

PRACTICES AND PROCEDURES REVIEW

of the Philadelphia, Pennsylvania
Office of Property Assessment

May 2022



PROFESSIONAL
CONSULTING SERVICES
OF IAAO, LLC

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The IAAO is the primary publisher, educator, and leader of standards in the field of mass appraisal and assessment administration. As a standard-setting organization, the IAAO has published fifteen standards aimed at improving assessment practices. As an educator, the IAAO has established a curriculum of courses and workshops to supplement university-level and professional training for individuals interested in pursuing a career in property tax administration. We offer the only comprehensive program of mass appraisal courses in the world. In addition, we offer special seminars and an international conference on assessment administration annually.

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Several routes are available to designations, all of which involve some independent project, such as a demonstration appraisal or a mass appraisal case study, in addition to the successful completion of one of the prescribed curricula. The IAAO offers six designations: a generalist designation requiring demonstrated competence in all areas of assessment—Certified Assessment Evaluator (CAE)—and five specialist designations: Mass Appraisal Specialist (MAS), Residential Evaluation Specialist (RES), Cadastral Mapping Specialist (CMS), Personal Property Specialist (PPS), and Assessment Administration Specialist (AAS).

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

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EXECUTIVE SUMMARY

An RFP was issued by the City in the summer of 2021 and reissued after failing to receive any responses. PCSIAAO responded in the Fall of 2021 and was awarded the contract in November of 2021.

A questionnaire was sent to the Office of Property Assessment (OPA) and arrangements were made for an onsite visit to be conducted during the week of December 6. Frederick Chmura, AAS, FIAAO accompanied Larry Clark, CAE, FIAAO as they interviewed key staff members of the OPA staff to expand upon the responses to the questionnaire. This report is derived from the questionnaire responses, notes from the interviews and review of documents provided by that office.

A similar review was conducted by IAAO in 2011 and office responses to the recommendations from that report as well as subsequent studies performed by J.F. Ryan Associates, Inc., the Office of the Comptroller for the City and Robert J. Gloudemans were reviewed as part of this project.

The best way to describe the environment of the Office of Property Assessment for the City of Philadelphia is that it is in a state of transition. The Chief Assessment Officer, James Aros, Jr., is leading a staff of dedicated people who are all interested and invested in the improvement of the OPA valuation process. They have either completed or are actively engaged in completing the recommendations from each of the reports mentioned above, the most significant and far reaching of which is installation of a new computer assisted mass appraisal (CAMA) system. The physical installation itself is difficult, but complete adaptation to the requirements of a new system will take several assessment cycles. Mr. Aros is new to his current position but, to his credit, he has worked very hard to move the office forward toward meeting mass appraisal industry standards. Mr. Aros' many years of experience in the department has been an asset in this process.

This report would not have been possible without the cooperation of the staff of the Office of Property Assessment led by James Aros, Jr., Chief Assessment Officer. Thank you to all who participated in the interviews including Kate McGlinchey, Chief of Staff, Kevin Keene, Mass Appraisal Manager, Ellyn Avila, Project Manager, Herman Siewert, Deputy Administrator – Commercial and Industrial, Jaye Divine, Sharon Swann and Monica Williams, Deputy Administrators – Residential, Joan Engart, Condo Unit, Vaiva Koc, Supervisor – Sales Validation Division, Nikole Adams, Change Management Lead, Vince Battestelli, Supervisor – Institutional and Governmental Exemptions and Special Use Properties, Valerie Vernon, Supervisor – Quality Control, Tom Dougherty, Office of Information Technology, Bindi Shakya, Analyst – Mass Appraisal Division, Philip Daniel - GIS.

ENVIRONMENT

The assessor's office does not work in a vacuum. In fact, the situation is just the opposite. The assessor is actually an administrator of the property tax laws, rules and regulations that cover his or her jurisdiction. Therefore, a review of that jurisdiction requires the reviewer to know and understand whether and to what extent those laws, rules and regulations limit the ability of the assessor to meet industry performance standards.

Both the responses to the questionnaire and interviews with staff indicate that Pennsylvania statutes do not represent an impediment to the operation of the assessor's office. They allow for the appraisal of all real property at market value without the additional application of a classification system. There are, however, several exemptions, partial and full, that are managed by the office that occupy a significant amount of staff time diverted from valuation efforts.

The single most significant environmental issue the office faces relates to the timing of valuations. In any given calendar year, sales to be used in the valuation process are compiled and verified through the end of July. Valuation modeling is then conducted to estimate values to be certified in March of the following year for an assessment date of January 1 of the next year. This creates the untenable situation of attempting to estimate the value of properties eighteen (18) months following the last valid sale.

Recommendations

Our first recommendation is that the certification date be moved to March 31 following the January 1 assessment date.

This move will assist in improving the value estimates and will enhance the capability of the office to move toward reassessing every other year. Although IAAO Standards call for annual reassessment, the goal is to establish a regular program that allows for more accurate tracking of the real estate market.

MANAGEMENT AND STAFFING

Management is the direction of human and nonhuman resources in a manner that will accomplish a specific goal or objective. The chief assessment officer of a jurisdiction is responsible for making the most efficient use of all available resources to meet the goal of accurately and equitably assessing property. In a jurisdiction the size of the City of Philadelphia, that means establishing, in writing, clear processes and procedures, and properly allocating physical and human resources to execute them.

OPA staff have begun the process of developing written procedures to cover various activities. We found evidence of fragmented efforts to memorialize aspects of the office operations. That should continue in this period of transition; and we would urge management to establish a central electronic repository for all such documents and, as soon as possible, appoint a librarian to compile and edit them into a consistent, searchable format that is made available to all staff via the OPA intranet.

Staffing an assessment office is a problem from the standpoint of raw numbers and skills. Additional staff have been hired since the issue was raised in the last audit, but Mr. Aros feels the current number remains insufficient to meet the needs of his office. In addition, virtually all of the staff we interviewed expressed a desire for additional training, both general appraisal training and specific training on the CAMA system being installed.

Evaluation staff are required to receive a certain amount of training to attain the Certified Pennsylvania Evaluator license in order to retain their position. This license requires an individual to have completed 90 hours of classroom training in appraisal subjects at the time of application for the license. The applicant must pass a comprehensive examination covering all phases of the appraisal process and the assessment function. Following receipt of the license, the individual must complete 28 hours of continuing education during each biennial period, including the 7-hour National Uniform Standards of Professional Appraisal Practice (USPAP) course and 2 hours of Pennsylvania Assessor law.

The office addressed some of their management issues through the Project Manager position. This individual is responsible for overseeing major projects the office undertakes. She has been active in the projects for which Tyler Technologies was contracted, such as data collection and implementation of the new CAMA system. She will be working with Tyler as they complete additional data collection projects for the City.

In 2019 the office developed an “Action Plan for Improving the Quality of Assessments” that included action items to implement the reforms recommended in the Gloudemans’ report. Many of those action items have been completed, while others are in process or have not be started.

Recommendations

- Implement a long range planning program. Mr. Aros, his staff and the city administration should be commended for the efforts the staff of OPA have put forward in responding to previous audits of the office and the support they have received from the city administration. While that effort must continue, it is equally important to begin looking to the future. Addressing the problems of the past should naturally flow into goals that become plans for the future. That plan should include a section devoted to practical, theoretical and ongoing education of the staff.
- This process should involve every section of the office contributing to the overall plan. This will help ensure all needs are met and that there is broad based support for the final product.
- The administration should be commended for beginning the process of creating written processes and procedures. This should continue and accelerate to the point where every employee of OPA has electronic access to the processes and procedures that directly apply to their job. These written procedures should support an updated staff chart and a completed set of written job descriptions.
- Implementation of the new CAMA system may create the need for changes in the structure of OPA. Management staff should be aware of this possibility and note areas where the functions of a unit and or its interactions with other units of the organization change due to this implementation, so they will be prepared to make the necessary changes when implementation is complete. Experience suggests that management should not anticipate a reduction in staff resulting from this CAMA implementation as much as a re-ordering of staff responsibilities.

QUALITY ASSURANCE

The IAAO Standard on Ratio Studies states “Quality Assurance/control measures include data integrity review, assessment level and uniformity analysis, and computer assisted mass appraisal (CAMA) system performance testing, among others.”

Quality control is handled at the front end of the valuation process and following value estimation. The Office of Information Technology of the City provides a download of data from the assessment administration records. This data is analyzed by members of the Sales Validation Division for any problems, and they attempt to correct discrepancies in things like deed descriptions before sending them on to the appraisal staff. Analysts within the Mass Appraisal section further test the data for outliers and other issues that may create valuation issues. That section also conducts ratio studies on final values to judge their accuracy and equity. What appears to be missing is a clear set of guidelines for actions taken in the interim.

Recommendations

- Written policies should be established within each division of OPA clearly defining high quality output and how that is achieved. IAAO Standards should serve as a basis for such guidelines.

INFORMATION TECHNOLOGY

The City of Philadelphia, like other jurisdictions of its size, has a central Office of Information Technology with a staff member of that office assigned to the Assessor’s office. The latter has relied heavily on the OIT for assistance in retrieving the data it needs to carry out its functions and everyone interviewed was pleased with the process. Some of those processes will change with the completed implementation of the new CAMA system as that data will migrate from other City systems directly into CAMA. For those data downloads that must continue, there was a felt desire to have them occur on a nightly basis.

