

PRACTICES AND PROCEDURES AUDIT

of the Cook County, Illinois
Assessor's Office

May 2019



PROFESSIONAL
CONSULTING SERVICES
OF IAAO, LLC

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ABOUT THE IAAO

The International Association of Assessing Officers (IAAO) is a global community of mass appraisal experts who promote excellence in property appraisal, assessment administration, and property tax policy.

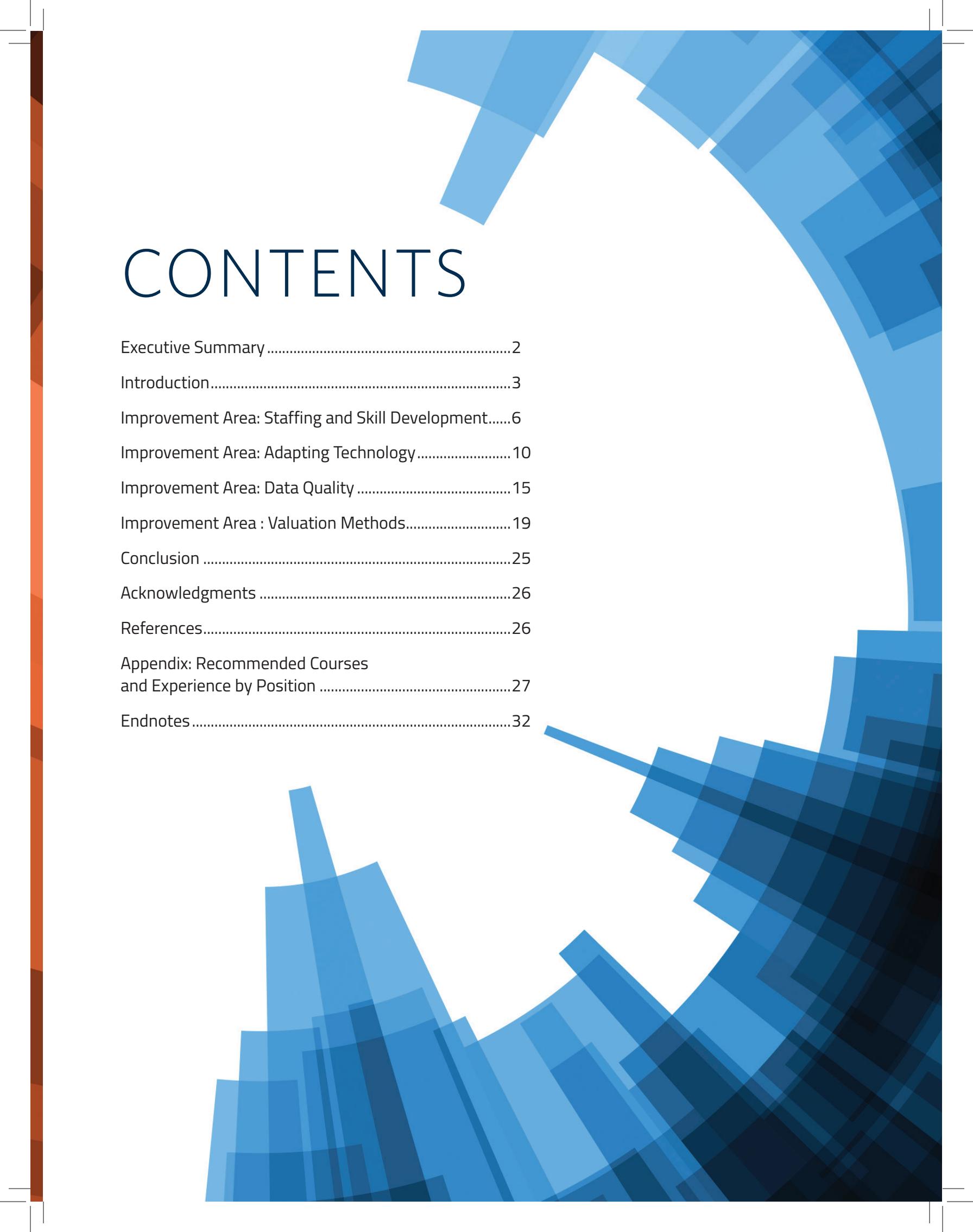
IAAO actively contributes to the growth and success of the mass appraisal industry globally. The organization was formed in 1934 and today serves more than 8,000 members worldwide, the majority of whom are practicing government assessment professionals.

Individuals and organizations turn to IAAO for guidance and expertise. Policy makers, regulatory agencies, courts, media, and taxpayers rely on IAAO guidance, standards, and education in mass appraisal.

The association provides professional development, peer-to-peer networking, and valuable industry research. Employers encourage their employees to use IAAO resources because of the proven link to professional success. IAAO members receive mentoring and skill advancement as well as access to professional development and research. With 295 courses, 6 designations, and 14 industry standards, IAAO serves as the foundational career development partner for assessing and valuing authorities worldwide.

IAAO also holds the largest library in the world specific to the assessment profession.

For more than 50 years the Professional Consulting Services of IAAO (IAAO Consulting) has supported government jurisdictions in improving their assessment and mass appraisal practices. The mission of IAAO Consulting is to promote fair and equitable valuations for governments and ultimately for the communities they serve. In turn, governments turn to IAAO Consulting for impartial and objective advice on how best to meet IAAO industry standards and best practices.



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EXECUTIVE SUMMARY

Mr. Fritz Kaegi, newly elected Cook County, Illinois, Assessor, with support from the Civic Consulting Alliance, requested that IAAO conduct a comprehensive review of operations in the Cook County Assessor's Office (CCAO) to uncover reasons for valuation inequality in Cook County. Assessor Kaegi was elected with a mandate to reverse this inequity and to ensure all citizens pay a fair share based on assessed property value. Property assessment supports revenue generation from property taxes, a significant funding source for local government.

Valuation inequity spurs regressive taxation when not all citizens' properties are taxed uniformly. Valuation inequity is not a condition that stands alone but is a result of growing weakness in several operational areas of assessment.

It is the conclusion of the IAAO Consulting Team that Assessor Kaegi's administration inherited an environment that does not meet IAAO Technical Standards in the areas having a direct impact on valuation. This report describes the current condition of the Office's operations and offers suggestions on how to address inequity in the assessment process for Cook County. It also offers a practical pathway to modernization through a set of recommendations based on IAAO standards and best practices.

The IAAO Consulting Team found in CCAO a talented, if short-handed, staff facing an assessment task that would be monumental under good circumstances but has been made nearly impossible by a combination of factors. Through site visits and background information collection, the IAAO Consulting Team developed a picture of an assessment office operating with insufficient property characteristics or market data and lacking the standard industry processes to obtain such information.

Moreover, the data, a key input factor to the valuation system, suffer from years of neglect and are of very poor quality. The data are being stored and maintained on severely outdated computer systems. One CCAO team member referred to the process the current administration inherited as "assessment by appeal," because most of the emphasis of the prior administration was on assessment appeal volume rather than on the development of sound values. The appeals process, rather than sound assessment valuation methods, has driven the value determination process.

