does not meet target

- Only the Assessment Ratio meets target, and only at the Assessor Final step.
- COD, PRD and PRB are out of the target range, showing variability and regressivity in the assessment.
- Overall results improved marginally from one step of the assessment process to the next.

Note: A metric “Meets target” if falling within statistical confidence intervals for the target range.
If *either* PRD or PRB “Meets target,” vertical equity is deemed on target.

2 of the 8 townships meet Compliance and Uniformity goals in 2018

Meets target
Does not meet target

2018 Chicago Triad Assessment - Performance by Township

Township	Model				Notice				Assessor Final			
	Median	COD	PRD	PRB	Median	COD	PRD	PRB	Median	COD	PRD	PRB
City Overall	10.13	30.75	1.20	-0.28	10.09	29.27	1.18	-0.26	9.94	29.50	1.18	-0.25
Hyde Park	11.90	72.28	1.66	-0.69	11.94	69.05	1.56	-0.60	11.09	72.95	1.56	-0.56
Jefferson	9.95	8.84	1.02	-0.06	9.92	8.99	1.02	-0.06	9.83	8.52	1.02	-0.06
Lake	10.70	38.86	1.21	-0.47	10.69	38.96	1.21	-0.49	10.53	38.48	1.20	-0.46
Lakeview	10.01	10.30	1.02	-0.06	10.01	8.54	1.02	-0.05	9.91	11.28	1.01	0.04
North	9.68	16.30	1.03	-0.01	10.01	11.83	1.02	-0.02	10.00	12.56	1.03	-0.01
Rogers Park	9.84	15.10	1.04	-0.14	10.01	12.91	1.03	-0.15	9.97	12.55	1.03	-0.15
South	10.48	19.38	1.05	-0.10	10.09	16.12	1.05	-0.14	10.07	14.79	1.05	-0.13
West Chicago	9.96	33.13	1.24	-0.26	9.95	29.32	1.18	-0.22	9.78	30.75	1.18	-0.17
# of Townships Meet Target	5	4	4	3	6	5	4	2	3	5	4	2
Meet Target "Hit Rate"		50%				53%				44%		
# of Townships Meet All Targets		4				4				2 - Almost 4		
# of Townships Meet No Targets		3 - Almost 4				2 - Almost 3				3		

- Only 2 townships (North and Rogers Park) meet both Compliance and Uniformity goals at all steps of the process. 2 others (Jefferson and Lakeview) meet Uniformity but fail on Compliance at Assessor Final.
- Hyde Park, Lake and West Chicago miss all targets at the Assessor Final step, and Uniformity targets at every step of the process.
- While metrics generally improve modestly from step to step along the process, townships performance reflect the questionable impact of appeals processed in the Assessor's office.
 - About 50% of metrics meet target at the Model and Notice steps, going down to 44% at the Assessor Final step
 - 4 townships meet all Compliance and Uniformity at the Model steps, going down to 2 at the Assessor Final step.

Note: A metric "Meets target" if falling within statistical confidence intervals for the target range.

If either PRD or PRB "Meets target," vertical equity is deemed on target.

What the 2018 assessment results mean for a Chicago Triad average value home of \$290,000

9.94% Assessment Ratio (10% Target)	<ul style="list-style-type: none"> A \$290,000 home if assessed at the mean 9.94% assessment ratio, is assessed at \$28,826, very close to the \$29,000 target.
29.5 Coefficient of Dispersion (5-15 Target Range)	<ul style="list-style-type: none"> It is likely that a \$290,000 home is valued between \$204,450 and \$375,550, a \$171,100 spread. This is a very broad valuation range, and a substantial target miss given the target range was \$246,500 to \$333,500.
1.18 Price-Related Differential (0.98-1.03 Target Range)	<ul style="list-style-type: none"> Lets assume that the \$290,000 home is assessed at 10%, and that the only other home in the jurisdiction is a \$580,000 home (of twice the value). If the mean assessment ratio is 9.94% and the PRD is 1.18, this means that the \$580,000 home is assessed at 7.6%, a substantial level of regressivity (see note). The acceptable assessment range for the \$580,000 home is 9.5% to 10.2% given the PRD target range.
-0.25 Price-Related Bias (-0.05-0.05 Target Range)	<ul style="list-style-type: none"> If a \$290,000 home is assessed at 10% (\$29,000), a \$580,000 home (of twice the value) is assessed at 7.5% (\$21,750). The target range for the assessment of the \$580,000 home was 9.5% to 10.5% (\$27,550 to \$30,450). This confirms substantial regressivity in the assessment .