The Change Management Lead, who serves as liaison between the office and Tyler Technologies was very optimistic about the new system. Nikole Adams had experienced very good cooperation with the Tyler technical support staff and had a great deal of confidence in the ability of the new system to meet their needs. She has prepared a list of frequently asked questions and uploaded a library of Standard Operating Procedures to an internal training site. According to her, the office is in the second phase of a three phase implementation project. This phase will involve the implementation of field data collection devices, the Tyler building sketch system, a public website dedicated to assessment and detailed property characteristic information, and the City staff will work with Tyler to configure a property record card.

CADASTRAL MAPPING

Mapping is currently handled by the GIS Services Group of the City and that group is confident it has accounted for every parcel within the city limits. They operate within an enterprise Arc-Info license and have responded well to assessment staff requests. Plans are to use that license to create dashboards for use by the appraisal staff. A public access tool called “Atlas” was developed to allow the general public access to a portion of the GIS database online.

The GIS Services Group also works with the Sales Validation Division to resolve problems with deeds. Assessment staff indicated there is no city policy that deals with discrepancies between deeded and mapped sizes.

Recommendations

- Work with the GIS Services Group as well as legal counsel to establish a policy describing how differences between deeded and mapped descriptions will be handled.

PROPERTY USE CODES, MARKET AREAS, AND NEIGHBORHOODS

A market area is defined in the IAAO Technical Standards as “An area defined on the basis that the properties within its boundaries are more or less equally subject to one or more economic forces that largely determine the value of the properties in question.” (Glossary, Standard on Automated Valuation Models)

Those same standards define a neighborhood as “(1) The environment of a subject property that has a direct and immediate effect on value; (2) a geographic area (in which there are typically fewer than several thousand properties) defined for some useful purposes, such as to ensure for later multiple regression modeling that the properties are homogeneous and share important locational characteristics.” (Glossary, Standard on Verification and Adjustment of Sales)

Recommendations

- Each reassessment cycle should include an evaluation of existing neighborhood and market area boundaries as part of the initial analysis.

PROPERTY DATA COLLECTION AND MAINTENANCE

The IAAO Standard on Data Quality states “Data collection is the foundation upon which all assessment processes are reliant. Establishing clear data collection procedures and maintaining a quality assurance program are paramount to maintaining high-quality data. Clear guidance minimizes subjectivity or differences of opinions among assessors/data collectors, while quality assurance processes review collected data to ensure procedures are followed and consistency is maintained. In addition, maintaining high-quality data assists in other evaluations of the office, such as performance audits.”

Founded in 1682, with a current population of approximately 1.6 million, the city of Philadelphia is a very old and very diverse city, which creates valuation problems in itself. Add to that the fact the assessor’s office relies on data that is outdated and has not been systematically verified in many years and the result is a strain on the ability to assess property fairly and accurately. The Office of Property Assessment has put together an outstanding team of valuation modelers whose combined modeling skills have overcome many of the data quality problems.

The current Chief Assessment Officer has taken steps to remedy some of those problems. Tyler Technologies is completing a contract to perform a complete grade and depreciation study and plans are being made to follow that with collection of sketches and square foot measurements of all structures. This data will be stored within the newly installed iasWorld CAMA system discussed elsewhere in this report. In addition, the City has contracts with Eagle View and Cyclomedia to provide aerial, oblique and street view imagery for all parcels.

Recommendations:

- The Assessor’s office should implement a regular cycle of property re-inspection in accordance with the IAAO Standards on Data Quality and Mass Appraisal of Real Property. This should be conducted in concert with timely inspection of sales and a public relations program that encourages property owners to verify some basic property characteristics on a regular basis.

SALES DATA AND RATIO STUDIES

The IAAO *Standard on Ratio Studies* states,

“Sales data are important in ratio studies and play a crucial role in any credible and efficient mass appraisal system.”

The Sales Validation Division was just recently created within the assessment office. They receive sales information on vacant land and residences from the Office of Information Technology. It is then their responsibility to validate those sales and, in doing so, to verify the property characteristics from information provided with the sale documents.

This team of five (5) valuers and one (1) support person has been the first to work directly with the new CAMA system. However, at this point, they still rely on the OIT staff to upload sales information into that system following validation. The CAMA documentation contemplates directly loading information from the city records department into the system, which will be more efficient than working with a downloaded file which must later be uploaded.

The supervisor of that division expressed the need for up to ten (10) additional staff members until the backlog is reduced to a manageable level.

OPA conducts regular ratio studies to monitor its performance. A copy of the most recent published study is included in the Appendix of this report. Their analysis group is very skillful and capable of creating sound valuation models and reflecting the results in valid ratio studies. Their primary concern is that some of the data may not be reliable.

An independent ratio study was run based on the sales the county had available and produced the following results.

RATIO STATISTICS FOR FINAL VALUE / TOTAL ADJUSTED PRICE							
Style	Sales	Mean	Median	Weighted Mean	Price Related Bias	Price Related Differential	Coefficient of Dispersion
Rows	30,641	0.930	0.932	0.927	0.006	1.003	0.111
Singles	3,108	0.941	0.939	0.915	-0.038	1.028	0.094
Twins	7,752	0.958	0.961	0.946	-0.011	1.012	0.096
Overall	41,501	0.936	0.938	0.929	0.004	1.008	0.107

The median, price related differential and coefficient of dispersion met IAAO standards for appraisal level and equity.

Recommendations:

The Sales Validation Division should receive the support needed to clear the backlog and the office should work toward the capability of performing ratio studies on a regular, even monthly basis, in order to monitor the market.

A second ratio study was conducted using information provided by the jurisdiction reflecting current values. After appropriate trimming of outliers, all the typical measures of appraisal level and uniformity lie within acceptable ranges.

RATIO STATISTICS FOR FINALMV / TASP					
	N	Mean	Median	Price Related Differential	Coefficient of Dispersion
Row	41080	0.981	0.971	1.025	0.134
Singles	3584	1.005	0.994	1.026	0.113
Twins	9188	1.001	0.992	1.014	0.107

LAND VALUATION

The office does not currently utilize the cost approach for all parcels, which results in less emphasis on land valuation. Vacant land is valued using the sales comparison approach, which is the most effective approach. Since the office has well defined market areas (zones), it is suggested they move as quickly as possible to using the land valuation tables in the new CAMA system. Creating a separate table for each zone will enhance value consistency and equity within those zones.

Recommendations

- Make maximum use of the computer assisted land pricing tables within iasWorld.

RESIDENTIAL VALUATION

The IAAO Standard on Mass Appraisal of Real Property states “The sales comparison approach is the best approach for single-family residential property, including condominiums. Automated versions of this approach are highly efficient and generally accurate for the majority of these properties. The cost approach is a good supplemental approach and should serve as the primary approach when the sales data available are inadequate. The income approach is usually inappropriate for mass appraisal of single-family residential properties, because most of these properties are not rented.”

The discussion with the three deputy administrators in charge of residential properties continued the transition theme. Each administrator supervises thirty staff members who are, in turn, responsible for all residential properties up to four (4) units within a geographic area. They are responsible for tracking characteristics changes, while actual valuation is carried out in another division.

Opinions about the new CAMA system varied, although overall, they were satisfied with it. They and their staffs are still learning how to use it and having the usual communication and data conversion problems associated with this type of transition. All three wanted both additional training and written documentation on the system. In addition, they wanted subject matter experts available to respond to user questions in a timely manner. Some of their staff struggle with navigating the new system and making effective use of its components.

Recommendation

- Continue to support the Change Management Lead in compiling and distributing frequently asked questions and answers on the new system. Having that document in a central repository that is accessible electronically by all staff and continually urging them to use it should help alleviate some of the stress of this transition.
- We recommend implementation of the cost approach module within the new CAMA system, not as a substitute for but as support for the other two approaches to value. Although the sales comparison approach is favored when sufficient data is available on the residential side as the income approach is favored on the commercial side for similar reasons, the cost approach imposes a jurisdiction wide consistency the other two cannot. The same quality and condition rating scales should be used across all zones. In addition, having the cost approach available can provide the user with immediate feedback on the consequences of property characteristic changes.

CONDOMINIUM VALUATION

Condominiums are being tracked and valued by a separate unit that currently has three (3) valuers, two (2) clerks and a supervisor. The head of that division expressed the need for additional staff, as well as frustration with the inability to understand how condominium complexes will be recorded and tracked in the new system. There was a lack of sufficient fields to store data in the old system and not a clear understanding of where data is to be stored in the new one. Specifically, there is concern about the tracking of individual units with regard to the common area amenities. This may be handled using multiple cards, one of which contains those amenities until a unit or units are sold. OPA will have to work with Tyler to resolve the latter situation.

The sales comparison approach is currently being used to value condominiums and this is preferred in the industry. However, the director would like to have the ability to consider the cost approach when there is insufficient sales information available.

