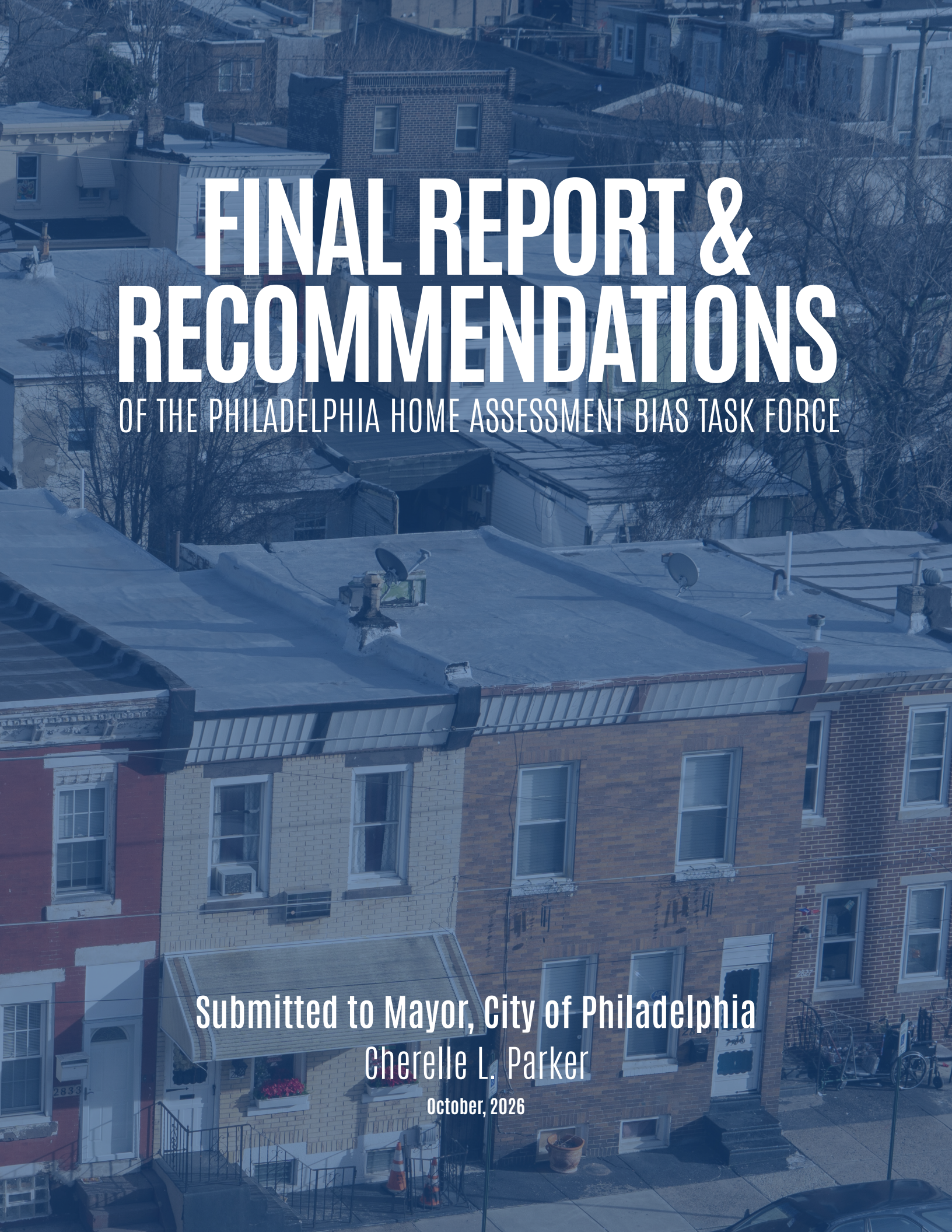


FINAL REPORT & RECOMMENDATIONS

OF THE PHILADELPHIA HOME ASSESSMENT BIAS TASK FORCE

Submitted to Mayor, City of Philadelphia

Cherelle L. Parker

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Executive Summary:
Philadelphia Home Assessment Bias Task Force Report

In April 2024, Reinvestment Fund, together with its partners Community Legal Services and the Center for Economic Policy Analysis, released a study of Philadelphia's 2023 property tax assessments.[1] That study concluded that in Philadelphia, residents of Black, Hispanic, and lower-income areas are more likely to have problems with their property tax assessments than homeowners in White, higher-income neighborhoods. More specifically, assessments are less likely to be accurate in lower-income areas. Further, assessments are less likely to be uniform and more likely to be regressive in Black, Hispanic, and lower-income neighborhoods. Authors of the report acknowledged improvement in these observed adverse demographic patterns over prior analyses and did not represent that intentional discrimination was occurring. The authors though suggested that there may be aspects of how assessments are determined that produce these disparate results. Mayor Parker took official notice of these findings and formed the Home Assessment Bias Task Force to examine and offer recommendations regarding how to address the issue.

This Task Force report offers concrete recommendations regarding how to address these problems and offers a model for how other municipalities should address the potential for systemic bias in property tax assessments.

What is assessment quality?

Assessment quality in property assessments is understood to have three basic dimensions: ***accuracy, uniformity and regressivity.***

Accuracy in property assessments means that a property should be assessed as close as possible to its actual market value. For example, a single-family home which sold for $500,000 in 2025 in a true arms-length transaction should be assessed by OPA at a value of $500,000.

Uniformity in property assessments is the notion that, for example, if multiple properties with equal values are assessed, those properties should have equal (or near equal) assessed values. For example, all other things being equal, ten three-story row homes on the same block of Erie Avenue should have roughly the same value.

Regressivity (a form of what assessors refer to as vertical inequity) is observed when higher-priced properties systematically get valued at a lower percentage of their value than lower-priced properties. If million-dollar properties are valued at $950 thousand dollars (95% of fair market value, or FMV), $100 thousand dollar properties should likewise be valued at $95 thousand dollars (95% of FMV), that is vertical equity, and not a regressive pattern. But if million-dollar properties are valued at $750 thousand dollars (75% of FMV) and $100 thousand dollar properties are valued at $95 thousand dollars (95% of FMV), that is regressive (or vertically inequitable) since higher-value properties are receiving a greater discount than lower-value properties.

Critical to achieving assessment quality is also high-quality property data, statistical models that are properly applied, and a set of results that an assessor can objectively justify.

International Association of Assessing Officers' (IAAO) Standard: https://www.iaao.org/wp-content/uploads/Standard_on_Ratio_Studies.pdf

Philadelphia Mayor Parker formed the Philadelphia Home Assessment Bias Task Force (Task Force)[2] to address prior research findings that quality measures of residential property assessments determined by the City's Office of Property Assessment (OPA), while improving over time,[3] were more problematic in Philadelphia's Black, Hispanic and lower-income neighborhoods than they were in White and higher-income neighborhoods. Geographic patterns reflective of racial/ethnic/economic disparities in assessments accuracy, uniformity and vertical equity is not unique to Philadelphia.[4]

The Task Force acknowledges that the overall accuracy of assessments by the OPA has increased significantly from 2018 through 2023–a fact that is reported in two reports from Reinvestment Fund, Community Legal Services, and the Center for Economic Policy Analysis–as well as external evaluations of OPA. Further, there is good reason to believe that the accuracy of assessments has continued to improve from 2023 through the present because of steps taken by OPA throughout that period.