The size of the jurisdiction and the extent of the issues it faces demand a set of recommendations for improvement that require a long-term commitment of both capital and resources.

While the new CCAO's administration has been proactive in seeking the best practices in mass appraisal procedures and applications, it faces serious challenges because of a lack of multiple resources and an outdated digital infrastructure. These challenges are exacerbated by the size, complexity, and time constraints that impede movement toward modernization and best practices. The current situation demands further comprehensive planning to develop specific solutions to improve the following critical areas:

- Staffing and skill development
- Adapting technology
- Data quality
- Valuation methods.

These four areas represent a path to modernization for CCAO, and reflect its commitment to valuation improvement and recognition of its critical role in the administration of local property taxes and the funding of local government services.

INTRODUCTION

Current Situation

The newly elected Assessor Fritz Kaegi and the Cook County Assessor's Office (CCAO) are faced with a daunting task: addressing inequity in the assessment process for Cook County citizens and rebuilding public trust. Inequity is a result of not being able to produce fair and uniform values that stand up to citizen appeals. The number of appeals is an administrative operational quagmire from which CCAO must emerge in order to be a more effective organization.

The accuracy, uniformity, and fairness of property assessments are negatively affected by the following circumstances:

- CCAO is mandated to reassess every property in the county every three years.
- The Office is in the middle of a transition to a new computer platform that manages many of its functions.
- The Office has suffered from years of neglect in the areas of data maintenance on the one hand and neglected professional staff development on the other.

These circumstances contribute to the inequity in the assessment process, while also adding some explanation as to why the appeal volume is so great.

The purpose of this report is to provide practical guidance to CCAO on proactive measures to modernize the operations of this Office, improve service to the public, and ultimately reverse inequity in the assessment process.

The following paragraphs review the weaknesses and strengths observed in CCAO operations. These observations inform the recommendations made in this report.

Staffing

A weakness of the Office is insufficient appraisal and support staff. The personnel deficiencies reported and verified in this study are in the areas of field staff and the supervisory staff needed to direct them. Cook County has a parcel count exceeding 1.8 million, with an annual sales volume over 110,000 transactions and assessment appeals topping 200,000.¹ Based on IAAO estimates, the CCAO is running at approximately one-fourth recommended staffing levels.

In addition to insufficient staffing levels, the previous administration neglected to promote training and education, as well as professional development, for its staff. In general, there has been a continual loss of institutional professional knowledge.

RELEVANT NUMBERS:

- **1.8 million** - number of parcels in Cook County
- **110,000** - annual sales volume
- **>200,000** - assessment appeals
- **Based on IAAO estimates, the CCAO is running at approximately one-fourth recommended staffing levels**

Property Characteristic Data

Another area of great concern is property characteristic data. The IAAO Consulting Team was unable to determine with a great degree of confidence the age of the current property characteristic data files. There was a suggestion that residential data were originally compiled many decades ago through a survey mailed to property owners. Regardless of how or when they were compiled, current property records and data do not meet industry best practices for either quantity or quality. Without good data an office cannot produce accurate property values.

Quantity refers to the number of characteristics gathered for each parcel. The IAAO consultants who reviewed this aspect of office operations questioned both the extent and reliability of data currently stored for each parcel. They expressed particular concern regarding land valuation and the quality and condition ratings of residential properties. In addition to land values for commercial and industrial properties, concern was expressed regarding the capturing of investment grades and adequate income and expense information.

Quality refers to the maintenance of data collected and efforts to guarantee its continued accuracy. The consultants found no evidence of regular field re-inspections of any parcels. An office responsible for deriving values based on mass appraisal techniques must depend on sound data, and when the accuracy of that data is in question, the office needs the ability and resources to act in the most expeditious manner possible to correct and maintain the quality of the data.

Legacy Technology

CCAO is currently tied to an aged assessment computer system, the AS400. The limitations and inflexibility of this system form a strong impediment to developing operational efficiencies; the system is a roadblock to improvements. Relying on dated software severely limits office modernization.

Cook County Government has undertaken a large technology project to upgrade to a new integrated property tax software platform provided by Tyler Technologies Inc. The objective is to provide a modern software platform to replace various existing legacy systems and ultimately improve the administration of the overall property tax system. This project includes integrating CCAO operations with those of the County Treasurer's and County Clerk's Offices through this common technology software platform.

CCAO's new administration has stepped into this implementation after the program design, specifications, and timelines had been outlined, and is now faced with the additional obligation to implement this new system.

A NOTE ON DEFINITIONS:

An APPRAISAL is the act of estimating the money value of a property.

An ASSESSED VALUE is the monetary amount for a property as officially entered on the assessment roll for purposes of computing the tax levy. Assessed values differ from the assessor's estimate of actual (market) value for three major reasons: fractional assessment ratios, partial exemptions, and decisions by assessing officials to override market value. The process of gathering and interpreting economic data to provide information that can be used by policymakers to formulate tax policy.

MASS APPRAISAL is the process of valuing a group of properties as of a given date, using standard methods, employing common data, and allowing for statistical testing.

Geographic Information Systems

Cook County Government has a robust and nationally recognized geographic information systems (GIS) department. This is a strong positive for the Office.

The Cook County Viewer represents a good use of existing GIS technology because of the strength and accuracy of the cadastral map maintained by CCAO and County Clerk's Office. Cook County Viewer provides a relatively easy way for property owners to find their parcel, as well as other helpful information. Some of the data, including digital images provided within Cook County Viewer, are also retrievable on the CCAO's website and are part of current search functionality.

Senior Leadership and Technical Staff

Although CCAO is short-handed, one of its strengths is the presence of very talented staff members at the highest administrative levels of the organization as well as in the technology section. IAAO Consulting Team members were impressed with the quality of the personnel they met and worked with during our time in Chicago. That talent should make a significant difference in the ultimate success of the Office. The team was equally impressed with the talent in the statistical analysis section.

Recommended Areas of Improvement

The IAAO Consulting Team advises that a modernization plan be based on four critical areas:

- Staffing and skill development
- Adapting technology
- Data quality
- Valuation methods.

The following sections of this report summarize observations on the importance of these critical areas of improvement. The report cites areas in which CCAO is not in compliance with IAAO industry standards. For each area, IAAO Consulting offers recommendations on how CCAO can improve, and provides examples of similar jurisdictions that have made great strides modernizing their operations.

IMPROVEMENT AREA: STAFFING AND SKILL DEVELOPMENT

AAO Consulting determined that based on current staffing levels, it will take 31 years to complete a general revaluation for Cook County. That does not satisfy the IAAO *Standard on Mass Appraisal of Real Property* (IAAO 2017), which calls for a reinspection of every parcel every four to six years.

Although we recommend maximizing the use of technology whenever possible, the functioning of an appraisal office requires field staff to conduct field inspections. Each of these employees must be adequately trained to fulfill current job requirements, and they should be encouraged to pursue professional development beyond their current job. Staff who are encouraged to pursue training beyond the minimum requirements of their job tend to adapt more easily to the constant demands of the real estate market.

The IAAO Consulting Team also learned that the number of staff who had received training or had IAAO designations had decreased markedly over a prolonged period. It was noted that less than one-fifth today had IAAO designations compared to 10 years ago.