COMMERCIAL VALUATION

The IAAO Standard on Mass Appraisal of Real Property states “The income approach is the most appropriate method in valuing commercial and industrial property if sufficient income data are available. Direct sales comparison models can be equally effective in large jurisdictions with sufficient sales. When a sufficient supply of sales data and income data is not available, the cost approach should be applied. However, values generated should be checked against available sales data. Cost factors, land values, and depreciation schedules must be kept current through periodic review.”

According to the Deputy Administrator, commercial and industrial properties are divided into the following divisions:

- **G Division** — Office buildings, hotels and parking garages.
- **H Division** — All industrial properties.
- **N Division** — All commercial properties including retail, auto repair garages, car dealerships, casinos, entertainment venues, fitness facilities, funeral homes, restaurants and banquet halls, and bank branches.
- **L Division** — Apartment buildings five units and up, nursing homes and continuing care facilities, low income housing, student housing and boarding homes.
- **P Division** — Properties having no more than four commercial spaces and/or 4 apartments.
- **T Division** — Commercial vacant land, railroad right of ways, cellular facilities and billboards.

All parcels are valued using either the income or sales comparison approaches, with the necessary market information being collected from various published sources, such as Costar, and from individual appraisals submitted to prosecute valuation appeals. Staff resources are occasionally augmented through contracts with outside appraisers.

The Administrator is uncomfortable with the accuracy of some of the existing property characteristic information. The commercial/industrial appraisal staff gleans useful information from whatever sources are available to them, since they do not have sufficient staff to physically inspect all subject properties. They would like to have additional staff and access to the cost approach for use when there is insufficient sales and/or income information.

Recommendations

- The office should conduct a survey to collect local income and expense information in conjunction with every assessment cycle. Published sources, while accurate, tend not to have the localized information needed by the Assessor.
- The Assessor should consider contracting for a capitalization rate study covering all major property types also in conjunction with each assessment cycle.
- The Assessor should consider implementing the cost approach within the new CAMA system. It serves as a useful check on the other two approaches and is essential for special purpose or unique properties for which this is no identifiable market

VALUE DEFENSE

The IAAO Standard on Assessment Appeals states “Assessment appeals are an important component in the assessment process. Appeals provide an opportunity for property owners to meet with the assessor to inquire about their assessments and to learn about assessment and appeal procedures. In the case of disputes about assessments, an appeal system should provide opportunities for both informal meetings with the assessor and formal hearings before independent bodies to resolve disputed issues and thus assure the public that assessments are correct, fair, and equitable.”

To its credit, the City has instituted an informal level of appeal not contemplated in state statutes. This can provide a means of correcting errors in the property record while avoiding the expenditure of time and money that a more formal appeal hearing may require, which can be a very good public relations tool. The appeal process appears to be working for both the jurisdiction and the property owners it serves.

Recommendations

- Work with Tyler to develop a standard packet of information that can be readily made available to the property owner and the hearing officer regarding the property under appeal.
- Consider moving as much of the appeal process online as possible. At a minimum, this should include the property owner filing the initial appeal and scheduling a hearing.

COMMUNICATIONS AND TAXPAYER ASSISTANCE

The IAAO Standard on Public Relations states “A public relations program in the assessment profession provides current and useful information on assessment policies and practices, as well as a means of responding to public opinion. A proactive public relations program is essential to public awareness of the assessment process and of the importance of the property tax in funding local government services. A public relations program should be an integral part of every assessment office’s work. A public relations program describes what the office does as well as how, why, and for whom its services are provided. An effective public relations program results in more accurate and thorough coverage from the media and a better-informed constituency.”

Recommendation

- Consider publishing an annual tax calendar on the City website within the Office of Property Assessment section. This should contain information relative to appeal deadlines, as well as application deadlines that occur throughout the calendar year.
- One of the most valuable communities for the Assessor’s office is the community of real estate professionals. Other jurisdictions have profited from the formation of a group representative of different facets of the community who can advise the Office on changes they see happening between each assessment cycle. This can provide a wealth of information for the OPA, along with the chance to nurture a good working relationship with a group of real estate professionals and the broader community they serve.

JURISDICTION COMPARISONS

One of the requirements of the RFP was to perform a complete and comprehensive comparable analysis with other assessment jurisdictions. By the time the RFP was finally issued and the time frame for completion was established, we were not given sufficient time to complete a comprehensive study.

Several issues should be considered in considering such a study for the future. The ideal comparison would be between two jurisdictions that operate under the same state legislation; they have the same mix of property types; they receive the same level of support from the governing authority and have access to the same talent pool from which they can hire staff. All of these factors affect the operation of the assessor’s office, which is why IAAO teaches the use of a formula instead of suggesting actual staff numbers.

The formula is $S = P \div (R \times T)$

Where:

S = Staff number **P** = Parcels or accounts **R** = Rate of completion **T** = Time provided for completion

This formula allows the local assessor to adjust for the differences referenced above. For example, typical data collection on residential parcels may be accomplished at the rate of 20 parcels per day. If the assessor has 90 days to complete that phase of the operation, one data collector can be expected to complete work on (20 x 90) or 1,800 parcels. If the goal is to collect data on 18,000 parcels, it will take 10 persons to complete the job in the time given.

$S = 18,000 \div 1,800 = 10$

State laws or local regulations may change the time period allowed. The rate will certainly change with different property types, a single family residence vs a large industrial plant. Finally, everything hinges on the budgetary authority of the local jurisdiction. In the above example, the outcome changes dramatically if the local budget only allows the hiring of 5 persons. Now the number of parcels collected is reduced accordingly.

$S = P / 1,800$
 $P = 5 \times 1,800 = 9,000$

If data has to be collected on 18,000 parcels and time is not an issue, the amount of time can be increased to 120 days to complete the project.

An attempt was made to compile some information regarding parcel counts and staffing. This involved a survey that was sent to fourteen jurisdictions ranging in population from 674,841 to 5,150,233. The survey instrument is shown in the Appendix to this report.

Six of the fourteen jurisdictions responded but the results were inconclusive. The number of parcels for each residential appraiser ranged from a low of 12,000 to a high approaching 61,000. The range on the commercial side was equally as broad from 1,500 to nearly 8,500. There wasn't enough time to delve into the details of each jurisdiction in areas such as how "residential" and "commercial" properties were defined, or what legal or fiscal constraints were placed on the valuation of each of those classes of property. Putting aside the obvious differences in the legal basis for appraisal that changes from one jurisdiction to another, the hope of this study was to see recognizable patterns of numbers of parcels per appraiser by property type and there was no clear pattern.

This assessment office is in a state of transition with many changes in varying stages of completion. Rather than attempting a comparison with other jurisdictions, a more reasonable approach may be to establish reasonable rates of completion for each of the tasks within the assessment office, given the legal, budgetary and practical constraints that exist, and use those to calculate the number of staff required.

APPENDIX

PCSIAAO PRACTICES AND PROCEDURES QUESTIONNAIRE

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This questionnaire is patterned after the Assessment Practices Self Evaluation Guide used in the Certificate of Excellence in Assessment Administration (CEAA) program. It was done so for two very important reasons: (1) the guide effectively covers the processes and procedures to be mastered in a modern assessment office; and (2) the report generated from this exercise can serve as a benchmark for current performance as well as a roadmap for improvement.

Please include a current personnel chart with this questionnaire and indicate on that chart the personnel who are charged with completing sections of this report.

It is crucial to the success of this project that you not only answer each question but provide a complete explanation of that answer.

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ENVIRONMENT

The questions that follow are directed toward the environment in which the jurisdiction must operate.

For the parcel counts below use the number of parcels by classification the jurisdiction used when the assessment roll was last certified. Adjust the property class names as needed.

1. Basic Data: provide the most current information available

POPULATION				
Property Class	Parcel Count	Taxable Value	Sales Per Year	Appeals Per Year
Residential				
Commercial				
Industrial				
Agricultural				
Vacant				
Ag/Res				
Com/Res				
Mixed				
Totals				
Total Land Area of Jurisdiction				
Total Taxable Real Estate Value				
Personal Property Accounts				
Typical Number of Building Permits Annually				
Typical Map Changes Annually				
Appraisal Date				

2. Who performs the following functions?

	Internal Staff	Outside Vendor	Not Performed
Field Data Collections			
Valuation Modeling			
Value Generation			
Value Review			
Building Permit Review			
Sales Data Collection			
Sales Data Review			
Statistical Analysis			

Answer Yes/No to the following questions.

3. Do the governing statutes contain a law expressly requiring that most or all property be valued on the basis of current market value? If "no," state the basis of assessments.

A law (or regulation) requiring independent ratio studies (such as by an oversight agency) measuring the level and uniformity of values within and among classes of property in accordance with the Standard on Ratio Studies?

Comments/Citations:

A law requiring revaluations and re-inspections on a specified schedule or when performance standards are not met, in accordance with the current IAAO standards?

a. If "no," describe the jurisdiction's practice regarding reassessments.

A law requiring buyers and sellers to disclose prices and terms of sales to assessing officers?

a. If "no," provide a legal citation that prohibits the jurisdiction from acquiring this data.

b. If "no", describe how or whether this data is collected.

A law requiring taxpayers to furnish assessing jurisdictions with statements of income and expense.

a. If "no," provide a legal citation that prohibits the jurisdiction from acquiring this data.

b. If "no", describe how or whether this data is collected.