Note: Simplified examples. The 7.6% under-assessment of the \$580,000 home is exaggerated by the fact that we assume this is a 2-home jurisdiction, a totally hypothetical case. In a jurisdiction containing hundreds of homes, the assessment would be higher than 7.6%, but still lower than the 10% assessment for the \$290,000 home.

Assessor appeals made more changes to property values than in 2015, with marginal improvement in assessment results

2018 vs. 2015 Chicago Triad Assessment - Step-to-Step Change in Assessed Values

	Hand Review (From Model to Notice)			Assessor Appeals (From Notice to Assessor Final)		
	% Positive Changes	% Negative Changes	% Total Changes	% Positive Changes	% Negative Changes	% Total Changes
2018	4%	2%	6%	0%	11%	12%
2015	27%	72%	100%	0%	9%	9%
Diff. '18 vs. '15 (Ppts)	-23	-70	-93	0	2	2

- In hand review, a relatively small number of properties (6%) changed value in 2018. In contrast, essentially all properties had changed value in hand review in 2015.
- In Assessor appeals, twice as many properties changed value in 2018 compared to hand review (12% vs. 6%). This was also substantially more than in 2015 (12% vs. 9%).
- Essentially all changes in Assessor appeals were negative (reducing assessment values).

2018 vs. 2015 Chicago Triad Assessment - Step-to-Step Change in Size of Assessed Values

	Hand Review (From Model to Notice)			Assessor Appeals (From Notice to Assessor Final)		
	Share of Changes Between 0% and 10%	Share of Changes Between 10% and 20%	Share of Changes Greater Than 20%	Share of Changes Between 0% and 10%	Share of Changes Between 10% and 20%	Share of Changes Greater Than 20%
2018	46%	25%	29%	58%	21%	21%
2015	37%	35%	28%	85%	11%	4%
Diff. '18 vs. '15 (Ppts)	9	-10	1	-27	10	17

- Hand review changes were smaller in 2018 than in 2015 (the share of low-value changes increased +9 ppts among properties that changed value).
- This pattern reversed in Assessor appeals. Changes in 2018 were considerably larger than in 2015 (the share of mid- and high-value changes increased +27 ppts among properties that changed value).

- In summary, 2018 Assessor appeals made more and larger changes to property values than in 2015, with marginal or no improvement in assessment results compared to the Model and Notice steps.

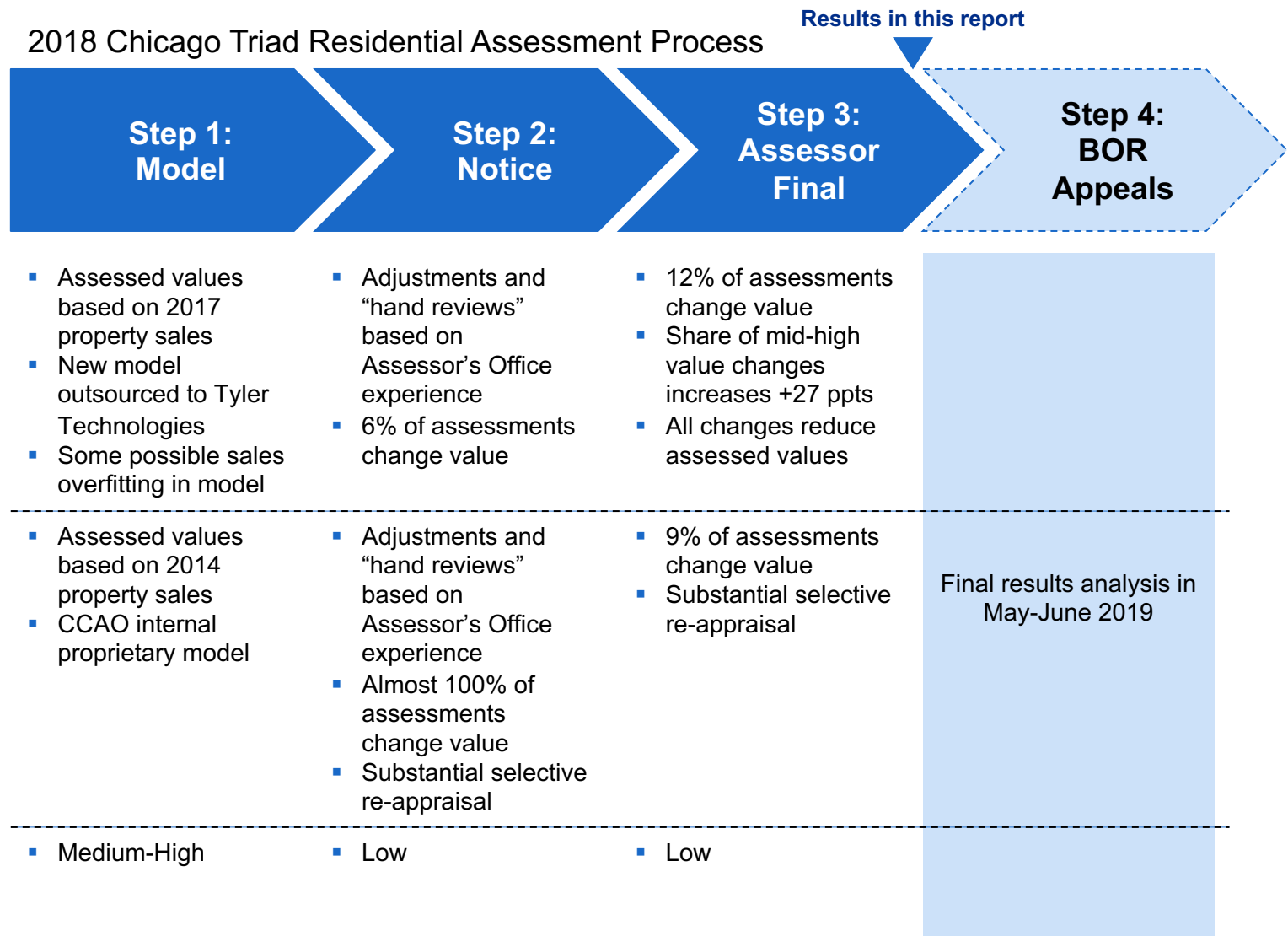
Suspected selective reappraisal decreased in 2018 compared to 2015