The following are recommendations for remedying staffing and skill development deficiencies.

Increase the Number of Staff

IAAO standards advise that all parcels involved in a reappraisal effort be physically inspected. Inspections are usually accomplished by sending trained data collectors into the field to visit every parcel and encode property characteristics on some type of data collection equipment. The personnel requirements to perform such a physical reinspection are quite high. The requirement for a physical reinspection of every parcel once every six years cannot be satisfied with the current number of field staff.

Table 1 compares the current staffing levels to the required inspection rate of Cook County.

TABLE 1. COMPARISON OF CURRENT CCAO STAFFING LEVELS WITH REQUIRED INSPECTION RATE					
Property Type	Number of Parcels	Number to be Inspected Annually	Current Number of Staff	Current Number of Parcels per Year per Appraiser	Minimum Number of Staff to Meet IAAO Standards
Residential	1,580,286	263,381	11	51,700	56
Commercial	119,890	19,982	9	21,150	9

The formula for these table calculations is: $S = P \div (R \times T)$

where: **S** = number of staff **P** = number of parcels **R** = rate **T** = time to conduct the activity

The numbers in the third column represent the calculated number of parcels to be inspected annually to satisfy that requirement of a six-year cycle. The fourth column shows the number of field staff available from the current organization chart, and the next column calculates the number of parcels that can be inspected by those staff members assuming a rate of collection of 20 per day for residential and 10 per day for commercial and 235 working days in the year. The final column reflects the number of staff that would be required to satisfy the six-year requirement.

Because of the triannual assessment cycle, given the statutory requirements of Cook County, CCAO would need to hire, train, equip, and house 90 data collectors for the residential department. These new staff members, in turn, would need supervision and clerical support. The expense would be very high, assuming the Office was able to find sufficient staff.

The reality of this situation for CCAO is recruiting, onboarding, and training this number of new additional staff members would require not only a very significant increase in the budget but also additional time to fully onboard and ramp up these new employees to be operationally efficient.

One alternative to hiring additional field inspectors is to contract with a company for the general reappraisal for the County. One positive aspect of this approach is that the project could be completed in four years. CCAO would then have a benchmark of values. Furthermore, CCAO could devote more staff time to assessment administration functions.

The downside of this approach is that, by our very general estimates, the reappraisal would cost roughly upwards of \$88 million. This would be a diversion of financial resources for staffing, and, furthermore, CCAO would not have ownership of the values produced, nor would it gain further capacity to conduct field inspections. CCAO would still be responsible for correcting data errors in the data collection and verification process. In addition, factoring in a required public procurement process, it would take no less than four years to complete the reappraisal.

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cost of reappraisal.”

IAAO Consulting *does not* recommend outsourcing the reappraisal work, although for targeted valuations the use of some appraisal services may be appropriate and allow CCAO to concentrate on different priorities.

While there is no better way to collect all the property characteristic data needed to support the valuation process than physical inspections, the use of technology can reduce the number of staff required and potentially reduce the cost of reappraisal. These alternatives are described in later sections of this report.

Even if CCAO elects to satisfy most data collection needs through the use of technology, the Office should retain sufficient field staff to physically inspect new construction and sales to ensure the accuracy of the data inventory. Additional field staff will require additional supervisory personnel as well as support staff.

IAAO can support CCAO in creating a plan to blend adding staff, adapting technology, and contracting appraisal services to maximize the investment, rate, and accuracy of the reappraisal work. In addition, new job positions should be created to support the application of technology and methods to value properties.

Develop Skills and Professional Development Programs

CCAO should establish a minimum level of expertise required for all appraisal staff. This can range from a combination of experience and industry education to a mass appraisal designation. The IAAO *Standard on Professional Development* (IAAO 2013) will be helpful in establishing these guidelines. The Appendix lists recommended courses and experience by position.

CCAO should work closely with the IAAO Professional Development department to design a series of course offerings that will allow existing staff to meet the professional guidelines established by the Office and to fulfill the needs of those who desire to achieve an IAAO designation. This could, according to the *Standard for Professional Development*, include establishing incentive programs for employees to take course work and examinations to earn IAAO designations appropriate for their position.

Furthermore, the development of a pathway for existing staff to become certified as IAAO instructors would expedite skill development for the Office. Job applicants who are current instructors should be given strong consideration.

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Define Job Descriptions and Roles

The IAAO *Standard on Professional Development* (IAAO 2013) should be used as a starting point for developing a complete set of job descriptions for the Office. As noted, the Appendix includes such job descriptions.

It should be clear that current staffing levels for the Office will not produce the level of assessment quality desired by the taxpaying public or the Office’s administrative staff. For that reason, it is imperative that additional staff be hired and that they be trained in modern appraisal techniques.

Summary

Further analysis is needed to formulate the appropriate level of staffing, reappraisal outsourcing, and application of technology so as to increase the rate at which properties can be appraised accurately, and at a rate that improves overall operational efficacy. An increase in staff members is needed, and new positions need to be created. CCAO should also institute a staff skill development and training program to support modernization.

IMPROVEMENT AREA: ADAPTING TECHNOLOGY

CCAO is currently using a legacy green screen mainframe computer system, the AS400. This is the mission critical data infrastructure for the Office. Continued reliance on this dated system poses considerable risk to operations. Because the system is not scalable to modern technology, the Office is not in compliance with the IAAO *Standard on Mass Appraisal for Real Property* (IAAO 2017). Specifically, the system cannot support different valuation methods, nor can the Office produce reliable and speedy data inquiries from this system.²

Cook County Government is remedying this deficiency through a contract with Tyler Technologies to implement the iasWorld® software platform. This software platform will broadly enable the CCAO to collect and process information in a more reliable, efficient, secure, and trusted manner. Importantly, this modernization will broaden information exchange between the CCAO and the public and between the Office and other government offices.

This report has already discussed a strength of operations being the GIS capabilities of Cook County Government. This platform and in-house expertise in GIS can be further leveraged to support the CCAO operations in ways and methods considered cutting edge, as the underlining GIS is considered by IAAO Consulting to be of the highest caliber nationwide. By leveraging this technology, CCAO can drive efficiencies, improve data quality, and better communicate with taxpayers.

While the mission-critical assessment administration AS400 is currently a hindrance to modernization, CCAO has an opportunity to adapt technology so as to leap-frog current industry practices. To do so requires a carefully conceived technology strategy.

The following paragraphs summarize IAAO recommendations for adapting technology to improve the assessment process.

Find the Critical Path to Deploy the Tyler Technologies Software Platform

The Tyler Technologies contract with Cook County Government targets implementation of the iasWorld computer-assisted mass appraisal (CAMA) system toward the end of this calendar year (2019). Because replacement of the legacy system and all the individual support systems, including the digitization of office procedures and scanning and indexing of literally rooms of paper records, is so important to the efficiency of the Office, it is crucial that the project receive the highest level of attention from CCAO staff.

IAAO Consulting recognizes that CCAO's new leadership had come into office mid-stream on this implementation, and we have been made aware of prioritization for this project. This included assigning a dedicated director-level staff member from CCAO to oversee the implementation. CCAO is working with Tyler Technologies to establish and prioritize the functionality most critical to the Office's operations and what must be done, by whom, and by what timeframe.