3. Do the governing statutes contain:

Laws or regulations that provide special treatment for classes of properties or owners. If "yes," provide specific examples below.

- Property assessed at a percent of market value:
- Exemptions:
- Special provisions:
- Valuation caps:
- Comments/Citations:

A law requiring that education aid payments and similar intergovernmental transfer payments be based on credible estimates of actual taxable wealth (that is, equalized values) rather than on un-equalized or poorly equalized local assessed values?

Comments/Citations:

Other laws that reinforce or undermine market value assessment?

If "yes," describe the purpose and features of each law.

Do the governing statutes contain:

A law or regulation that limits the assessor’s discretion in using a generally accepted valuation methodology or in considering the probable use of a property in the near future (such as a firm requirement to consider only the current use)?

If “yes,” describe how each law interferes with current-market-value assessment.

A classified property tax system with numerous classes, extreme rate (or ratio) differentials (that is, the highest rate being 250 percent or more than the lowest)?

If the jurisdiction operates under a classified property tax system, identify the classes and the legal assessment ratios or tax rate for each class.

Property Class	Assessment Ratio

A partial exemption that shields many properties from taxation?

If “yes,” identify the main types of partial exemptions and provide information on the percentage or monetary amount of each exemption and the number of properties receiving it.

A limit on how much the appraised value of a property can be increased or decreased?

Any other law or regulation that interferes with current-market-value assessment?

If “yes,” describe the features of each such law.

Does the property tax system have measures to ensure that the jurisdiction has the capacity to perform its assessment functions effectively?

There is sufficient support for the local assessment jurisdiction from either the [state] property tax supervisory agency or a county-level agency? ____

Comments/Citations:

Do you possess the legal authority to join cooperatively with another assessment jurisdiction or to contract for assessment services? ____

Comments/Citations:

Does the governing body of the jurisdiction deem the cost of funding assessment administration too high in relation to total revenues generated by the jurisdiction?

Comments/Citations:

Does the mechanism for funding assessment administration consider the fiscal importance of the function?

Comments/Citations:

MANAGEMENT AND STAFFING

This section explores features of well-managed assessment offices. Answer Yes/No to the following questions.

1. Does the jurisdiction keep abreast of changes in laws, regulations, and court decisions?

The jurisdiction has ready access to an up-to-date compilation of property tax laws and regulations.

Comments/Citations:

The jurisdiction has ready access to a service that reports property tax cases.

Comments/Citations:

The jurisdiction regularly monitors news of legal developments affecting it.

Comments/Citations:

The jurisdiction regularly briefs the staff (and other interested parties) on recent legal developments affecting it.

Comments/Citations:

The jurisdiction actively participates in critical reviews of current legislation and in the development of legislative proposals.

Comments/Citations:

The jurisdiction regularly meets with and participates in groups concerned with improved legislation.

Comments/Citations:

2. Does the jurisdiction regularly monitor the local economy, development patterns, and property market trends?

Comments/Citations:

3. Does the jurisdiction engage in formal planning?

Comments/Citations:

4. Has the jurisdiction prepared a written estimate of necessary human resources?

Comments/Citations:

Use the table below to list the number of staff currently assigned to each function along with the number of staff needed to meet statutory and/or IAAO Standards requirements. Create extra lines as needed to show all current positions.

Function	Current Staff	Staff Needed
Field Data Collection		
Building Permit Review		
Sales Verification		
Income/expense Analysis		
Valuation Modeling		
Statistical Analysis		
Personal Property Valuation		
Personal Property Auditing		

Answer Yes/No to the following questions.

5. Has the jurisdiction prepared an estimate of necessary physical resources?

6. Does the budgeting process employed by the jurisdiction explicitly consider outputs in addition to inputs so that the prospects of obtaining adequate funding are improved?

Comments/Citations:

7. On the issue of organization of the jurisdiction:

Is there a current and complete organization chart?

Comments/Citations:

Are there job descriptions for every position on the chart?

Comments/Citations:

8. On the issue of staff management:

Is there a current procedures manual? _____

Comments/Citations:

Is there a current written personnel policy?

Comments/Citations:

Are regular performance reviews performed?

Comments/Citations:

9. Do the members of the staff have the right set of skills and experience? _____

Comments/Citations:

10. Are salaries and benefits competitive?

Comments/Citations:

Are there salary incentives for professional certifications or designations?

Comments/Citations:

11. Are skills in procurement and contract management sufficient? _____

Comments/Citations:

12. Are exemption and other property tax reduction measures well-managed?

Comments/Citations:

QUALITY ASSURANCE

Answer Yes/No to the following questions.

1. Is the quality assurance program of the jurisdiction adequate?

Comments/Citations:

2. Is the staff required to adhere to ethical standards and does the office provide needed guidance to deal promptly and effectively with ethical problems?

Comments/Citations:

3. Does the organization of the office reinforce quality assurance?

Comments/Citations:

4. Does the computer system design reinforce quality assurance?

Comments/Citations:

5. Are standards of performance formalized?

Comments/Citations:

6. Are quality assurance procedures documented?

Comments/Citations:

7. Do data maintenance programs reinforce quality assurance?

Comments/Citations:

8. Do data security procedures reinforce quality assurance?

Comments/Citations:



9. Does the valuation program reinforce quality assurance?

Comments/Citations:

10. Is valuation accuracy monitored regularly using a flexible ratio study Program?

Comments/Citations:

11. Do the procedures for administering exemption and relief measures reinforce quality assurance?

Comments/Citations:

12. Does management communicate quality assurance expectations?

Comments/Citations:

13. Does management take appropriate corrective action when potential or actual quality problems surface?

Comments/Citations:

14. Does the office invite the comments of taxpayers and other Stakeholders on the quality of products?

Comments/Citations:

15. Does management periodically assess risks?

Comments/Citations:

16. Does management periodically commission procedural audits?

Comments/Citations:

INFORMATION TECHNOLOGY

Today's modern offices have expanded their automated functions enormously, which has increased the responsibilities for administering this technology. Excellence in assessment administration is dependent on access to and effective use of information technology.

Answer Yes/No to the following questions.

1. Is there a modern database management system with its expected services and interfaces supporting the assessment system? _____

Comments/Citations:

Are there sufficient automated edits in place in the jurisdiction? _____

Comments/Citations:

Are there backup and recovery provisions in place?

Comments/Citations:

2. Does the database improve quality and minimize potentially inconsistent redundancies?

Comments/Citations:

3. Does the database enable added functionality?

Comments/Citations:

4. Do the database tools provide for modern support for temporal and spatial variables?

Comments/Citations:

Can the database handle data entry and updating for past, current, and upcoming tax years and the need of the users to separately activate separate tables to do so?

Comments/Citations:

5. Does the database provide support for parcel aggregates and sub-parcel records?

Comments/Citations:

6. Does the valuation software allow for flexibility and adaptation?

Comments/Citations:

Can revisions be made in valuation tables without jeopardizing the official roll in progress?

Comments/Citations:

7. Does the valuation modeling software produce results capable of being timely applied?

Comments/Citations:

8. Can the valuation modeling software produce confidence intervals around its estimates?

Comments/Citations:

9. Does the valuation modeling software support its estimate of a parcel's value with a small set of comparable properties, sold or unsold, that have had their estimates adjusted to reflect how they would compare to the subject property after adjusting for the differences between them?

Comments/Citations:

10. Can the valuation software permit the implementation of analyses not contemplated by the original design, either by customizing reserved variables and processes in the core DBMS, by facilitating third party interfaces, or both?

Comments/Citations:

11. Can the system take advantage of the benefits of integrated CAMA/geographic information technology?

Comments/Citations:

12. Does the system provide advanced workflow processing and management, including those relevant for appeals documents at the various required levels?

Comments/Citations:

13. Does the system provide advanced document management?

Comments/Citations:

14. Does the agency keep abreast of potentially relevant technological developments?

Comments/Citations:

15. Does the computer system maintain a frozen record of the property at the time of sale?

Comments/Citations:

CADASTRAL MAPPING

Excellence in assessment administration requires a cadastral mapping system to perform certain basic functions.

Answer Yes/No to the following questions.

1. Do the cadastral maps enable the jurisdiction to have reasonable assurance that all taxable parcels have been identified and no parcels have been left out of the system?

Comments/Citations:

2. Do the cadastral maps provide the basic information specified in the IAAO standard?

Comments/Citations:

3. Does the jurisdiction maintain a complete set of cadastral maps showing the identity, size, shape, and location of each parcel in the jurisdiction as of each assessment date?

Comments/Citations:

4. Are maps and related records updated on a timely basis?

Comments/Citations:

5. Are all parcels assigned a unique identifier that is associated with its current configuration and size?

Comments/Citations:



6. Do cadastral maps include representations of improvements as well as the legal boundaries of the parcels?

Comments/Citations:

7. Are maps spatially referenced and capable of meeting IAAO accuracy standards when plotted at the scales cited in those standards?