While recent examinations of OPA assessments show that assessments are within IAAO benchmarks for uniformity, equity, and accuracy, neither the OPA nor its external reviewer examined those benchmark measures across Philadelphia's neighborhoods differentiated by racial/ethnic composition or income level, as the Reinvestment Fund, et al. study has.

Why does this matter?

- **FIRST**, it is a matter of fundamental fairness–everyone has a right to know that their property is assessed accurately and that their neighbors are valued to the same levels of consistency.
- **SECOND**, regressive assessments slowly strip wealth away from homeowners (most likely lower-income taxpayers and people of color in Philadelphia) by over-taxing them. This means less money is available for property maintenance, savings, and day-to-day expenses. And it is a factor that over the course of time exacerbates the racial wealth gap.
- **THIRD**, the Fair Housing Act and other civil rights statutes, regulations, and fair housing-related industry standards make it clear that differences in assessments that are tied to race violate fair housing law and appraiser/assessor professional standards; and that these same laws and standards not only allow but encourage self-testing (or self-monitoring) and corrective action.
- **FOURTH**, assessment issues like those in Philadelphia can perpetuate segregation by creating a higher effective tax rate in minority and lower-income communities. The tax burden may impair a homeowner's ability to afford critical home repairs and upgrades and can slowly make an area less desirable to people–of any race–making a choice of where to live. It can also reduce accumulation of intergenerational wealth due to the loss of value of the family home, which is the number one most valuable asset owned by most lower- and moderate-income families.

The Task Force engaged in extensive fact-finding designed to ensure that any recommendations made to the Mayor were properly informed by industry standards and practices as well as applicable fair housing law. And we note for the record that OPA asserts that there are recommendations from the Task Force with which it does not agree, and others that are more appropriately considered the work of other City agencies.

Over the course of our six meetings, we learned:

- How OPA gathers and cleans property data, not only in an assessment year, but on an ongoing basis.
- That OPA's routine reassessments, unlike what happens in many of Pennsylvania's counties (see *Appendix 8*), is a "best practice." In that regard, Philadelphia stands out among counties in the Commonwealth, some of which have not done a complete reassessment in decades.
- That OPA needs more and better data, especially as it reflects on property conditions–a critical determinant of value in its statistical models.
- The importance of transparency and education for the public to understand and trust that the assessed values are accurate and fair.
- How OPA selects properties that sell in a particular time period for statistical modeling and how that modeling operates (e.g., the indicators used in the statistical models, the statistics themselves).
  - How the selection and rejection of properties for purposes of statistical modeling and subsequent ratio studies can impact the results and quality measures of the modeled results.
  - How the selection and rejection of properties for purposes of statistical modeling and subsequent ratio studies can create a sample of home sales that is not representative of the universe of all homes to which the statistical models are applied.
  - How the property and locational characteristics (i.e., variables) used (or not used) in statistical modeling can impact modeled results.
- How OPA takes the results of the models, evaluates the quality of those results, and ultimately applies those results to all residential property in Philadelphia.
- What OPA does with its modeling and what it does not do.

  - It does not routinely review results of the models for connection of assessment quality measures to the racial/ethnic or income characteristics of the neighborhoods where properties are located.

- That there are well-established ways that agencies, municipalities, and businesses can test for evidence of potential systemic bias. For example, financial institutions conduct an analysis called a "Less Discriminatory Alternative" analysis that is designed to uncover factors in statistical models that could be altered to ensure a less discriminatory result without impairing the quality of the results obtained from the statistical models.
  - That OPA's models themselves may include factors that, on their face, seem perfectly reasonable and appropriate, but in practice, those factors may or may not contribute to the racial/ethnic/economic issues with Philadelphia's assessments. Said factors cannot be identified without benefit of comprehensive statistical review of the data used to determine value, the statistical models themselves, and analysis of the results in the context of neighborhood level racial/ethnic composition or income level.

- That the assessment process is more accurately understood to be a two-or three-year assessment cycle since the process involves both: i) OPA's valuation process and notice and ii) the informal OPA and formal Board of Revision of Taxes (BRT) appeals processes in order to allow taxpayers an opportunity to correct errors in valuation.
  - The ways that the informal and formal appeal processes operate both to give valuable feedback to OPA on properties as well as to make adjustments when a homeowner contests an assessed value, and the value is found to be incorrect.

- That there is always room for more training, and that recently, the Commonwealth included a requirement that appraisers and assessors receive regular fair housing training.

- That while there was not unanimous support for the Task Force members' recommendations to the Mayor, many were broadly supported and are reasonably implementable. OPA's Management Letter, offering comment on the Task Force recommendations, is included as *Appendix 7*.

All these findings resulted in a set of recommendations including, but not limited to:

- Taking steps to expand and improve the amount of specific property-level data OPA has access to for modeling purposes. Pursuit of access to MLS (Multiple Listing Service) data could yield useful data, as it does in other jurisdictions. Further, measures of property condition–a key variable in OPA modeling–is generally understood to need improvement. That too could be improved through access to MLS data; Bright MLS is the multiple listing service covering Philadelphia.

- Routinely run a representation study ensuring that sales samples used for modeling are representative of the full population of properties, in a manner not inconsistent with IAAO Section 5.3 on holdout samples and ratio study methodology, as well as fundamental rules of proper statistical procedure.

- Do not include properties that have received a residential tax abatement in the modeling data since this distorts neighborhood valuations. [OPA disagrees with this recommendation and asserts that, for multiple reasons, it is not practicable to exclude abated properties from its assessment models. Moreover, it asserts that excluding these properties would have an adverse consequence for valuation of other properties. OPA's recommendation is that it continue to ensure that properties that benefit from a residential tax abatement do not distort valuations of nearby properties.]

- Conduct random on-site inspections, assuming consent of the property owner, as a means of quality control.

- As part of OPA's effort to ensure fair housing compliance with its assessments, OPA should self-monitor and examine its processes to discover whether there are processes, practices, or alternative statistical approaches to modeling that determines assessed values that are at least as good (from the perspective of industry standards on assessment quality) but that manifest less differential in those quality measures by area racial/ethnic composition or income level. In the parlance of fair

housing and fair lending, this is known as a Less Discriminatory Alternative (LDA) analysis. OPA can satisfy this recommendation by engaging an independent third-party consultant with demonstrated expertise in fair housing and the application of statistical techniques and procedures in civil rights matters to evaluate OPA's results for patterns connected with the racial/ethnic and income characteristics of neighborhoods. And should such patterns exist in OPA's assessments, the expert consultant should seek alternative modeling approaches that are: (a) consistent with assessment industry standards; and (b) yield results that are at least as uniform and vertically equitable as the model OPA adopts, while reducing adverse impact on communities of color.