2018 vs. 2015 Chicago Triad Assessment - Selective Reappraisal Suspected

	2018			2015		
	Assessor			Assessor		
	Model	Notice	Appeal	Model	Notice	Appeal
City Overall	Yes	Yes	Yes	No	Yes	Yes
Hyde Park	No	No	No	No	Yes	Yes
Jefferson	No	No	Yes	No	No	No
Lake	Yes	Yes	Yes	No	No	No
Lakeview	No	No	Yes	No	Yes	Yes
North	Yes	No	No	No	Yes	Yes
Rogers Park	No	No	No	No	Yes	Yes
South	No	Yes	No	Yes	Yes	Yes
West Chicago	Yes	Yes	Yes	Yes	Yes	Yes
# of Townships with Selective Reappraisal Suspected	3	3	4	2	6	6

- Selective reappraisal introduces changes in property values along the assessment process to skew results so that uniformity appears better than what it is in reality. Selective reappraisal is detected based on statistical comparison of changes in appraised values for sold and unsold parcels.
- The number of Chicago Triad townships with suspected selective reappraisal along the process decreased to 10 in 2018 from 14 in 2015, a 29% improvement through the Assessor Final step.
- Suspected selective reappraisal in 2018 decreased at the Notice and Assessor Final steps, though it actually increased at the Model level, suggesting some possible overfitting in the model.
- There was substantial suspected selective reappraisal in 2015 at the Notice and Assessor Final steps. As a result, 2018 vs. 2015 assessment results may not be directly comparable for these two steps.

Due to 2015 selective reappraisal, 2018 and 2015 assessments are only really comparable at the model step



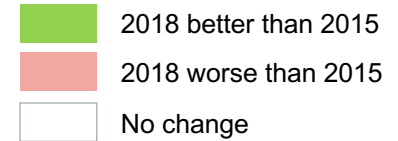
Even as the 2018 Chicago Triad assessment did not meet Uniformity targets, overall results improved compared to 2015

2018 vs. 2015 Chicago Triad Assessment Overall Results

	Assessment Ratio	Coefficient of Dispersion	Price-Related Differential	Price-Related Bias	
Model - 2018	10.13	30.75	1.20	-0.28	
Model - 2015	10.98	49.93	1.47	-0.51	
Change 2015-18	-0.86	-19.18	-0.27	0.23	2018 better than 2015
Notice - 2018	10.09	29.27	1.18	-0.26	
Notice - 2015	10.46	36.30	1.25	-0.36	
Change 2015-18	-0.37	-7.03	-0.07	0.10	2018 better than 2015
Assessor Final - 2018	9.94	29.50	1.18	-0.25	
Assessor Final - 2015	10.26	36.50	1.27	-0.37	
Change 2015-18	-0.32	-7.00	-0.08	0.12	2018 better than 2015

- All 4 metrics improved when comparing 2018 results vs. the previous 2015 assessment.
- Results improved at each step of the process, and were most significant at the Model step.
- 2018 vs. 2015 direct comparisons are only really possible at the Model step given significant selective reappraisal in 2015 at the Notice and Assessor Final steps.