Comments/Citations:

8. Do existing maps, or geographic information system significantly enhance the mass appraisal system?

Comments/Citations:

9. Does the GIS or mapping system display and support valuation areas and identifiers?

Comments/Citations:

10. Can market areas and neighborhoods be updated with GIS?

Comments/Citations:

11. Does the jurisdiction perform advanced spatial analyses possible only with a GIS?

Comments/Citations:

PROPERTY USE CODES, MARKET AREAS, AND NEIGHBORHOODS

The assessment system is built on various property and location codes used to stratify properties for valuation and data maintenance purposes.

Answer Yes/No to the following questions.

1. Does the jurisdiction employ a logical property type classification scheme?

Comments/Citations:

2. Does the CAMA system support mixed use properties?

Comments/Citations:

3. Has the jurisdiction developed separate geographic areas and location identifiers for each major property type?

Comments/Citations:

4. Do appraisers determine geographic areas used for valuation purposes?

Comments/Citations:



5. Are geographic areas sufficiently large to afford adequate market data for analysis?

Comments/Citations:

6. Does the jurisdiction validate the assignment of property use codes and geographic identifiers?

Comments/Citations: Out of date. Parcel by parcel review is to address this issue

PROPERTY DATA COLLECTION AND MAINTENANCE

Information on land and improvements constitutes the foundation of a real property tax system. The accuracy of a property valuation system depends on the accuracy of the data.

Answer Yes/No to the following questions.

1. Do computer records contain information on current property use, highest and best use, and indicators of legal uses, such as zoning?

Comments/Citations:

2. Does the jurisdiction have a documented rationale for the data it collects, including its decisions on interior vs. exterior inspections and the frequency of each type of inspection?

Comments/Citations:

3. Does the jurisdiction maintain computerized data on land attributes important in the local market?

Comments/Citations:

4. Does the jurisdiction physically inspect properties at least every four to six years?

Comments/Citations:

5. Does the jurisdiction regularly obtain copies of building permits, occupancy permits, or both, and does it conduct physical inspections of affected properties?

Comments/Citations:

6. Is the residential property record card designed to facilitate collection and review, and is it supported by a data-coding manual and training program?

Comments/Citations:

7. Does the office use mobile electronic devices for field data collection?

Comments/Citations:

8. Does the assessment office have computerized edits that include both range and consistency checks?

Comments/Citations:



9. Are property data collected or at least reviewed by experienced appraisers? only 3 appraisers on staff.

Comments/Citations:

10. Does the jurisdiction have clearly defined data accuracy standards?

Comments/Citations:

11. Does the jurisdiction have a data quality control program?

Comments/Citations:

12. Does the jurisdiction avail itself of valuable third party data sources?

Comments/Citations:

13. Does the jurisdiction obtain and make appropriate use of digital photographs?

Comments/Citations:

14. Does the jurisdiction capture property data available from marketing materials and/or blueprints?

Comments/Citations:

15. Does the jurisdiction capture information submitted during appeals?

Comments/Citations:

SALES DATA AND RATIO STUDIES

The accuracy of market modeling and ratio studies is dependent on the quality of the sales data. This section highlights the essential features of the sales verification/qualification, stratification, and ratio study procedures for the local jurisdiction.

Answer Yes/No to the following questions.

1. Are all property transfers (sales) uniquely identified and captured?

Comments/Citations:

2. Are real estate sales properly screened and appropriate adjustments made?

Comments/Citations:

3. Are sales used in valuation analyses and ratio studies adjusted to the valuation date (time-trended)?

Comments/Citations:

4. Are ratio studies conducted at timely intervals during the valuation process?

Comments/Citations:

5. Does the jurisdiction conduct ratio studies by property groups and subgroups?

Comments/Citations:

6. Does the jurisdiction use ratio studies as a tool for planning both reappraisals and staff needs?

Comments/Citations:

7. Can the jurisdiction perform ratio studies by combinations of property characteristics specified by staff on an ad-hoc basis?

Comments/Citations:

8. Does the statistical program used to produce the ratio study compute the IAAO standard measures of level (median, mean, weighted mean ratio), horizontal uniformity (coefficient of dispersion (COD)), and vertical uniformity (price-related differential (PRD) and coefficient of price-related bias (PRB))?

Comments/Citations:

9. Does the jurisdiction compute confidence intervals for the statistics it computes as described in question 8 above?

Comments/Citations:

10. Does the jurisdiction compute additional study-validating measures for the statistics it computes as described in section 8 above?

Comments/Citations:

11. Does the jurisdiction test that sold and unsold properties have been appraised similarly (to ensure sample representativeness)?

Comments/Citations:

12. Do the ratio studies include appropriate graphics?

Comments/Citations:

13. Is the jurisdiction capable of mimicking the ratio studies conducted by the oversight agency?

Comments/Citations:



LAND VALUATION

Accurate land values form the base of an effective appraisal system.

Answer Yes/No to the following questions.

1. Is the land valuation process clearly documented?

Comments/Citations:

2. Is all land assigned an appropriate unit of comparison?

Comments/Citations:

3. Aside from areas with few sales, is land valuation based primarily on the sales comparison approach, using either a standard unit or base lot method?

Comments/Citations:

4. Are size adjustments regularly developed based on market analysis?

Comments/Citations:

5. Are adjustment factors regularly developed for relevant features based on market analysis?

Comments/Citations:

6. Does land valuation employ spreadsheet or statistical software?

Comments/Citations:

7. Does land valuation employ computerized mapping or GIS software?

Comments/Citations:

8. When current year sales are insufficient for reliable analysis, does the office supplement them with prior sales and/or employ supplemental land valuation methods?

Comments/Citations:

9. Are land valuation tables or models regularly updated?

Comments/Citations:

10. Are sales ratio studies regularly conducted for vacant land?

Comments/Citations:

11. Is agricultural and timber land appraised in compliance with legal requirements?

Comments/Citations:

12. Are mineral properties appraised in compliance with statutory requirements?

Comments/Citations:

RESIDENTIAL VALUATION

Mass appraisal of residential properties can be highly cost effective. Accuracy of these appraisals depends on reliable data, market-derived valuation schedules, and quality control.

Answer Yes/No to the following questions.

- 1. Is primary reliance placed on the sales comparison approach in the appraisal of single-family homes, condominiums, and townhomes?**

Comments/Citations:

- 2. Are sales used in residential valuation adjusted to the valuation date?**

Comments/Citations:

- 3. Are residential valuation models, equations, and tables recalibrated each revaluation cycle?**

Comments/Citations:

- 4. Are single-family residential neighborhoods adequate in size?**

Comments/Citations:

- 5. Do residential sales comparison models include those property characteristics that contribute significantly to value?**

Comments/Citations:

- 6. Are atypical homes valued using the same methods as typical homes?**

Comments/Citations:

- 7. Are homes subject to flooding, tornados, hurricanes, contamination, or other external obsolescence issues valued in the same way as all other homes?**

Comments/Citations:

- 8. Are condominiums and townhomes valued in the same way as other residences?**

Comments/Citations:

- 9. Is there sufficient market information available to establish separate condominium and/or townhome neighborhoods?**

Comments/Citations:

- 10. Are appropriate procedures in place for the valuation of mobile/manufactured homes?**

Comments/Citations:

- 11. Are appropriate procedures in place for the valuation of cottage and recreation properties?**

Comments/Citations:

12. Do construction cost manuals reflect the local market?

Comments/Citations:

13. Are depreciation schedules market-derived?

Comments/Citations:

14. Are cost factors and tables reconciled to the market?

Comments/Citations:

15. Are values checked for accuracy, uniformity, and compliance with IAAO ratio study standards?

Comments/Citations:

16. When multiple approaches are used, explain how values are reconciled.

COMMERCIAL VALUATION

Successful appraisal of commercial properties requires skilled analysis, use of multiple approaches and techniques, and good judgment.

Answer Yes/No to the following questions.

1. Does the jurisdiction have a commercial cost manual that is current and either developed from or adjusted to the local market?

Comments/Citations:

2. Does the jurisdiction have a program for the routine capture of income and expense data?

Comments/Citations:

3. Do commercial appraisers screen and validate commercial market data?

Comments/Citations:

4. Does the jurisdiction obtain and utilize information on typical income and capitalization rates available from third party sources?

Comments/Citations:

5. Are spreadsheet and/or statistical packages used in analyses?

Comments/Citations:

6. Are multi-family properties appraised using the income approach?

Comments/Citations:



7. Do multi-family valuation models recognize features important to renters and investors in such properties?

Comments/Citations:

8. Are office buildings appraised based on capitalized net income?

Comments/Citations:

9. Are retail appraisals rooted in market data, and do they recognize variations in relevant location and building features?

Comments/Citations:

10. Do appraisals for warehouses and light industrial properties recognize the features that drive market value for such properties?

Comments/Citations:

11. Explain how values are reconciled.

12. Does the jurisdiction have policies for the appraisal of mixed use properties?

Comments/Citations:

13. Explain how special purpose properties are appraised.

PERSONAL PROPERTY ASSESSMENT

This section applies only to jurisdictions in which all or some personal property is assessable.

Answer Yes/No to the following questions.