- Seek legal and industry (IAAO and any relevant agency of the Commonwealth of Pennsylvania) advice/opinions about what OPA's obligations are regarding compliance with the fair housing laws, regulations, and specifically with the non-discrimination rules found in the Uniform Standards of Professional Appraisal Practice (USPAP). Should such advice yield opinions that suggest OPA can itself do more to self-monitor for fair housing implications of their work, it should put in place a plan and strategy to do those things it may legally do.

- Create a standing Advisory Group of stakeholders with responsibility for reviewing OPA assessment results and any advice/opinions/studies from 3rd parties of the fair housing results of OPA's processes and results.

- Create an OPA Assessment Appeal Advocate to assist taxpayers, and particularly homeowners, with filing formal and informal appeals. This recommendation is not a call for a specific action of the OPA, but it is a call for an appropriate other City agency as determined by the Mayor.

- Commit to regular reassessments; a minimum of two or three years for complete reassessments was identified as a reasonable period of time given the amount of work involved and how long it takes for appeals to make their way through the system.

- Enhance OPA transparency both in terms of the technical aspects of the work (including zone-by-zone assessment equation results) as well as increasing outreach and education regarding how an average homeowner might understand their assessed value and how that value was reached.

- The City should expand taxpayer outreach and education (including multiple modes of communication such as videos, easily accessible website content, etc.) to address:
  - How OPA determines assessed values;
  - How homeowners can request and work through a first-level review;
  - The timelines under which homeowners must operate to request reviews and appeals;
  - How homeowners can access the many and varied programs the City has to help homeowners pay their taxes.

- The Task Force recommends that BRT implement an in-house process to gather data on the formal appeals process, and to convey those data (and the rationale for any change) to OPA for inclusion in its property-level database. Data on appeals, including outcomes, could be publicly available online similar to the information available regarding Licenses & Inspections appeals.[5] It further recommends that BRT evaluate and review its processes and procedures and the impacts of its actions on overall assessment quality metrics, as well as systemic fairness in assessment appeals. If there are concerns about BRT's ability to self-monitor or to consider neighborhood racial/ethnic characteristics as part of this review, the City should retain an independent third-party expert (with demonstrated fair housing and statistical expertise) to conduct an analysis designed to uncover any inequities should they exist, which must then be addressed.

These recommendations, taken together, will represent a significant improvement in the customer experience and work product of OPA. Further, acting on these recommendations will position Mayor Parker and Philadelphia's OPA as national leaders and a model for cities seeking to ensure their property assessments are accurate, uniform, and equal for all.

Report From The Philadelphia Home Assessment Bias Task Force

Background

In April of 2024, newly elected Mayor Cherelle L. Parker called for creation of the Philadelphia Home Assessment Bias Task Force, focused on issues related to racial/ethnic bias in the assessment of residential property for tax purposes.[6] Her charge to the Task Force was to engage a group of experts and practitioners with varied areas of subject matter expertise, along with members of the City's Office of Property Assessment (OPA) and other City Administrative agencies. The Task Force would begin with critical fact-finding work, leading to a series of recommendations to the Mayor to address the observed patterns of inequality in uniformity and vertical equity. Mayor Parker asked that the Task Force be co-chaired by Ira Goldstein (former Senior Advisor, Policy Solutions group at Reinvestment Fund and current Principal of IJG Urban Advisors, LLC), and Monica Williams (Deputy Chief Assessment Officer, OPA).

Explanation 1:

What is meant by uniformity and vertical equity in property tax assessment?

Uniformity – sometimes referred to as horizontal equity – means that properties of similar worth are assessed at similar values and are similarly taxed. Example: If a 3-bedroom, 2-bathroom home in good condition is assessed at $125 thousand, the neighboring home of similar constellation and condition should similarly be valued at $125 thousand.

Regressivity – sometimes referred to as vertical equity – means that, no matter the value of the property, the assessed value is a similar proportion to the actual value of the property.

Example: If a $1 million dollar home is assessed at $950 thousand, a $100 thousand dollar home is assessed at $95 thousand.

Why was this Task Force necessary? The impetus was research conducted by the team of Reinvestment Fund, Community Legal Services of Philadelphia (CLS) and the Center for Economic Policy Analysis (CEPA) examining the quality and equality of residential property tax assessments in Philadelphia. The research team created two reports: one in 2021 and another in 2024.[7] These reports differ from what other examinations of OPA included.[8] Specifically, the 2021 and 2024 studies examined the standard measures of assessment quality (i.e., the assessment ratio, the coefficient of dispersion (COD), and the price-related differential (PRD)) in Philadelphia's neighborhoods organized by the racial and ethnic composition as well as the typical income in the neighborhood; this kind of analysis had not been included in prior evaluations of OPA. Both reports concluded that areas of Philadelphia with higher concentrations of Black, Hispanic, and lower-income households tended to have lower levels of uniformity and higher levels of regressivity in their assessments.[9] The reports showed improvement over time, but the racial/ethnic/income patterns remained.

After completing the first report in 2021,[10] the authors engaged with the OPA team. Discussions were far-reaching, covering the findings, the challenges to the methods and data used, and potential causes of the observed patterns. OPA contested some of the findings and conceded the validity of others. One area of mutual agreement centered on an OPA process that may have yielded unequal results in lower income and minority communities. That process involved the extent to which multiple OPA staff were making decisions about which home sales to use in its statistical modeling of values, perhaps introducing some inconsistency in how decisions were made. Further, OPA and the RF/CLS/CEPA team agreed that in a second report, the researchers would use what OPA termed the "right data".[11]

The second report, released in 2024, used both the right data and an alternative formulation of OPA's publicly released data. This second report drew similar conclusions to the first. There was improvement over time, but inequalities were not yet resolved. [See *Appendix 1* for a selection of assessment quality

measures by census tract racial/ethnic composition and household income levels.] Importantly though, there was no meaningful difference in the data-based conclusion one would draw about the disparities whether the conclusion was based on the right data or the alternative database formulation.
It is important context that OPA has been on a multi-year, multi-dimensional effort to improve the transparency, accuracy, and uniformity of its assessments. Today, the OPA has a larger staff of professionals than in years past (and still have a stated need for more people in key parts of the organization). OPA documents its work for the public on the City's website.[12] And external reviews of the OPA over the last few years, while still identifying some issues in process and results, reflect an organization that has made substantial progress, and continues to make progress, on many of the fronts industry experts consider emblematic of a high-quality assessment organization.[13] OPA officials assert that they have every reason to believe that these efforts will manifest in continued progress meeting the industry standards with its assessments.