Compliance and Uniformity results improved for all townships in 2018 when compared with the 2015 assessment



2018 vs. 2015 Chicago Triad Assessment - Changes by Township

Township	Model				Notice				Assessor Final			
	Median	COD	PRD	PRB	Median	COD	PRD	PRB	Median	COD	PRD	PRB
City Overall	-0.86	-19.18	-0.27	-0.23	-0.37	-7.03	-0.07	-0.10	-0.32	-7.00	-0.08	-0.12
Hyde Park	-6.39	-13.30	-0.47	0.00	-5.82	-6.60	-0.25	0.04	-6.46	-3.80	-0.27	-0.02
Jefferson	-1.16	-11.96	-0.05	-0.12	-0.36	-5.31	-0.02	-0.10	-0.21	-5.42	-0.02	-0.09
Lake	-2.50	-13.97	-0.13	-0.35	-0.72	-5.26	-0.04	-0.16	-0.79	-4.79	-0.04	-0.17
Lakeview	2.94	-13.13	0.00	0.11	0.00	0.46	0.00	0.00	-0.09	3.03	-0.01	-0.06
North	2.03	-12.14	0.00	0.10	0.00	2.22	0.03	0.04	0.00	3.29	0.02	0.01
Rogers Park	-1.14	-5.18	-0.03	-0.07	0.24	-2.38	-0.02	-0.08	0.20	-1.89	-0.02	-0.09
South	0.80	-5.98	-0.09	-0.24	-0.54	-4.32	-0.05	-0.13	-0.51	-5.43	-0.05	-0.12
West Chicago	-0.58	-0.58	0.02	-0.11	-0.06	18.50	0.13	0.12	-0.23	20.44	0.13	0.07
# of Townships Improved	5	7	4	4	5	3	4	3	6	3	4	4
Improved Target "Hit Rate"		63%				47%				53%		
# of Townships Improved All Targets		3 - Almost 6				3 - Almost 5				3 - Almost 6		
# of Townships Improved No Targets		0 - Almost 2				1 - Almost 3				1 - Almost 2		

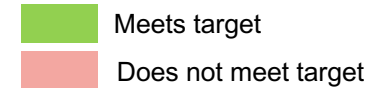
- All 4 metrics improved for most townships when comparing 2018 versus the previous 2015 assessment.
- North is the only township where 2018 overall results worsened compared to 2015 at all steps of the assessment process.
- West Chicago results improved at the Model step, and seemed to worsen at latter steps. Large amounts of selective reappraisal occurred in the Notice and Assessor Final steps in 2015, making the comparison with 2018 meaningless. The 2018 results are probably not worse at all based on what we see in the Model step comparison.
- 63% of metrics improved at the Model step, an encouraging development.
- 2018 vs. 2015 direct comparisons are only really possible at the Model step given significant selective reappraisal in 2015 at the Notice and Assessor Final steps.

Note: Green and Red cell denotes a statistically significant different. White cell differences are not statistically significant.

Appendix

- Technical Note With Respect to Hyde Park Township – 2015 Corrected Results
- 2015 Chicago Triad assessment SRS overview
- About Civic Consulting Alliance and Josh Myers Valuation Solutions

Technical Note With Respect to Hyde Park Township – 2015 Corrected Results





Hyde Park 2015 Assessment Results - Corrected vs. Original

	2015 Corrected				2015 Original				Percent Change Corrected vs. Original			
	Median	COD	PRD	PRB	Median	COD	PRD	PRB	Median	COD	PRD	PRB
Hyde Park												
Model	18.29	85.58	2.13	-0.69	11.58	39.21	1.28	-0.18	58%	118%	66%	279%
Notice	17.76	75.66	1.81	-0.56	12.16	30.62	1.19	-0.14	46%	147%	52%	288%
Assessor Final	17.55	76.74	1.83	-0.58	11.85	30.12	1.19	-0.14	48%	155%	55%	305%
Chicago Triad												
Model	10.98	49.93	1.47	-0.51	10.67	38.09	1.33	-0.36	3%	31%	11%	43%
Notice	10.46	36.30	1.25	-0.36	10.37	23.95	1.14	-0.21	1%	52%	10%	70%
Assessor Final	10.26	36.50	1.27	-0.37	10.08	23.76	1.16	-0.22	2%	54%	9%	71%