1. What personal property is assessable in the jurisdiction?

Individual Personal Property

Business machinery and equipment

Business inventory held for sale

Raw material held for manufacture

Vehicles

2. Is a thorough personal property discovery program in place?

Comments/Citations:

3. Is personal property valuation automated?

Comments/Citations:



4. Are the real and personal property systems linked to each other?

Comments/Citations:

5. Does the jurisdiction provide taxpayers with required reporting forms each year?

Comments/Citations:

6. Has the jurisdiction taken steps to facilitate reporting by taxpayers?

Comments/Citations:

7. Does the jurisdiction take remedial action when a taxpayer fails to respond?

Comments/Citations:

8. Are personal property returns retained in a central repository?

Comments/Citations:

9. Does the personal property system flag abnormal year-to-year changes?

Comments/Citations:

10. Does the office conduct routine audits?

Comments/Citations:

VALUE DEFENSE

This section focuses on policies, processes, and institutions intended to increase the credibility of assessments before and after appeals, and the integrity of appeal processes.

Answer Yes/No to the following questions.

1. Has the jurisdiction evaluated both the review and appeal system under which it operates and its role in the property tax system?

Comments/Citations:

Do the assessment and tax calendars impose constraints on the time available for tasks crucial to developing defensible values or defending assessments?

Comments/Citations:

Is the assessment calendar readily available to the public?

Comments/Citations:

Are taxpayers required to state the grounds for their appeals and to back up their complaints with evidence?

Comments/Citations:

Do the reasons for appeals suggest problems with assessments that have a systemic cause (that is, outdated values or valuation methods that do not meet professional standards)?

Comments/Citations:

Do assessments have a presumption of correctness that must be overcome with evidence by the property owner?

Comments/Citations:

Are members of formal appeal bodies required to have relevant experience and/or training?

Comments/Citations:

Are formal appeal bodies briefed on the current year's assessment program?

Comments/Citations:

Are appeal bodies required to give a reason for their decisions?

Comments/Citations:

Is there an expressed concern among property owners that the formal appeal process is biased or corrupt?

Comments/Citations:

2. Are taxpayers encouraged to informally discuss concerns with the jurisdiction before lodging a formal appeal?

Comments/Citations:

3. Does the jurisdiction have documented procedures for handling taxpayer inquiries and formal appeals?

Comments/Citations:

4. Does the jurisdiction track the status of each formal appeal to ensure that proper preparations are made for the hearing, that it is appropriately disposed of, and that records are properly updated?

Comments/Citations:

5. What steps does the jurisdiction normally take to prepare for an appeal?

Comments/Citations:



- 6. When a formal appeal involves difficult appraisal issues and considerable value is at stake, is the jurisdiction allowed to obtain outside expert assistance?**

Comments/Citations:

- 7. Does the jurisdiction allow—or have a strategy for allowing—online appeal filings?**

Comments/Citations:

- 8. Does a supervisory agency or review body have the power to review values and valuation methods on its initiative, or is the jurisdiction required to submit valuations to a regulatory body for approval before taxes can be levied?**

Comments/Citations:

COMMUNICATIONS AND TAXPAYER ASSISTANCE

This section covers the methods and means by which jurisdictions communicate with their taxpaying clients.

Answer Yes/No to the following questions.

- 1. Does the jurisdiction have an active public information and assistance program?**

Comments/Citations:

- 2. Does the jurisdiction employ appropriate communications channels in addressing its constituents' concerns and needs?**

Comments/Citations:

- 3. Can property records be accessed online by parcel identifier, situs address, owner, and/or geography?**

Comments/Citations:

- 4. Does the jurisdiction have informational materials available for the public?**

Comments/Citations:

- 5. Does the jurisdiction have contingency plans for responding to crises and emerging issues?**

Comments/Citations:



CITY OF PHILADELPHIA 2020 RATIO STUDY



Overview

The Office of Property Assessment (OPA) is responsible for determining the value of all real property in Philadelphia and is dedicated to doing so in a fair, accurate, and understandable way. OPA's primary goal is, through ongoing assessments, to improve the accuracy and uniformity of all property values and to instill confidence in Philadelphia taxpayers regarding the fairness of the property tax system, as well as the competency and professionalism of Philadelphia's assessment office.

FY2019 Assessment

For tax year 2020, OPA assessed and valued all 587,000 properties in the city using a trending valuation approach. Trending is a mass assessment valuation methodology where a factor is applied to a group of properties to reflect any changes – increases or decreases – in property values since the last revaluation. Properties are grouped by location, property type, and style (for example, single, twin, row home, or small multi-family within residential category). Market values are compared to sale prices to develop the market trend factor. For example, a 1.05 trend factor would indicate that property values in a particular group have increased by 5% since they were last valued. A 0.95 trend factor would indicate that property values in a group have decreased by 5% since they were last valued. A description of the trending methodology can be found on OPA's website.

As of March 31, 2019, this project resulted in 389,621 increases (67.2%), 81,124 decreases (14%), and 108,987 assessments that did not change from the prior year (18.8%). Citywide, this project resulted in a 5.0% increase in taxable value. For residential improved properties, the project resulted in a 3.9% increase in taxable value. Less than half a percent of residential properties had an increase of over 10 percent.

Ratio Study Measures

This ratio study report measures the quality of real property assessments within the City of Philadelphia. This report measures the results of the tax year 2020 reassessment against actual market conditions. For this trending reassessment, OPA examined all sale transactions that took place between July 1, 2017, and June 30, 2018, to determine trends for property assessments. OPA is required to certify these values to the Commonwealth of Pennsylvania by March 31, 2019.

OPA uses a ratio study to evaluate the level and uniformity of completed assessments as guided by the International Association of Assessing Officers (IAAO). As a part of this effort, OPA examines several metrics within the ratio study:

- 1. Ratio of assessed value to sales price.** A ratio is the relationship between two numbers; in this case it is the relationship between the assessed value and sale price. The relationship between market value and sale

price is commonly expressed as a percentage. The ratio measures how closely OPA market values compare to actual sales prices. Ratio studies that are run against the sales used in the model are part of the model calibration process. Ratio statistics that are run against projected or certified market values give us valuable information about assessment consistency and equity.

Ratios measure the overall level of assessment, as indicated by the Market Value/Time Adjusted Sales Price (TASP) ratio. These may be the average of the assessed value/sale price ratios, the weighted average of the assessed value/sale price ratios or the median of the assessed value/sale price ratios. The average assessed value/sale price ratio is simply the average of all the ratios in the sample. The weighted assessed value/sale price ratio is the result of dividing the total of the assessments by the total of the sale prices.

The median assessed value/sale price ratio, which is the measure that OPA uses, is the midpoint ratio of all ratios after the ratios are arrayed from highest to lowest. While average, median, and weighted average measures of central tendency are all usually calculated, the median is the least affected by extreme ratios. Therefore, IAAO observes in its standards that the median is generally the preferred measure of central tendency for monitoring assessment performance. A median ratio of 1.00 indicates that the median assessment exactly matches the median sale price. OPA's goal is to achieve a median ratio within a range between 0.95 to 1.02.

- 2. Coefficient of Dispersion (COD).** The COD measures uniformity of assessments and is the most commonly used measure of consistency within assessments. The COD is calculated by dividing the average absolute deviation by the median ratio. To calculate the average absolute deviation, subtract the median ratio from the individual ratios and add all the results, ignoring positive or negative signs, and then divide the sum by the number of ratios. The acceptable level for the coefficient of dispersion depends upon the type of properties being reviewed, but in general, the lower the COD the more consistent and equitable the assessments. According to the IAAO, coefficients of dispersion should typically be 20% or less, depending on the types of properties being valued. OPA's target is to achieve a COD of 15% or less.
- 3. Price Related Differential (PRD).** The PRD measures equity in high versus low valued properties. The PRD tests to see if higher and lower valued properties are assessed at the same level. The PRD is calculated by dividing the mean ratio by the weighted mean ratio. A result close to 1.00 is better in that it indicates that high and low valued properties are valued at the same level of assessment. OPA's target is to achieve a PRD between 0.98 and 1.03. A PRD of 1.03 indicates an under-valuation of high-priced properties, while a PRD of 0.98 shows an under-valuation of low-priced properties.

Adjusted R Square is only used for evaluating model reliability and performance. It measures how much variance in price is explained by a model, expressed as a percentage. Higher is better. Less than 70% is unreliable. Over 80% is very good.

Accuracy Measurements

In addition to the standard ratio statistics, OPA measures the accuracy of market values by comparing the market value to time adjusted sale prices and capturing how many values (expressed as a percentage) are within a prescribed distance from sale prices. Prescribed distances are within 10%, within 20% and within 50%. A 'within 10' score of 72% means that 72 % of the estimates are within 10% of the sale price.

The following table illustrates a sample computation of these statistics. The table is only for illustration and does not reflect results of an OPA assessment.