To be clear, we do not present the recommendations that follow as having universal support by all Task Force members. Some recommendations are uniformly supported (e.g., recommendations related to OPA gaining access to more and better data about Philadelphia's properties so that statistical modeling and the ultimate assessments can continue to improve), while others do not (e.g., OPA conducting its own internal evaluation of assessed values for patterns related to the racial or ethnic composition of the area within which a property is located). OPA has recently taken an official position cognizant of the work of the Task Force and the contents of this report, and in support of several of the recommendations; that support is found in the testimony to City Council OPA Chief Assessment Officer James Aros, Jr. delivered on April 21, 2026.[14] Further, OPA has prepared a Management Letter that expresses its perspective on the recommendations and the rationale for areas of disagreement; that Management Letter is included with this report. [See Appendix 7] In sum, we present the full slate of recommendations as options for Mayor Parker to receive, consider, and then take those actions she deems appropriate to address the patterns that gave rise to the need for this Task Force.

[See *Appendix 2* for an overview of the Task Force meetings; *Appendix 3* for a listing of Task Force members and affiliations; *Appendix 4* for outside experts consulted.]



Overview Of The OPA Process

As stated by the International Association of Assessing Officers (IAAO),[15] "Market value for assessment purposes is generally determined through the application of mass appraisal techniques. Mass appraisal is the process of valuing a group of properties as of a given date and using common data, standardized methods, and statistical testing. To determine a parcel's value, assessing officers must rely upon valuation equations, tables, and schedules developed through mathematical analysis of market data."[16] OPA's process very much follows that mass valuation approach.

At its core, OPA creates statistical models of the prices of homes that sold in a given time period and uses those statistical models to determine assessed values for all properties. Since multiple years of home sales are used in modeling, sale prices are adjusted for time so that all values are essentially as of the same point in time.[17] The statistical models OPA creates include a variety of indicators reflective of the property (e.g., size, condition, era built) its location (OPA Zone and General Market Area, or GMA) and other locational amenities (e.g., view, street classification).[18]

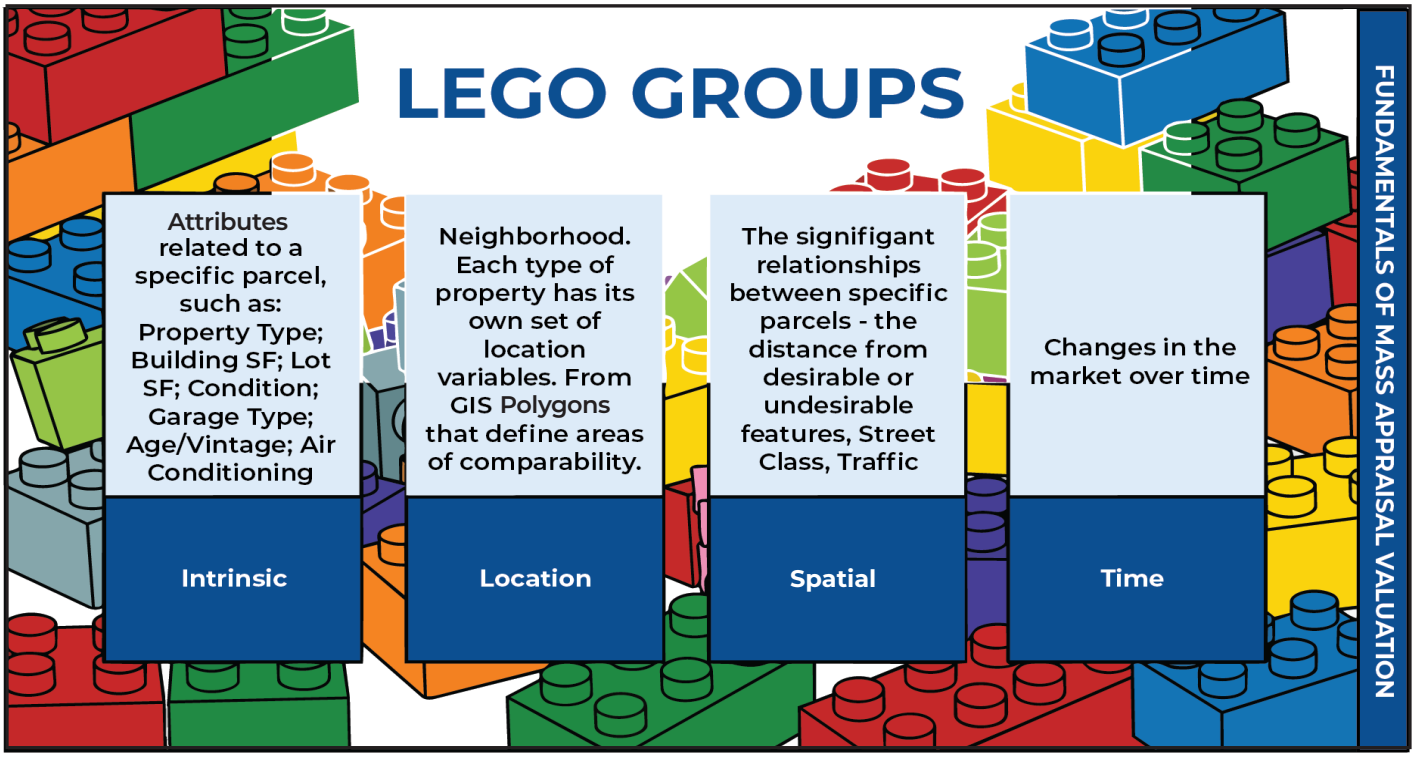


Figure 1: Overview Of Variables OPA Uses In Its Modeling Of Sale Prices [Source: OPA Presentation to the Task Force (design modifications made for this Report)]

OPA employs a backwards stepwise regression technique within each Zone and then selects the regression equation that best predicts the price of homes that sell within the Zone. [See *Explanation 2*] As each Zone is a unique analysis inclusive of just its properties, and because OPA includes/excludes variables based on statistical significance, each Zone has a different final prediction equation upon which assessments are made. [See *Appendix 5*]

Statistical modeling and reviews of model results are not the beginning of the process though. Prior to modeling, OPA deploys a staff of professionals whose job is to review all homes that sell. Their review covers issues such as:

- Is a sale a true arms-length transaction? Or is the sale between related parties?
- Is the record of the sale complete and accurate?
- Using other data (e.g., third-party online listing services), does the condition code in OPA records appear to reflect the actual condition of the property?
- Is the property a purchase/renovation/resale, and if so, does the sale price in the model represent the final "value" of the property?