Because this implementation involves the County Treasurer's and County Clerk's Offices, specific system enhancement requirements are needed integrate operations across offices in new ways. This will require the vendor to write software code specific to Cook County Government agencies. It is important for Cook County to compliment the CCAO project management team with individuals experienced with the iasWorld product so as to provide added necessary support defining and documenting the most critical requirements of this Office; this will ensure effective implementation of the product. With a mutual staffing commitment from

Hillsborough County Property Appraiser: An Early Adopter of Desktop Review for Assessment

In 2010 the State of Florida enacted a new law that allowed county property appraisers to inspect properties using a desktop review. The Hillsborough County Property Appraiser, the collar county of Tampa, Florida, initiated an ambitious project to integrate its existing CAMA system with oblique and street-level imagery and also sketch verification tools to enable a desktop review of properties. This county is mandated to review a quarter of all properties per year, so it is on a four-year revaluation cycle.

Results from this technology modernization effort have been impressive. Not only did the office manage to decrease the number of field trips resulting in reduced costs, such as for fuel, repairs, and staff drive time, it also proved that that this method can increase accuracy and generate more value for the tax roll. Since implementing desktop review, Hillsborough added an additional \$103 million to the tax roll and made more than 30,000 changes to property records. Twenty percent of these changes to properties included removing an element to the parcel, such as whether a pool had been filled or a structure removed.

Hillsborough County, Florida, is not the only U.S. jurisdiction applying desktop tools to support assessments; others like the Los Angeles County Assessor's Office are innovating different techniques.

—Source: Henriquez, Miller, and Johnston undated.

Tyler Technologies, the implementation team will need to devote additional personnel resources to write and define requirements and in testing the software features and functionality to ensure the final product is of acceptable quality. A go-live on the new iasWorld will also require a large amount of data to be converted to the new platform by the vendor. Mapping these data and having a detailed conversation and digitization plan will be critical to a successful and timely software go-live.

Tyler Technologies should develop a detailed Critical Path to Go-Live Plan, with the elements stated above and with the written commitment of CCAO to match supporting resources to ensure completion of the project by the end of 2019.

Fully Leverage the GIS Capabilities of the Cook County Government

Parallel to the iasWorld implementation, CCAO can more broadly utilize Cook County Government's foundational GIS platform. By utilizing the GIS platform, CCAO can more accurately capture data, better query parcel records, better visualize valuation patterns, enhance data quality, and improve the planning and analysis function. Some of these benefits are further explained in the improvement areas on Data Quality and Valuation Modeling. For the immediate purpose of adapting technology, CCAO can focus on two specific areas: desktop review and data verification.

Desktop review generally refers to the inspection of properties from an office by accessing a computer software platform, in this case the GIS platform, as either a supplement to or replacement of field team inspections. A review occurs through analyzing imagery (ortho, aerial, or street view) to inspect the properties using different software toolsets. As stated earlier, it is *not the recommendation* of IAAO Consulting that CCAO invest only in adding additional field staff, because the expense and also the time to onboard, train, and conduct the field work will be too great. Rather, through desktop review, the rate at which inspections can be conducted is increased and the cost of those inspections is decreased. (See the sidebar on how the Hillsborough County, Florida, jurisdiction applied desktop to support its.)

Data verification, a process conducted utilizing desktop review, is the second area in which to invest resources because it not only supports accuracy but also adds additional property detail. Data verification is the process of checking and comparing information from field inspections against what is visible and measurable

from the GIS platform. Basic examples of this are the embedded sketches and the measurement tools in GIS that are used to compare and measure the area of a parcel or the height and width of a building.

With staff training and the use of embedded GIS tools, some immediate steps can be taken to apply desktop review and data verification techniques. **This represents a parallel path of modernization because it is not contingent on full implementation of the iasWorld system.**

Refresh Imagery—Aerial, Ortho and Street Level

Ultimately, recently collected imagery—aerial, street level, or orthogonal—is what empowers desktop review and data verification. The current street level imagery available is dated. While existing data imagery sources can serve to support desktop review, freshly captured imagery supports more accurate reviews. In the comparison of old with new imagery sets, change detection is an added functionality as well.

Working in conjunction with Cook County Government, CCAO should invest in capturing fresh data. (We expand on potential further application in the section on Data Quality.)

Enhance Web-Based Property Search for Citizens and Stakeholders

Adapting technology to improve communication with the public and critical stakeholders offers more immediate benefits to the restoration of public trust.

This is an additional area in which the GIS platform can be further leveraged, for example, by allowing taxpayers to access online maps to review and compare the valuation of their properties with that of neighboring properties. This enhancement further demystifies the valuation process. Being able to quickly compare property values in a neighborhood to their own via a web-map can help a taxpayer visualize the uniformity of value. It helps people understand their valuations—a process that has resulted in reduced appeals in other jurisdictions.

There is a precedent for this within Cook County Government. Departments have successfully leveraged the GIS platform and the capabilities of the GIS department to introduce new public services. Two examples, from the County Clerk's Office, are the PINMAP system and the Tax Increment Finance (TIF) Viewer. The PINMAP system enables better property searches through consolidating information using unique parcel identifiers and was developed with the CCAO. The TIF Viewer supports transparency and accountability in visualizing where tax dollars are going.

Within the legal framework, CCAO should explore new web-based or mobile-friendly online services for citizens to lodge appeals, request property record updates, or file exemption applications. Such services can also reduce office foot traffic and transform arduous paper trails into electronic historical recordings.

IAAO Consulting recommends CCAO organize an advisory committee with other large jurisdictions in the United States to understand practices and services that have been developed and deployed. It is, however, noteworthy that some of the limitations posed by the AS400 and current implementation of the iasWorld system could be a contingency to effectively introducing new digital-based services.

City of Cape Town, South Africa: The Ripple Effects of Data Modernization

In the mid-2000s the City of Cape Town commenced a modernization effort to implement a new CAMA system. Ten years later the consulting firm KPMG was commissioned to examine the benefits derived from this modernization effort. KPMG examined the impacts for the office, the government, and the community in general.

The office benefits were expected: the CAMA modernization shortened the revaluation cycle, saved money, closed gaps, and kept the government on pace with market changes so that more value was continually added to the tax roll. In a 10-year period, the city increased revenues by \$187 million, a 71% increase, and decreased revaluation costs by \$7.7 million.

The benefit to the government and community—more broadly and beyond the increase to tax revenue—was more surprising. The KPMG study revealed that the valuation roll data were being used for an array of ancillary purposes, more than expected. City planning had directed water services to lower valued neighborhoods. The transportation department was linking bus routes between job centers and poorer communities. The Municipal High Court was accessing the valuation roll when presiding over final inheritance estate decisions. Banks were accessing the information to make loan decisions.

An assessment modernization can have far-reaching positive benefits such as supporting jurisdictions' Smart Cities (or Smart Communities) initiatives.