Rank	Parcel #	Appraised value	Sale price*	Ratio	Statistic	Result
1	9	\$87,200	\$138,720	0.629	Number (n)	17
2	10	\$38,240	\$59,700	0.641	Total appraised value	\$1,455,330
3	11	\$96,320	\$146,400	0.658	Total sale price	\$1,718,220
4	12	\$68,610	\$99,000	0.693	Average appraised value	\$85,608
5	13	\$32,960	\$47,400	0.695	Average sale price	\$101,072
6	14	\$50,560	\$70,500	0.717		
7	15	\$61,360	\$78,000	0.787	Mean ratio	0.827
8	16	\$47,360	\$60,000	0.789	Median ratio	0.820
9	17	\$56,580	\$69,000	0.820	Weighted mean ratio	0.847
10	18	\$47,040	\$55,500	0.848		
11	19	\$136,000	\$154,500	0.880	Coefficient of dispersion	14.5
12	20	\$98,000	\$109,500	0.895	Price-related differential	0.98
13	21	\$56,000	\$60,000	0.933	95% conf. int. median (two-tailed)	0.695 to 0.933
14	22	\$159,100	\$168,000	0.947		
15	23	\$128,000	\$124,500	1.028		
16	24	\$132,000	\$127,500	1.035		
17	25	\$160,000	\$150,000	1.067		

* No outlier trimming or adjusted sale price

Through these metrics, ratio studies provide several objective standards by which one can evaluate assessment performance and measure the effectiveness of revaluation projects. As a diagnostic tool, they are used to identify locations or property types that are over or under assessed, for which the market is changing, where there are issues with data quality, where uniformity needs improvement, or where sales data may not be representative of unsold properties.

However, it is also important to understand that there are inherent biases in all mass appraisal systems for both low and high value properties. At both the low and high ends of the range of values, there is more variance in price that is not attributable to the characteristics of the property as captured by the mass appraisal data files. In many cases, data for sales of low value properties is missing or incomplete. Many of these sales are not exposed to open markets or do not use real estate professionals that report details about the properties or transactions. The only data available for a specific property may be a deed and what can be seen from the exterior of the property. Properties at the very high end of the spectrum may have significant differences in interior finishes which may not be known to assessors but are reflected in sales transactions. Therefore, some degree of distortion is expected in the ratio statistics for both low and high value properties.

Ratio Study Standards: Values to Sale Prices

The International Association of Assessing Officers (IAAO) is a professional organization of assessing officials that provides assessment administration standards, educational programs, and research on assessment and tax policy issues. The IAAO has developed numerous standards on assessments and assessment administration. Additionally, the organization is a founding member of the Appraisal Foundation that developed the Uniform Standards of Professional Appraisal Practice (USPAP).

The IAAO's *Standard on Ratio Studies* was first published in September 1990 and was revised in April 2013. The IAAO standards are advisory in nature and provide guidance to those performing ratio studies in the

mass appraisal field regarding design, statistics, performance measures and related issues in conducting ratio studies. OPA uses and follows IAAO assessment and performance standards to judge the performance of the City's reassessments.

Table 2 outlines IAAO standards for one performance metric.

Table 2

General Property Class	Jurisdiction Size/Profile/Market Activity	COD Range
Residential improved (single family dwellings, condominiums, manuf. housing, 2-4 family units)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 10.0
	Large to mid-sized jurisdictions/older & newer properties/less active markets	5.0 to 15.0
	Rural or small jurisdictions/older properties/depressed market areas	5.0 to 20.0
Income-producing properties (commercial, industrial, apartments,)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 15.0
	Large to mid-sized jurisdictions/older & newer properties/less active markets	5.0 to 20.0
	Rural or small jurisdictions/older properties/depressed market areas	5.0 to 25.0
Residential vacant land	Very large jurisdictions/rapid development/active markets	5.0 to 15.0
	Large to mid-sized jurisdictions/slower development/less active markets	5.0 to 20.0
	Rural or small jurisdictions/little development/depressed markets	5.0 to 25.0
Other (non-agricultural) vacant land	Very large jurisdictions/rapid development/active markets	5.0 to 20.0
	Large to mid-sized jurisdictions/slower development/less active markets	5.0 to 25.0
	Rural or small jurisdictions/little development/depressed markets	5.0 to 30.0

These types of property are provided for general guidance only and may not represent jurisdictional requirements.

**The COD performance recommendations are based upon representative and adequate sample sizes, with outliers trimmed and a 95% level of confidence.*

**Appraisal level recommendation for each type of property shown should be between 0.90 and 1.10.*

**PRD's for each type of property should be between 0.98 and 1.03 to demonstrate vertical equity. However, PRD standards are not absolute and may be less meaningful when samples are small or when wide variation in prices exist. In such cases, statistical tests of vertical equity hypotheses should be substituted.*

**CODs lower than 5.0 may indicate sales chasing or non-representative samples.*

Source: Standard on Ratio Studies; International Association of Assessing Officers; Kansas City, Mo; April 2013; p 34.

Ratio Study Results

This study considers time adjusted sales price data for the period starting in January 2013 and ending in June of 2018 that is the valuation date for the tax year 2020 assessments.

Only sales that have been validated as arms-length transactions that are indicative of the values of other similar properties are used. Sales between related parties, to or from financial institutions or government agencies, sales to persons or organizations that typically do not engage in arms-length transactions, or sales with extreme ratios (which indicate abnormal transactions) are not used in this study. In addition, sales where the property changed in a significant way between the time of sale and the date of valuation are excluded. For example, if a property is sold in poor condition, but subsequently rehabbed, and valued as rehabbed, the sale price no longer bears relationship to the market value of the property. Including these sales in a ratio study will distort the results.

For this study, outliers were removed using the common technique of removing the cases where the ratio of the 2020 Estimate value to the Time adjusted sale price fell within the top 2.5% and bottom 2.5% of all ratios.

Single Family Residences

Results for single family residences are summarized by geographic zone and major property type (singles/ twins/rows) as of March 2019. Results are based on over 39,200 sales between July 1, 2017 and June 30, 2018.

TABLE 3: Single Family Residences

Zone	Sales	Median Ratio	COD	PRD	Style	Sales	Median Ratio	COD	PRD
A	2,679	0.898	12.9%	1.024	Rows	28,688	0.925	11.3%	1.006
B	937	0.912	14.5%	1.033	Singles	3,109	0.931	10.0%	1.026
C	4,919	0.965	7.9%	1.012	Twins	7,460	0.957	10.0%	1.013
D	2,579	1.005	8.2%	1.01	Overall	39,257	0.932	11.0%	1.01
E	4,192	0.922	9.0%	1.011					
F	3,604	0.913	11.3%	1.008					
G	1,298	0.87	17.9%	0.933					
H	1,208	0.916	14.4%	1.011					
J	4,155	0.956	10.3%	1.012					
K	3,976	0.865	11.7%	1.006					
L	995	0.958	10.6%	1.008					
M	3,978	0.872	10.6%	1.009					
N	2,412	0.971	7.1%	1.008					
P	2,322	0.957	10.5%	1.024					
Overall	39,254	0.932	11.0%	1.01					

**Note: 3 sales were not in valid zones and excluded from zone table.*

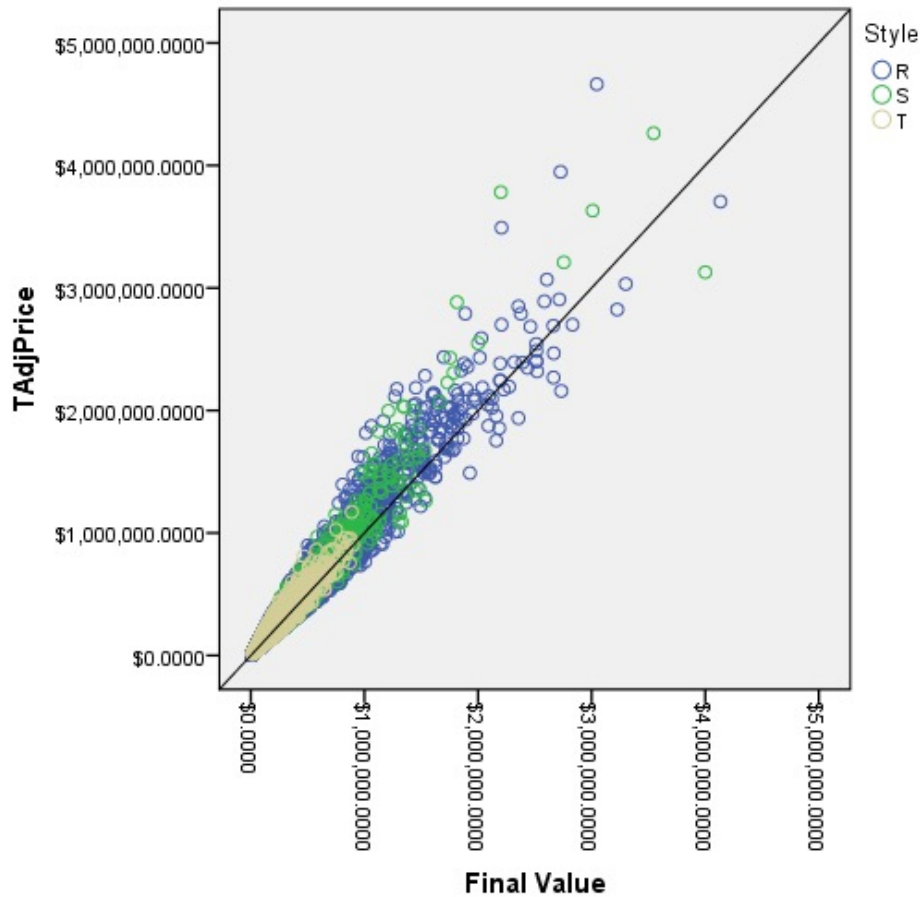
Citywide, the median ratio for single family residential properties was 0.932 (93.2%), slightly below OPA's target of 0.95 to 1.02 (95% to 102%). This means that single family residential properties citywide have been valued at approximately 93.2% of their respective sale prices. When looking at this metric by zone, the median sales ratios for 6 geographic zones do fall within the targeted range.