Only sales that are true valid sales with complete data are used for modeling purposes. OPA represents that it follows IAAO guidance related to the inclusion/exclusion of sales for purposes of modeling and assessment quality measurement.[19]

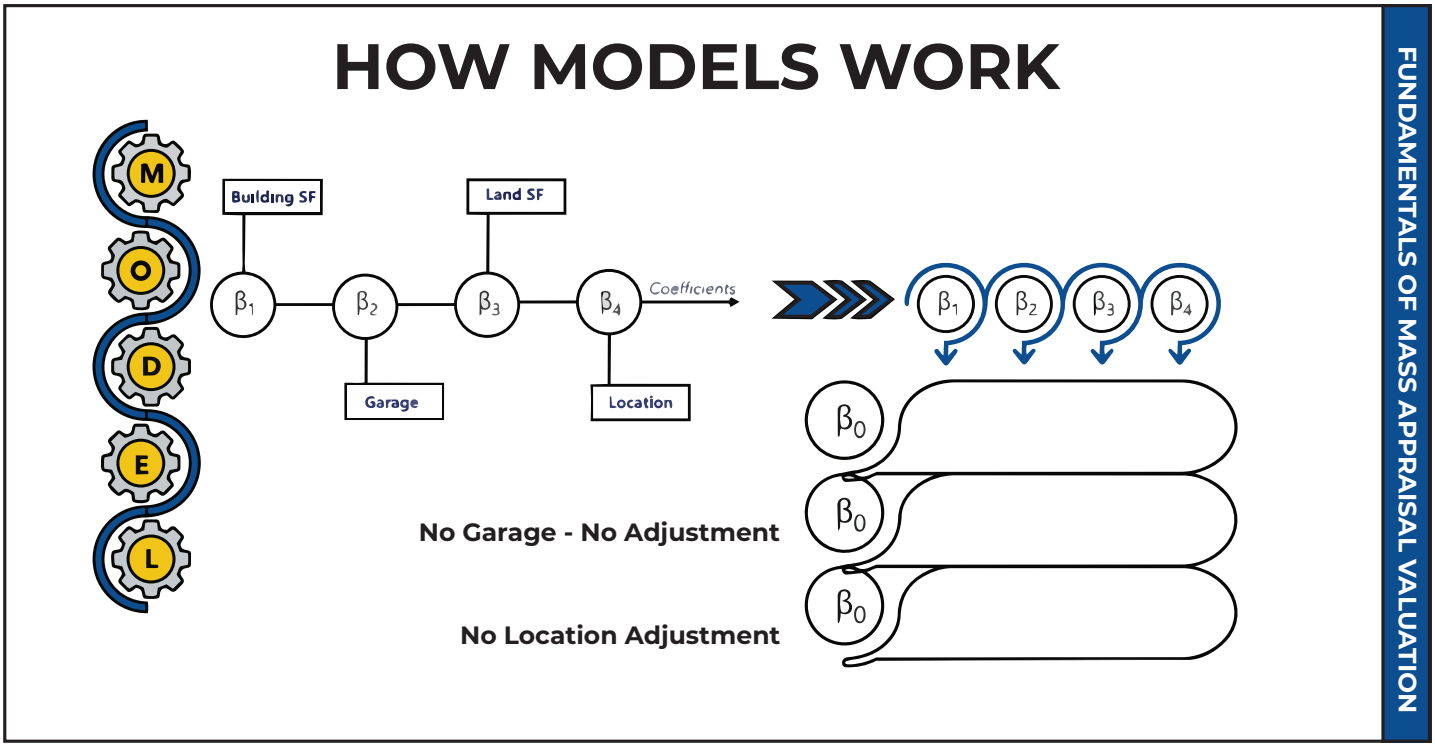


Figure 2: Schematic Of OPA's Statistical Model [Source: OPA Presentation to the Task Force (design modifications made for this Report)]

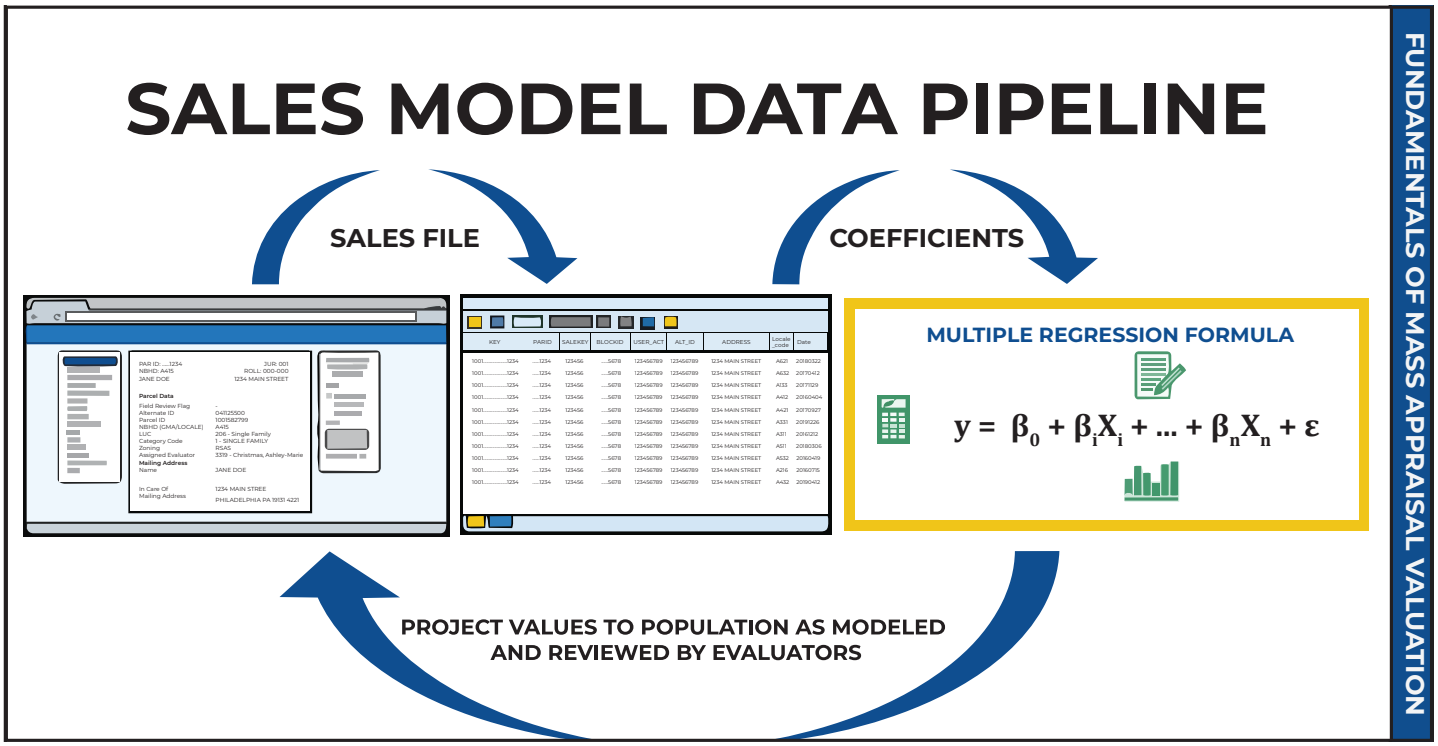


Figure 3: Application Of OPA's Modeling Process [Source: OPA Presentation to the Task Force (design modifications made for this Report)]

Explanation 2:

What is Regression Analysis?