—Source: Barlow 2015

Set a Technology Strategy for the Future

Many jurisdictions are adapting to and experimenting with new technologies. Open data sources and more location data are improving valuations. Applied machine learning is helping detect changes to properties and generating richer property characteristics. Artificial intelligence is being applied to predict the likelihood of property appeals.

An assessor's office also plays a critical role as a key driver of smart community/city programs, not only because the valuation data and processes underpin the property taxation (i.e., program funding) function but also because land and property information is a key data source for differing smart community/city projects. (See the sidebar on how the City of Cape Town, South Africa, modernized its valuation office and drove the value of this program across the government.)

IAAO Consulting recommends that CCAO develop a strategic technology adaption plan on how to modernize office operations by utilizing new and innovative technologies. This plan should identify the internal resource and technical gaps to achieving the desired results, and consider partnering strategies, both inside of government and outside with private-sector and nongovernment organizations (NGOs) as supporting partners to help close those resource and technical gaps.

Summary

CCAO will require additional funding from the Cook County Board of Commissioners and support from the Bureau of Technology to achieve a number of these recommendations. While the priority should be on finding the critical path for the iasWorld software platform implementation, parallel work can begin on leveraging the GIS capabilities of Cook County Government. Desktop review and data verification are two such capabilities. Data modernization hinges on the effective application of new technologies.

IMPROVEMENT AREA: DATA QUALITY

The data being used in CCAO are inadequate in both quantity and quality. The IAAO *Standard on Mass Appraisal of Real Property* (IAAO 2017) requires that the data used in mass appraisal projects be complete and accurate. Accuracy means the property characteristics collected reflect and match the market. Data form the foundation for every phase of the reappraisal process and either support that process or serve as an impediment to it. Once data are compromised, it becomes increasingly difficult to accurately and confidently produce values; this is a leading cause of inequity. Poor data quality and its ramifications for accuracy also decrease the defensibility of those values in appeals.

The fact that the CCAO's data have not been properly collected and maintained brings into question the values that flow from these data: that condition must be addressed. Data quality inhibits modernization because it causes confusion in the modeling process and results in much effort by staff to correct errors. Another issue is that if data, for example, property characteristics, are not regularly updated, analysis of the characteristics that drive value becomes increasingly difficult, compromising model accuracy. The factors driving sales, and thus the market, are constantly changing; for example, the value of a new kitchen may drive value more today than, say, in the 1960s.

In addition, not only are the data not of high quality, but also the quantity of data, that is, the number of characteristics for each parcel, is lacking. Because property characteristics have not been updated, in some cases in decades, the impact on modeling is substantial. Inversely, updating allows an office to concentrate on calibrating and fine-tuning data to most accurately estimate value.

The following are recommendations on how CCAO can address both the quantity and quality of data.

Modernize the Data

In the section on Staffing and Skill Development we addressed the need to increase staff to manage field inspections to ensure data are collected accurately and efficiently.

As with other aspects of data modernization, new sources of data are needed. A first step would be to acquire multiple listing services (MLS) sales data. A budget will need to be allocated for acquiring these data. A second step would be to search for and discover sources of property characteristics. The more data points available, the better the values generated by modelers. This includes the sheer quantity of data: the number of characteristic types, the number of properties included, and the frequency of updates (time stamps).

Cook County Government already has oblique imagery for most, if not all, of its parcels. Better utilizing that imagery, and adding fresh street level imagery, will allow trained staff to measure buildings at the desktop while other appraisers can use the images to rate the relative construction quality and physical condition of the improvements. IAAO Consulting recommends that imagery be updated no less than every six years in order to ensure that what is viewed at the desktop matches reality in the field. Cook County Government requires reassessment every three years. (See the sidebar on the next page concerning efficiency gains from using oblique imagery.)

CCAO should also explore sources of open data, which are free and produced from authoritative sources, commonly government agencies or NGOs. (This is further addressed in the following section on Valuation Methods.)

Introduce Quality Control Measures

Every data collection activity, whether conducted in the field or from the desktop, should be subject to review by trained supervisors. IAAO standards contain guidelines for data accuracy that should be adopted and enforced by CCAO. All staff should be encouraged to report perceived data problems, and those should be dealt with immediately.

Property owners should be encouraged to review property characteristics that are published on the website and report any disparities. Assessment staff should be prepared to respond quickly to those reports to garner public confidence in the Office.

Other data quality measures should include developing reporting mechanisms on how to capture and filter outliers, that is, properties with unique characteristics, such as a ten-car-garage house, which is not a typical or useful property for comparison.

Performing frequent sales ratio studies is another quality control measure, because it could lead to identifying data quality issues for specific areas that show irregular results.

Gain Access to Verified Sales Transactions

CCAO should work toward gaining access to transaction information in the shortest time possible. Transaction sales represent an agreement between two parties on the value of a parcel as it exists as of the date of the sale.

It may take a change in the law, but the Office would gain a tremendously if a copy of every real estate transfer were sent directly from the office where the transfer is registered to the Assessor's office. (The end-note is an excerpt on the IAAO *Standard on Verification and Adjustment of Sales*.³) This would allow a more rapid processing of every sale in the County. In addition, the decision to include or exclude a given transfer for ratio studies or market analyses can be made by the CCAO's staff.

Acquiring sales transaction information will involve exploring multiple sources, training staff in reading the accompanying legal documents, and discerning whether the transfer represents a usable sale. Until the Tyler Technologies iasWorld system is fully implemented, sales information should be stored electronically on a dedicated secure computer system. The information stored should include all current property characteristics for the parcel(s)

Oblique Imagery: Bringing Properties to Scale

In 2017 EagleView, a purveyor of oblique orthographic imagery, generated an analysis of the cost and revenue gains from applying oblique imagery to property reassessment.

Oblique imagery is aerial imagery captured at a 40 percent angle with multiple images displaying different angles of a building. These images display the depth perception for structures, unlike traditional flat imagery, which is less expensive than aerial or satellite imagery. Images are georeferenced to the ground, which allows for height and width measurements.

Common uses of oblique imagery include sketching property characteristics, inspecting parcels for new buildings, using imagery in appeals cases to show property changes, and in disaster response and mitigation to assess damages.

The North Carolina Department of Revenue applied ortho imagery for its reassessment in 2017. The department's per-parcel reassessment cost was reduced from \$21 per parcel to \$13.50. This represented a savings of \$1,575,000. The department also discovered tax revenue of \$1,369,551, a total revenue benefit of \$2,944,511.

An investment in oblique ortho imagery can be considered an investment in efficiency, cost, and revenue gains.

—Source: Ford 2017

DEFINITION: SALES-RATIO STUDY

A study of the relationship between appraised or assessed values and market values. Indicators of market values could be either sales (sales ratio study) or independent "expert" appraisals (appraisal ratio study). Of common interest in ratio studies are the level and uniformity of the appraisals or assessments. Such studies serve as a good indicator of the equity in the assessment process.

involved, as well as the characteristics of the property transfer. It is important to store the parcel record along with the known circumstances surrounding the sale, such as price and dates.

Source Additional Income and Expense Data and Accurate Capitalization Rates

This process can serve both residential and commercial appraisals, but capacity should be added on the commercial side to identify, collect, and store income and expense information.