- In February 2018, the Civic Consulting Alliance released a report analyzing the 2014, 2015, and 2016 assessment results, including a sales ratio study for the Hyde Park Township. After the report was published, it was discovered that the sales file provided to CCA for Hyde Park township was missing data for all sales less than \$65,000 (39% of sales).
- This sales ratio study compares 2018 Chicago Triad results with 2015 corrected results – using corrected data for Hyde Park township which includes the previously filtered out sales.
- The overall conclusions for Hyde Park Township remain the same for each of the assessment steps. However, including the missing Hyde Park sales data results in variability and uniformity performance that are markedly worse than previously reported for the township.
- Adding back the filtered out Hyde Park sales also substantially affects overall 2015 results for the Chicago Triad. Variability and regressivity were substantially higher in 2015 than originally reported by CCA in February 2018.

Only two townships met Compliance and Uniformity targets in the 2015 Chicago Triad assessment

 Meets target
 Does not meet target

2015 Chicago Triad Assessment - Performance by Township

Township	Model				Notice				Assessor Final			
	Median	COD	PRD	PRB	Median	COD	PRD	PRB	Median	COD	PRD	PRB
City Overall	10.98	49.93	1.47	-0.51	10.46	36.30	1.25	-0.36	10.26	36.50	1.27	-0.37
Hyde Park	18.29	85.58	2.13	-0.69	17.76	75.66	1.81	-0.56	17.55	76.74	1.83	-0.58
Jefferson	11.11	20.80	1.07	-0.17	10.29	14.30	1.04	-0.15	10.04	13.94	1.04	-0.15
Lake	13.20	52.84	1.33	-0.82	11.41	44.22	1.25	-0.65	11.32	43.27	1.25	-0.63
Lakeview	7.07	23.44	1.02	0.05	10.00	8.08	1.02	-0.04	10.00	8.25	1.02	-0.02
North	7.65	28.45	1.03	0.09	10.00	9.61	0.99	0.02	10.00	9.27	1.01	0.00
Rogers Park	10.98	20.27	1.06	-0.22	9.77	15.29	1.06	-0.24	9.77	14.44	1.06	-0.25
South	9.69	25.37	1.14	-0.34	10.63	20.44	1.10	-0.27	10.58	20.23	1.10	-0.25
West Chicago	10.54	33.71	1.22	-0.37	10.01	10.83	1.05	-0.11	10.01	10.32	1.05	-0.10
# of Townships Meet Target	0	0	2	2	4	5	2	2	5	5	2	2
Meet Target "Hit Rate"		13%				41%				44%		
# of Townships Meet All Targets		0				2				2		
# of Townships Meet No Targets		6 - Almost 8				3 - Almost 6				3 - Almost 6		

- Overall, the Chicago Triad consistently missed Compliance and Uniformity targets at every step of the 2015 assessment process.
- At the Model step, 6 out of 8 townships missed all targets, and only 13% of targets were met.
- Only two townships (Lakeview and North) met targets for all 4 metrics, at the Notice and Assessor Final steps.
- With the exception of Lakeview and North, all other 6 townships missed Uniformity targets at all steps of the process.
- While there was some progress from step to step, it is difficult to estimate how much of it was real given selective reappraisal distorting results.

Note: A metric "Meets target" if falling within statistical confidence intervals for the target range.

If *either* PRD or PRB "Meets target," vertical equity is deemed on target.

Civic Consulting Alliance partnered with Josh Myers Valuation Solutions to perform this sales ratio study

About Civic Consulting Alliance

Civic Consulting Alliance's mission is to make the Chicago region a great place for everyone to work and live in.

By leveraging the support of the Civic Committee of the Commercial Club of Chicago (collectively the major private employers in the region) with incomparable professional resources and committed leaders, CCA provides consulting services to clients to help address the region's most pressing problems and greatest opportunities in four areas: Education; Criminal Justice and Public Safety; Economic Vitality; and inclusive Civic Leadership.

At no cost to the taxpayer, CCA works on a pro bono basis with governmental and not-for-profit clients who commit to collaborate on important strategic and operational change and achieve significant reforms. In Fiscal Year 2017, 37 partner firms provided pro bono support for 54 cross-sector projects. Together, CCA, its partners, and its clients accomplish more than any one firm or sector can on its own.



About Josh Myers Valuation Solutions

Josh Myers Valuation Solutions offers innovative mass-appraisal consulting solutions for local governments.

Josh provides these solutions with an expertise derived from his education and his experience. Josh holds a Masters Degree in Statistics from the University of Virginia, and has now worked with dozens of end-clients across the United States and abroad.

Consulting solutions include model-building and implementation, independent ratio studies and performance analysis, business process review, and statistical analysis to solve complex problems.