Regression analysis is a widely used statistical technique that predicts values of something (e.g., the prices of homes that sell) using a group of predictor variables (e.g., a home's condition, location, size). As applied by OPA, it answers the question: What is the expected value of a property given its measured characteristics?

One form of regression (ordinary least squares regression, or OLS) uses a fixed set of variables flowing from a theory (or experience) as predictors, and the resulting equation, along with measures of statistical significance, show which variable(s) significantly contribute to the explanatory power of the equation.

Stepwise regression is a variant of OLS regression that OPA uses. There are two basic types of stepwise regression. ***Forward stepwise regression*** starts with the best predictor of value and adds variables into the prediction equation until additional variables add little or nothing to the predictive power of the equation. ***Backwards stepwise regression*** starts with all the potential predictors of value, dropping out the least important predictor at each successive step, stopping when removing a variable significantly impairs the quality of the prediction.

Stepwise regression is recognized by researchers as both potentially useful and potentially problematic. Statistical concerns about use of the technique are greater when the sample of data is not representative of the population to which the results are generalized. Also, using the very same data, the resulting equations from forward and backward stepwise regression can be quite different. The implication of that is that the conclusions drawn about what is influencing that which the researcher is trying to predict (and how any factor is exerting its influence) can be quite different just because of the difference in the approach to the regression analysis. Some practitioners counsel that when there is established theory around that which the stepwise regression aims to address (e.g., what gives property its value) then that theory and/or expert knowledge should guide the selection of variables – not a statistical process.

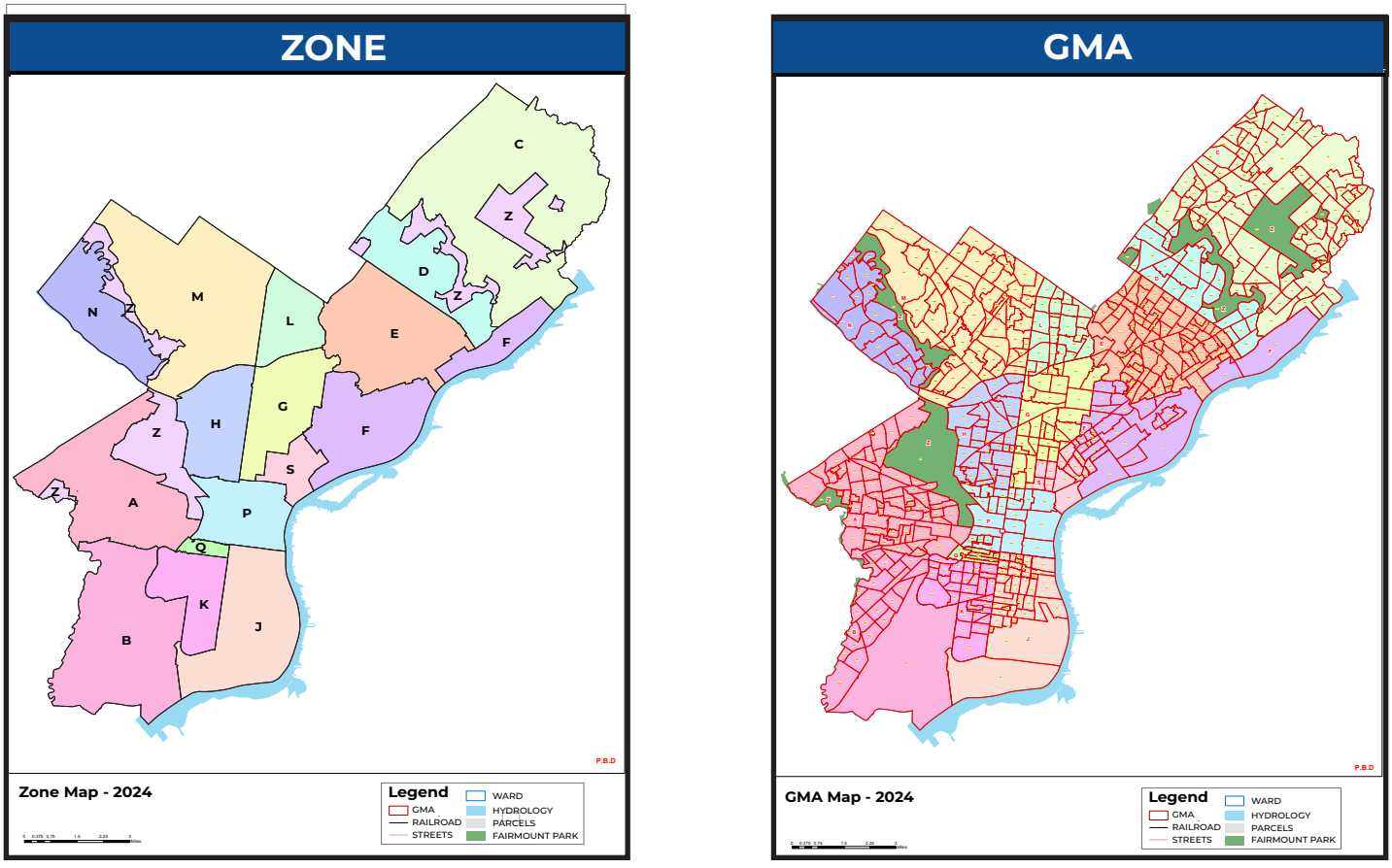


Figure 4: OPA Zones and Geographic Market Areas (GMA)[20]

As part of its effort to have complete and accurate data, not only on the homes that sell but also all the homes for which assessed values are determined, OPA also gathers and uses data from other City agencies. For example, OPA gathers permit/citation data from the Department of Licenses and Inspections on all properties; these data are critical to understanding the condition of homes. It also adds

data from inquiries associated with First Level Reviews wherein the public brings in (and OPA validates) data about, for example, a property's size and condition. All of this is critical to ensure that the properties on which statistical models are built is accurate and complete; and similarly, to ensure that the application of those valuation models to all properties is sound. Notwithstanding this data collection and cleaning effort, **OPA stated: First, more and better data is always needed and would be helpful to producing good estimates of value. Second, OPA knows more about properties that sell than the universe of properties.**[21]

After values are projected through OPA's mass appraisal models, all market value estimates undergo a comprehensive review by licensed Pennsylvania Evaluators prior to certification and public release. OPA describes this review process as a critical quality control step designed to ensure that model outputs (i.e., assessments) are both reasonable and consistent with observed market behavior.

During this stage of OPA's process, evaluation staff analyze properties that exhibit characteristics that deviate from expected patterns within their geographic market areas. Evaluators apply their professional judgment, supported by market data and comparable sales, to determine whether adjustments are warranted. In cases where a model produces an atypical value due to unique property characteristics, OPA staff may make targeted manual refinements to align the assessment with similar properties, without disrupting the overall integrity of the model. OPA states that this approach reflects standard mass appraisal practice, where model efficiency is balanced with expert oversight to ensure both accuracy and uniformity.