IAAO standards advise that information relative to a specific business should be held in accordance with the law, which may mean approaching the legal department to create a nondisclosure form that can be handed to property owners as well as storing it on a dedicated computer system to which there is limited access.

Summary

An office cannot generate accurate market values without sales data; a priority should be to acquire MLS sales data. In addition, CCAO should acquire or source more data on property characteristics; this is both a quality and quantity issue. Fresh street-level imagery should be budgeted for and acquired. According to IAAO standards, CCAO would benefit greatly from receiving a copy of each real estate transaction as well as adequate income and expense information for commercial properties.

IMPROVEMENT AREA: VALUATION METHODS

One of the main duties of an assessor's office is to determine the value of real estate for property taxation purposes. Striving to employ the best practices in mass valuation is an ongoing and ever-evolving process and a key component of any valuation office's planning process. The better the estimates of values produced through improved mass appraisal methods, the greater the fairness, equity, and uniformity of any reassessment.

Ultimately, more accurate initial valuations can improve taxpayer understanding and acceptance of an assessor's office methods and practices, and should decrease the volume of annual appeals as valuations are more fair and uniform. Of course, other external factors, such as large increases in value, may counteract this expected outcome.

One area of office operations that suffers from a lack of attention is valuation development. In fact, as a CCAO staff member noted, the previous administration defaulted to a position of valuation by appeal. With the new Assessor and with the help of a highly motivated and talented technical staff, this situation can be corrected.

The following are recommendations on how to improve valuation methods.

Use Sales Verification for Valuation Modeling

As recommended in the preceding section, the Office needs to hire additional qualified staff to create a sales verification team as part of the valuations department. This team should be closely aligned with the data department performing the sales analysis. The goal is to assist in the preliminary examination and verification of sales for use in modeling development for value estimation.

Sales verification procedures can follow industry best practices, but with the extreme volume of annual sales (100,000 plus annually), utilizing technology to analyze sales is a cost-effective approach to developing a much greater capacity for locating, identifying, and analyzing sales within the County. The analysis that traditionally was performed on tabular sales data can now be expanded with spatial technology solutions.

For that reason, we further recommend the following actions.

Pair Sales Verification and Modeling with Geospatial Analysis

Sales verification and best practices in statistical testing can now be enriched through mapping sales data and performing analysis commonly referred to as geospatial data analysis. Spatial analysis (i.e., adding a simple geocode to plot existing data on a map) offers clues to locational variance in sale prices due to travel, time, and distance and factors external to the property. It relates back to the real estate agent's mantra: location, location, location.

Spatial sales analysis is further complemented when additional open data elements are added to the analysis to further define external location factors affecting real estate values. These may include available sources of data, say, on household income, noise pollution, or traffic counts. Real estate decisions do consider locational influence, such as walking distance and time to public transit or distance to a city center. All these potential value influences can improve model accuracy and can now be added through spatial modeling with little added costs.

Geospatial sales analysis can serve both residential and commercial analysts in defining economic patterns in localized markets for the creation of more defined and quantified guidelines for valuation estimation.

Begin Applying Spatial Valuation Modeling

Considering the current expertise within CCAO and the availability of the Cook County Government's GIS, spatial modeling of data is a next logical step in enhancing the valuation process.

The possibilities are enormous; using additional and open data, external location factors can be developed to supplement or replace current neighborhood codes or commercial zones. Apartment, commercial, and industrial models can be further developed in expanded regions to improve sales samples. Mapped income and expense data analysis can also improve explanations as to how value was developed in various locations throughout the county.

Mapping value estimates and the components used to develop value also gives taxpayers a visualized picture of the valuation process with an easier and more effective format for conveying information. This can serve to demystify the valuation process.

The ability to analyze data spatially will improve every part of the valuation process from defining market areas, to identifying outliers, to creating and using location variables in statistical and regression modeling.

Hire a Commercial Data Scientist

Such a person can specialize in acquiring additional resources for commercial valuation. Augmenting reliable apartment- commercial-, and industrial-related data sources will assist in future valuation development, particularly in mass appraisal development. As the Office continues to add capacity to commercial data components, with a concatenation of outside data sources, industry reports, and increased property information requirements, the Office can ultimately expand to using commercial modeling as an additional tool for value estimation.

As stated before, the more information obtained for valuation development, including income and expense data on properties, accompanied by data analysis to develop property estimation factors, the greater the stabilization and support of income-producing property valuation guidelines. A commercial data scientist should continually collect comparative practices and examples from other jurisdictions to benchmark best practices; for example, reviewing commercial reports used by other jurisdictions can also assist with future reporting design.



The more information obtained for valuation development . . . the greater the stabilization and support of income producing property valuation guidelines.”

Create Valuation Guidelines and Operating Procedures

The Office needs to develop written guidelines for initial valuation procedures and the review of property

appeals. Such guidelines for valuation staff in all departments should be consistent and based on best practices. This can be achieved by employing industry practices or potentially hiring an industry expert, and by collecting manuals and guidelines from other jurisdictions as examples for guideline development.

All valuation and support processes and procedures should be clearly documented and available to staff. This is essential to the stability of the valuation function, which must be defended and replicated year after year. The process of documenting procedures will assist staff to focus on every step in their processes, and will help them identify those procedures that work as well as those that need further development. Written guidelines ensure the continuity of those processes that are successful and identify internal control and oversight points of contact critical to internal value verification.

Invest in Grade Determination

The income approach is highly dependent on the selection and implementation of capitalization rates. This process must begin with the accurate collection of investment-grade information on commercial parcels. Few jurisdictions have the capacity to perform a comprehensive capitalization rate study that may require the analysis of multiple markets covering several states, depending on the type of property under analysis.

In order to have this study completed in a timely manner, it is advisable that it be performed initially by an expert consultant or firm.

In the long term, after obtaining additional data, commercial staff can continue to identify and assign investment grades and develop rates for all commercial structures. Criteria for grade determination should be developed by experts and commercial department leaders utilizing best practices. Grade determination ultimately will also help stratify sales and further identify income-producing property for comparison.

Improve on Land Valuation

With the acquisition of additional data, modeling should be developed for both improved and vacant land to develop market-derived locational values and adjustments. Information can also be used to build improved land valuation models or schedules. When considering all three approaches in valuing any property, the land value forms a significant part of the cost approach. Sound land value estimates developed by geographic area through spatial analysis also helps to establish the influence of location within all market modeling. After additional data scientists have been hired, in-house land valuation staff can assist data analysts in improving subject matter knowledge for model development. This includes interpreting, applying, and augmenting information.

Integrate the Cost Approach through iasWorld

The Tyler Technologies system has the capability of implementing Marshal & Swift cost approach software. CCAO should work with Tyler Technologies and CoreLogic, which provides this cost approach software, to ensure that is part of the implementation.

Estimated values utilizing the cost approach are easy to generate and apply and can benefit unique property types and new construction pricing, generating cost values that can be considered sound.

Utilize iasWorld to Generate Comparable Sales for Appeals Analysis

CCAO can improve the internal procedures for the selection of comparable sales. The Office should review current procedures in the automated selection of sales comparisons and create adjustments to maximize current offerings and standard operations. Once implemented, the iasWorld system should provide a robust comparable selection process for residential property where there are generally a sufficient number of sales.