The City's overall COD was 11%, which is within the IAAO accepted range (< 15%) for assessed values for a jurisdiction like Philadelphia. Moreover, 13 of the 14 broad zone CODs are also less than 15%, meaning assessments in those zones are generally uniform and have very similar ratios. Assessments across style categories also achieved CODs within the desired range.

The City's overall PRD was 1.01, which is also within the IAAO accepted range (0.95 to 1.03). This means that there is no measureable bias between low value and high value property valuations across the city. On a zone

basis, twelve of 14 zone PRDs also fell within the accepted range. Assessments across style categories also achieved PRDs within the desired range.

Visual Comparison of 2020 Market Values to Time Adjusted Sale Prices by Property Style



**Note: Blue represents row homes, green represents singles, and yellow represents twin homes.*

This scatter diagram illustrates how closely market values match time adjusted sales prices (TASP). Each point represents the intersection of TASP and assessed value. The line indicates where TASP and Assessed Value are equal.

Multi-Family Residences

Results for small multi-family residences (2 to 4 units) are summarized by property type (built as or converted duplexes/triplexes/quadruplexes) and by major geographic areas of the city as of March 2019. Results are based on almost 3,900 sales.

TABLE 4: Multi-Family Residences

Zone	Sales	Median Ratio	COD	PRD
A	601	0.955	17.9%	1.045
B	86	0.951	19.7%	1.068
C	502	1.036	8.1%	1.01
D	353	1.067	10.2%	1.017
E	445	1.026	11.4%	1.019
F	108	1.031	19.7%	1.038
G	144	0.892	16.8%	1.02
H	393	1.014	14.9%	1.02
J	280	0.987	14.9%	1.034
K	183	0.935	16.1%	1.035
L	155	1.066	13.3%	1.026
M	300	1.026	14.8%	1.027
N	145	1.109	11.9%	1.023
P	170	1.011	12.4%	1.02
Overall	3,865	1.016	14.1%	1.03

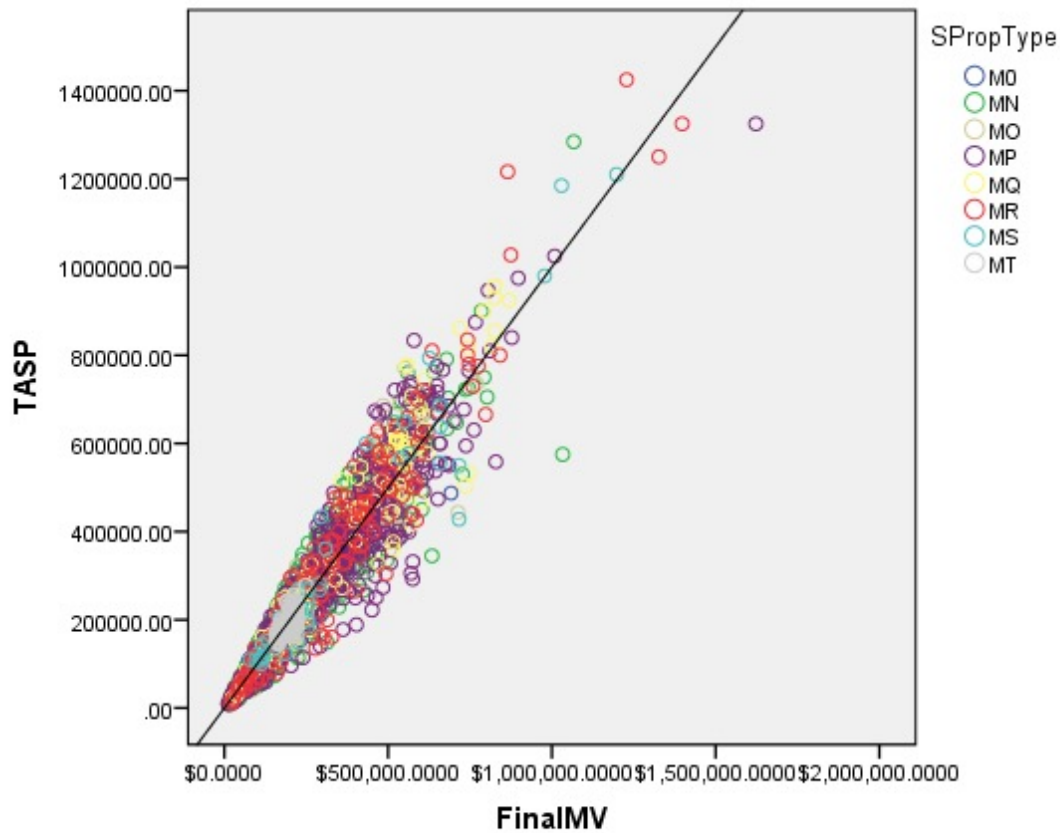
Style	Sales	Median Ratio	COD	PRD
MN	1,183	1.012	16.4%	1.037
MO	1,327	1.034	10.7%	1.015
MP	773	0.989	16.9%	1.03
MQ	172	0.994	12.3%	1.029
MR	176	0.958	17.5%	1.023
MS	60	1.012	13.3%	1.027
MT	177	1.071	8.4%	1.011
Overall	3,868	1.016	14.1%	1.03

**Note: 3 sales were not in valid zones and excluded from zone table.*

Generally, OPA's ratio performance multi-family residences conforms to IAAO standards. The results illustrate both good central tendency and reasonable dispersion. The measures of central tendency indicate that properties have been valued for tax year 2020 at approximately 101.6% of their respective sale prices, which falls within the IAAO range of 0.95 to 1.02 (95% to 102%).

Citywide, the COD was 14.1% for multi-family properties and 9 of 16 zones also fell within the IAAO accepted range (< 15%). The CODs across property style types also primarily fall within industry standards.

The PRD shows no measurable bias between low value and high value properties.

Visual Comparison of 2020 Market Values to Time Adjusted Sale Prices by Property Type

This scatter diagram illustrates how closely market values match time adjusted sale prices (TASP). Each point represents the intersection of TASP and assessed value. The line indicates where TASP and Assessed Value are equal. This is good distribution for this class of property.

SURVEY

Dear Colleague,

The Professional Consulting Services of IAAO has been asked as part of the gap analysis of a large jurisdiction to provide a comparative analysis with other large jurisdictions in the areas of staffing and work load. That is the reason for this communication.

Considering the wide diversity of laws and regulations under which you operate, this study will be limited to broad strokes. Therefore, I ask that you provide the following information:

Property Type	Parcels/Accounts	Number Appraisers	Number Clerical	Current Appraised Value	Budget Allocation
Residential					
Commercial					
Other Real Estate					
Personal Property					
Totals					

What is the reappraisal cycle for your jurisdiction?

What year was the last complete reappraisal concluded?

Thank you in advance for any assistance you can provide. I will report the findings back to those who participate.

STAFF POSITIONS

From the appendix to the *IAAO Standard on Professional Development*

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 Officers 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 Officers
- 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 Officers
- 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 Officers
- 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 good written and oral

Continuing Education Required

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

Continuing Education Recommended

- Course 300. Fundamentals of Mass Appraisals

Staff Calculations

The number of staff positions needed within an assessment office is a function of the various jobs to be done, the workload of that job and the time allowed for completion. All of those factors are specific to a given jurisdiction and, therefore, not subject industry wide standardization. The calculation of the required number is best represented in the following formula:

$$S = P \div (R \times T)$$

where

- S = number of staff members required
- P = parcels (or other unit of production)
- R = rate of production
- T = time period.

In response to the questionnaire used to start this process, Jackson County indicated a residential parcel count of 269,849. For the purposes of this example, we will assume the county wants to reinspect all of those parcels at least once every six years, which means that 44,975 parcels will have to be re-inspected each of those six years. (269,849/6 = 44,975) Assuming a rate of reinspection per appraiser of 20 parcels per day, a total of 2,249 days would be required to complete that re-inspection process each year. (44,975/20 = 2,249) Given all the duties involved in the Assessor’s office in one year along with the weather in the Midwest, we will assume a four (4) month period is set aside for the physical re-inspection, or approximately 80 working days each year. That translates into the need for 28 appraisers to complete the re-inspection annually. (2,249/80 = 28)

$$S = 44,975 \div (20 \times 80) = 44.975 \div 1,600 = 28$$

Virtually all of these components can change. The number of parcels can increase due to new developments. The time available can grow or shrink due to weather or regulatory changes. More seasoned appraisers and/or use of advanced technology may change the rate per day. All these factors require the local jurisdiction to calculate the staffing requirements for each position while arguing against a national standard.





PROFESSIONAL
CONSULTING SERVICES
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