Once modeling and the aforementioned review is complete, it is routine that ratio studies are performed to ensure that the final assessments meet the quality standards of the industry as promulgated by the IAAO. Those ratio studies evaluate whether the assessments are ***accurate*** as measured by the Assessment Ratio (i.e., the typical ratio of assessed value to sale price is 1.0, or close to it), ***uniform*** as measured by the Coefficient of Dispersion, and ***vertically equitable*** as measured by the Price Related Differential.[22] [See Figure 5] OPA's assessments, using the IAAO standard benchmarks for each of these measures,[23] have improved over time to the point where, in general, OPA is meeting those industry standards. This has not always been the case, but years of public investment and efforts focused on improving the data, administrative processes, and statistical modeling have borne fruit, and that is reflected in external reviews of OPA's assessment quality measurements.

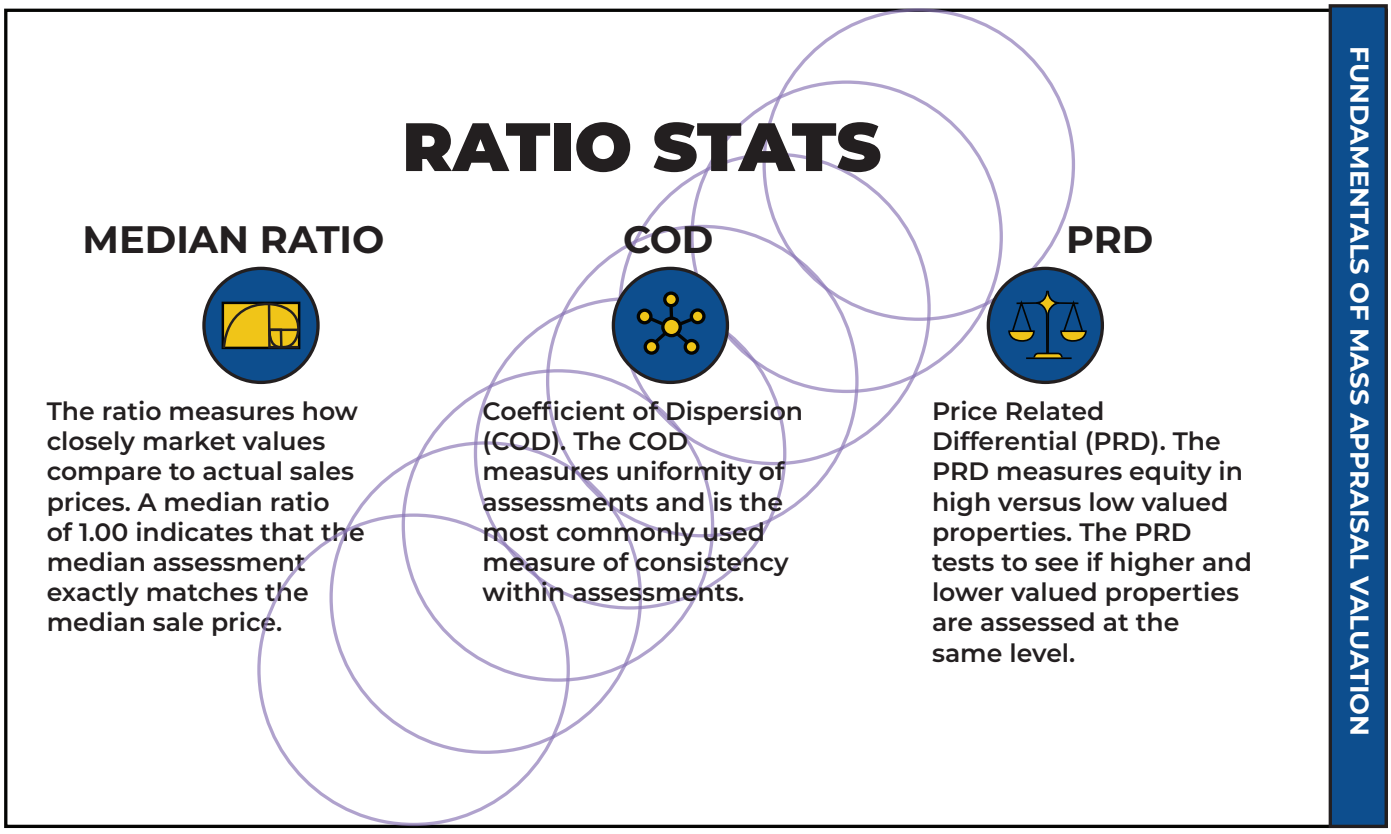


Figure 5: Standard Measures Of Assessment Quality [Source: OPA Presentation to the Task Force (design modifications made for this Report)]

There is an intricacy to ratio studies that should be explained, and it has to do with what sales are included in those ratio studies. Having already excluded some sales because they were not appropriate for statistical modeling, more properties can be excluded for purposes of conducting a ratio study because they represent either statistically anomalous situations or the model simply does not do a good job estimating value. We note that there are IAAO standards for the conduct of ratio studies–and those standards provide guidance on various aspects of those studies, including guidance (and cautions) related to dealing with exceptional cases/sales (i.e., "outliers") in the data used for the ratio study. In the conduct of such studies then, one needs to be careful in the rejection of sales for ratio studies that the picture of compliance with industry standards is not distorted by rejection of sales just because the predicted value is far from the actual price. As IAAO notes: "In general, a ratio study is valid to the extent that the sample is sufficiently representative of the population."[24]

Representation

In the craft of what is known as inferential statistics (which is what OPA is doing with its statistical modeling), researchers seek to draw conclusions on a ***sample*** of cases (i.e., a subset of all cases) that under prescribed circumstances can be probabilistically applied to the ***population*** of cases from which that sample was drawn. This is known as ***generalization***. In the context of residential tax assessments, the sample to which we refer is comprised of the ***homes that sell***, and the population is ***all homes***. That generalization process is reasonable if the sample is drawn at random from the population, and the resulting sample can be expected to be representative of the population.

The OPA process therefore rests on an affirmative answer to the question: ***Are homes that sell fundamentally like all homes?*** To have full confidence in the results of the modeling of home sale prices that are then applied to all homes, we must believe that the group of homes that sell are in all critical ways (e.g., condition, size, age, etc.) similar to all homes. The question of the representativeness of those homes that sell of all homes arose in the Task Force meetings.