Set Quality Control Measures for Valuation

Control measures can include performing ratio studies to refine the valuation strategies throughout the reassessment cycle. GIS can also be utilized to plot ratio studies by location. Plotted ratio studies can be used for the visual inspection of potential inequities to concentrate time, money, and efforts only on areas that are suffering. Plotted ratio studies also offer a more in-depth analysis of, for example, inequities in neighborhoods along transportation lines, close to industrial properties, or near airports.

The results from ratio studies (from the beginning to the end of the assessment cycle) may be stored as documentation, which offers a narrative to the valuation process. It justifies adjustments made for areas, improves defensibility, and promotes trust in the community.

Reduce the Number of Minor Property Classification Codes

As the public gains confidence in the Office, the number of minor property classification codes should be reduced. Regarding the origins of minor property classes, staff members suggested they were originally derived from cost schedules, the implementation of initial mass appraisal model development, and the reflection of common property types found within the County.

Sales analysis and parcel counts analysis will assist in recommendations for reductions in classes, but must be conducted with the cooperation of other property tax administration offices.

It is often difficult for the average property owner to understand how property values translate into property tax liabilities. Every additional step in the process from valuation to taxation contributes to making that process more opaque. Each of those steps also require the expenditure of public funds to complete, which adds to the final tax bill. For these reasons, CCAO should work with the County Board of Commissioners to reduce the number of minor property classifications; this will also serve to demystify the valuation process.

Summary

Given the in-house valuation modeling expertise of CCAO staff and the Cook County Government GIS platform, CCAO has the unique resources to advance the use of geospatial modeling techniques. CCAO should aspire to apply these geospatial-related recommendations to leap-frog valuation processes. The potential benefit is an increase in the efficiency, accuracy, and defensibility of values. A number of these recommendations are directly tied to demystifying the valuation process, which should serve to decrease the number of appeals over the long term. Written guidelines and operating procedures are an immediate need for increasing industrial and commercial information for valuation development.

TABLE 2. SUMMARY OF CRITICAL AREAS OF IMPROVEMENT AND RECOMMENDATIONS

Critical Area of Improvement	Recommendation
Staffing and Skill Development	<ul style="list-style-type: none"> ▪ Increase the number of staff. ▪ Develop skills and professional development programs. ▪ Define job descriptions and roles.
Adapting Technology	<ul style="list-style-type: none"> ▪ Find the critical path to deploy the Tyler Technologies software platform. ▪ Fully leverage the GIS capabilities of the Cook County Government. ▪ Refresh imagery—aerial, ortho, and street level. ▪ Enhance web-based property search for citizens and stakeholders. ▪ Set a technology strategy for the future.
Data Quality	<ul style="list-style-type: none"> ▪ Modernize the data. ▪ Introduce quality control measures. ▪ Gain access to verified sales transactions. ▪ Source additional income and expense data and accurate capitalization rates.
Valuation Methods	<ul style="list-style-type: none"> ▪ Use sales verification for valuation modeling. ▪ Pair sales verification and modeling with geospatial analysis. ▪ Begin applying spatial valuation modeling. ▪ Hire a commercial data scientist. ▪ Create valuation guidelines and operating procedures. ▪ Invest in grade determination. ▪ Improve on land valuation. ▪ Integrate the cost approach through iasWorld. ▪ Utilize iasWorld to generate comparable sales for appeals analysis. ▪ Set quality control measures for valuation. ▪ Reduce the number of minor property classification codes.

CONCLUSION

The elected officials and citizens of Cook County had raised concerns regarding perceived inequity in the Cook County Assessor's Office. The citizens of Cook County elected Mr. Fritz Kaegi as Assessor with a mandate to address inequity. Since the election, Assessor Kaegi and key members of his staff have worked tirelessly to do just that.

This IAAO Consulting Practices and Procedures Audit has outlined and detailed four critical areas of improvement to lead the Office through a multi-year modernization program:

- Staffing and skill development
- Adapting technology
- Data quality
- Valuation methods.

For each specific critical area, detailed recommendations have been provided.

A leading recommendation is to determine the critical path for implementing the Tyler Technologies iasWorld platform. This move will provide a stable platform on which the staff can develop the recommended data collection, maintenance, and quality assurance efforts. IAAO Consulting is aware that the new CCAO leadership has already taken important steps by assigning a dedicated director-level staff member to manage this implementation.

Parallel to the iasWorld implementation, CCAO should modernize its data. Most specifically, acquiring sales data is an imperative because these data are critical to improving valuation methods. In addition, IAAO Consulting has recommended that CCAO receive all new sales transactions as recorded by other government agencies and establish processes for reviewing these transactions.

Leveraging the GIS platform and capabilities of Cook County Government will assist CCAO in continuing on this parallel development pathway. To augment field-staff resources, using GIS CCAO can conduct a desktop review of properties, which will increase the speed at which properties can be assessed and with data verification serves to add more property characteristics.

Modernization will also require the recruitment, training, and support of additional highly skilled and dedicated staff. At present, staffing levels at CCAO do not meet the IAAO Standard on Mass Appraisal of Real Property.

Addressing the issue of data quality will provide an immediate improvement for the valuation process. This action, along with fine-tuning methods to derive values, will put CCAO on a solid path to generating more uniform values. Uniform values will reduce appeals, especially when coupled with public outreach that can be achieved by new digital services, especially those designed to demystify the valuation process.

The task ahead is monumental, and the financial and resource commitment for modernization is substantial. Nevertheless, the gains for Cook County deserve the investment in resources—both human and capital. Through modernization, CCAO can by sharing more accurate and authoritative land and property information catalyze other government agencies and programs, such as public safety, public services, and community resilience planning programs. Substantial gains will also be realized from having a more efficient and transparent assessment process that supports taxation and the funding of government programs and services. Finally, modernization will accomplish the intent of a return to equity through a more fair and equitable assessment process for the citizens of Cook County.

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APPENDIX: RECOMMENDED COURSES AND EXPERIENCE BY POSITION

The courses, workshops, knowledge, and experience recommended in this appendix are meant to be a guide for the background, preparation, and formal education necessary for assessment administrators, appraisers, and support personnel to achieve competency. They are not all-inclusive nor should they act as a barrier to the furthering of formal educational knowledge. Oftentimes, a person's workplace responsibilities dictate further areas of recommended study.

Appraiser—Entry level

Education

Bachelor's degree or combination of college and experience equivalent to a degree.

Experience

Real estate, building construction, GIS/mapping, or mass appraisal.

Skills and Knowledge

Algebra, mathematical ability, computer literacy, and good written and oral communication skills.

Continuing Education Required

- Course 101. Fundamentals of Real Property Appraisal
- Course 300. Fundamentals of Mass Appraisal
- Course 500. Assessment of Personal Property*
- Workshop 150. Mathematics for Assessing Officials
- Workshop 151/191. Uniform Standards of Professional Practice (National)

Continuing Education Recommended

- Course 102. Income Approach to Valuation
- Course 112. Income Approach to Valuation II
- Course 201. Appraisal of Land
- Workshop 162. Marshall & Swift Cost Approach (Residential)

Appraiser—Senior

Education

Bachelor's degree in mathematics, communications, economics, statistics, accounting, finance, computer science, business administration, geography, or real estate or combination of college and experience equivalent to a degree.

Experience

Real estate, building construction, GIS/mapping, or mass appraisal.

Skills and Knowledge

Mastery of all three approaches to value, algebra, mathematical ability, computer literacy, and good written and oral communication skills.

Continuing Education Required

- Course 101. Fundamentals of Real Property Appraisal
- Course 102. Income Approach to Valuation
- Course 112. Income Approach to Valuation II
- Course 201. Appraisal of Land
- Course 300. Fundamentals of Mass Appraisal
- Course 500. Assessment of Personal Property*
- Workshop 150. Mathematics for Assessing Officials
- Workshop 151/191. Uniform Standards of Professional Practice (National)
- Workshop 162. Marshall & Swift Cost Approach (Residential)
- Workshop 157. The Appraisal Uses of Excel Software
- Workshop 158. Highest and Best Use

Continuing Education Recommended

- Workshop 163. Marshall & Swift Cost Approach (Commercial)
- Everything not listed under required as may pertain to specific job duties

Appraiser—Supervisor

Education

Bachelor's degree in mathematics, communications, accounting, finance, computer science, business administration, or real estate or combination of college and experience equivalent to a degree.

Experience

Real estate, building construction, GIS/mapping, or mass appraisal.

Skills and Knowledge

Mastery of all three approaches to value, algebra, mathematical ability, computer literacy, management, and good written and oral communication skills.

Desirable

Master's degree, professional designation, or IAAO Accredited Member Status

Continuing Education Required

- Course 101. Fundamentals of Real Property Appraisal
- Course 102. Income Approach to Valuation
- Course 112. Income Approach to Valuation II
- Course 201. Appraisal of Land
- Course 300. Fundamentals of Mass Appraisal
- Course 500. Assessment of Personal Property*
- Workshop 150. Mathematics for Assessing Officials
- Workshop 151/191. Uniform Standards of Professional Practice (National)
- Workshop 162. Marshall & Swift Cost Approach (Residential)
- Workshop 157. The Appraisal Uses of Excel Software
- Workshop 158. Highest and Best Use

Continuing Education Recommended

- Course 400. Assessment Administration
- Course 402. Property Tax Policy
- Workshop 171. IAAO Standards of Practice and Professional Ethics Supplement
- Workshop 452. Fundamentals of Assessment Ratio Studies

Chief Assessment Administrator

Education

Bachelor's degree in mathematics, communications, accounting, finance, computer science, business administration, or real estate or combination of college and experience equivalent to a degree.

Experience

Real estate, building construction, GIS/mapping, or mass appraisal.

Skills and Knowledge

Algebra, mathematical ability, computer literacy, complex problem solving, management, administration, public relations, and good written and oral communication skills.

Desirable

Master's degree, professional designation, or IAAO Accredited Member Status

Continuing Education Required

- Course 101. Fundamentals of Real Property Appraisal
- Course 102. Income Approach to Valuation
- Course 112. Income Approach to Valuation II
- Course 201. Appraisal of Land
- Course 300. Fundamentals of Mass Appraisal
- Course 400. Assessment Administration
- Course 402. Property Tax Policy
- Course 500. Assessment of Personal Property*
- Workshop 150. Mathematics for Assessing Officials
- Workshop 151/191. Uniform Standards of Professional Practice (National)
- Workshop 162. Marshall & Swift Cost Approach (Residential)

Continuing Education Recommended

- Workshop 157. The Appraisal Uses of Excel Software
- Workshop 171. IAAO Standards of Practice and Professional Ethics Supplement
- Workshop 403. Property Tax Policy Alternatives and Modules
- Workshop 452. Fundamentals of Assessment Ratio Studies

Assessment Support Personnel

Assessment support personnel can cover a myriad of disciplines from the most technical to routine clerical support. All these disciplines have their own requirements and areas of specific expertise. Listing all the possibilities throughout the international community is beyond the scope of this document. For example, certain technical appraisal assignments such as utilities and mines may require additional specialized subject matter expertise.

Education

Ranging from a high school diploma or equivalent to a bachelor's degree in mathematics, statistics, communications, accounting, finance, computer science, business administration, geography, or real estate or combination of college and experience equivalent to a degree.

Experience

Real estate, building construction, GIS/mapping, mass appraisal, financial services, or specific areas of expertise relevant to the position.

Skills and Knowledge

Algebra, mathematical ability, computer literacy, and Algebra, mathematical ability, computer literacy, and good written and oral communication skills.

Continuing Education Required

- Course 101. Fundamentals of Real Property Appraisal
- Course 500. Assessment of Personal Property*
- Workshop 150. Mathematics for Assessing Officials
- Workshop 171. IAAO Standards of Practice and Professional Ethics Supplement

Continuing Education Recommended

- Course 300. Fundamentals of Mass Appraisals



ENDNOTES

- For example, making each residential appraiser responsible for 10,000 parcels per year translates into a requirement of 151 residential appraisers. If supervisors are required for every 10 appraisers, then 15 residential supervisors are needed plus approximately 8 persons in the clerical support area.

Residential Parcels	Parcel Responsibility	Appraisers Needed	Employee Responsibility	Supervisors
1,508,286	10,000	151	10	15

The gross numbers are not as high on the commercial side of the operation, but the complexity of the properties reduces the parcel count per appraiser by at least one-half that of the residential appraisers. At 5,000 parcels per appraiser and 119,890 parcels, there is a perceived need for 24 appraisers, six (6) supervisors and three (3) clerical support persons.

Commercial/Industrial Parcels	Parcel Responsibility	Appraisers Needed	Employee Responsibility	Supervisors
119,890	5,000	24	6	3

If residential appraisers are assigned parcels by geographic area and commercial appraisers by property type, then it is logical for sales and appeals to be assigned in the same way

- The Standard on Mass Appraisal of Real Property:*

Section 5.3.1 states, The hardware should be powerful enough to permit computerization of appropriate applications of the cost, sales comparison, and income approaches, as well as providing word processing, data inquiry, and activity summaries.

- Standard on Verification and Adjustment of Sales: Section 2*

In jurisdictions that do not have laws mandating full disclosure of sales data, assessing officials work under a severe handicap and should seek legislation that provides for such disclosure (see the results of the 2008 Survey of Ratio Study Practices [Technical Standards Committee IAAO 2009]). In addition, jurisdictions that have disclosure, but not adequate sale disclosure documents should work toward that goal. The terminology for determining whether or not a sale meets the definition of a valid transaction differs throughout the industry (validation, verification, confirmation, qualification, screening, and so on); however, for purposes of this standard, the term verification is used. It is important to remember that all sales should be considered candidates as valid sales unless sufficient information can be documented to show otherwise. While it is imperative that sales be verified uniformly and accurately, it is also important to process and verify sales in a timely manner, so they are available for analysis. Sales should be trimmed for outliers during the statistical phase, not during the verification phase of a mass appraisal or sales ratio study program.



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