IAAO's position on representativeness states:

> ***3.4.5 Data Representativeness:*** Data used in developing an AVM [Automated Valuation Model] model should reflect the subject property or population of properties to produce quality results. The available sales may limit representativeness and applicability of the AVM model....
>
> ***4.1 Data Availability:*** ...AVM models are based on a sample of the population. In preparation for model specification the analyst should review the sample data to insure [sic] representativeness of the population to which the model will be applied.[25]

To inform the Task Force discussion on this issue, Reinvestment Fund examined U.S. Census American Community Survey data on this question. [See *Appendix 6* for a more complete description of the analysis.] While not a fully controlled or definitive representation study, the analysis suggests that there is a representativeness issue related to the data upon which OPA's models are created.[26,27]



The differences identified are important. If recent homebuyers have higher income–and higher home values–than households that have not recently bought, and if those homes that recently sold are of better condition than all other properties upon which OPA's models are based, and if people who recently purchased a home are more frequently White than those who have not purchased recently, results from that non-representative sample of properties applied to all properties could explain greater assessment regressivity and less uniformity in neighborhoods with higher percentages of Black and Hispanic residents.

Assessments And Fair Housing

Mayor Parker's call for the formation of this Task Force arose specifically out of the fair housing concerns raised in the Reinvestment Fund/CLS/CEPA team's reports, and so fair housing became a key area of concentration for the Task Force.

There are multiple laws–federal, state, and City–as well as regulations at the state and federal level that are relevant to a discussion of the intersection of property assessments and fair housing.[28] We highlight the critical laws and provisions applicable to property assessment.

Under the federal Fair Housing Act (Act), it is unlawful to make critical decisions about housing based on race, color, religion, sex, national origin, handicap or familial status.[29] Critical housing decisions in the Act include the availability of and the terms and conditions upon which housing is made available to rent or purchase/sell; it also includes provisions related to the financing (e.g., mortgage lending) and appraising of property, marketing of housing, zoning and land use decisions that impact housing availability, as well as protections to ensure that one is not harassed or intimidated in their exercise of these rights (or the rights of others) under the Act.

Monitoring and Self-Testing For Fair Housing Compliance

In a context different than property assessment, as an example, Congress amended the Fair Housing Act in 1996 to include section 814A Incentives for Self-Testing and Self Correction. This provision recognizes the value, for example, of a lender to engage in a self-test to ensure that if there is discrimination in its process that it is identified and corrected.

By analog, some Task Force members asked whether OPA could routinely examine the results of its assessments by neighborhood racial or ethnic composition (as had been done by the research team lead by Reinvestment Fund) to ensure that the measures of assessment accuracy and quality do not vary systematically by neighborhood racial composition. We discussed this as self-monitoring.

Pennsylvania has a civil rights law focused on housing that the federal government has deemed substantially equivalent to the Act, and that law is enforced by the Pennsylvania Human Relations Commission.[30] The City of Philadelphia has its Fair Practices Ordinance which has many similar provisions to the state and federal law, but is not at this moment considered substantially equivalent to the federal fair housing law. The City's law is enforced by the Philadelphia Commission on Human Relations.[31]

Also a critical part of the fair housing landscape as it applies to property assessment is the Uniform Standards of Professional Appraisal Practice (USPAP), a standard that is implemented by the Appraisal Standards Board.[32] In 2024, The Appraisal Standards Board adopted a nondiscrimination section of its Ethics Rules. That section delineates the applicable civil rights laws and regulations, as well as how those laws should be interpreted and applied to the appraisal (and assessor) professions. The Ethics Rule specifically names the Act along with the Equal Credit Opportunity Act (ECOA) and sections 1981 and 1982 of the Civil Rights Act of 1866. It further defines the ways that discrimination in property valuation can occur–by intentional acts of discrimination or by those acts that though non-intentional have a disparate impact. In fact, USPAP affirmatively states that its Ethics Rule can be violated through discriminatory "disparate impact (employing neutral policies or practices that disproportionately harm members of a protected group, except when those policies or practices are justified and there are no less disproportionate policies or practices that could be used instead)" (USPAP page 7, lines 194-198).[33]

OPA staff affirmatively stated that they do not–and cannot–use measures like the 1930s era Homeowners' Loan Corporation (HOLC) redlining maps, and do not consider race or ethnicity of the homeowners or the neighborhood within which a property is located in its process. OPA asserted that it would not only be illegal but also violative of their professional standards to include in their statistical models characteristics of homeowners, such as their race or the racial/ethnic composition of the neighborhood in which a property is located. Task Force members agreed that it would be unlawful and inconsistent with professional standards and responsibilities to consider race or other prohibited characteristics in making assessments.

Not in dispute among the Task Force members is that the federal Fair Housing Act and state law (as well as the City of Philadelphia's Fair Practices Ordinance) protect against policies or practices that have an unjustified adverse impact based on race and other protected characteristics.[34] But while numerous Task Force members maintained the position that OPA had an ability to consider whether such adverse impacts existed, OPA steadfastly maintained that they could not examine whether assessments manifest a pattern vis à vis the racial or ethnic composition of Philadelphia's neighborhoods prior to (or at any time) making the assessments public. If, for example, unintentional discrimination in the statistical determination of assessed values comes about by a facially neutral policy or procedure consistently applied, how would OPA know and what would it do? Should OPA ignore any potential racially disparate patterns in assessment quality measures?

We specifically call attention to this area of disagreement among Task Force members over what OPA can or cannot do with respect to its fair housing obligations, and report that this issue was not resolved. The Task Force makes a recommendation about how to resolve/address and manage this area of disagreement (see below).



Task Force Recommendations

The recommendations that follow are organized topically in terms of the specific issue(s) the recommendations are intended to address. We note that many of the recommendations received support of all (or most) Task Force members. But we do not wish to give the impression that all recommendations received unanimous support, nor are they equally supported. For example, all Task Force members agree with recommendations about OPA having more and better data. On the other hand, there was significant disagreement about what OPA can and cannot do to monitor itself for compliance with its fair housing obligations. We also note that some of these recommendations identify actions for the OPA while others will require the action of other City agencies and/or the Board of Revision of Taxes (BRT).

More And Better Data Are Needed To Develop Accurate, Uniform, Non-Regressive And Fair Assessments

All Task Force members agreed that OPA's work could improve if it had more and better data on homes in Philadelphia. This is particularly true as it relates to data describing the internal condition of properties. Data can be sourced not only within City agencies (as OPA already does), but also other public sources and third-party vendors. Task Force members endorsed pursuing all paths to data that better describes homes in Philadelphia.

- Undertake efforts aimed at gaining access to Bright MLS data. Assessor access to local MLS data does occur in other jurisdictions[35] and such precedent may be the basis upon which OPA access to the Bright MLS can be negotiated.[36]
- Work to get enhanced access to the Federal Housing Finance Agency's Uniform Appraisal Dataset (UAD).[37]

Improve The Quality Of Assessments: "Quality" As Defined By IAAO Standard Measures Such As The Assessment Ratio, COD, PRD, PRB Or Regression-Based Vertical Equity Measures[38]

Task Force members acknowledged and appreciated the documented improvement over time in OPA's assessment process as manifest in multiple external reviews of its work. And at the same time, there were several recommendations considered that would further improve both the quality and transparency of the assessment process–leading to enhanced public confidence in its work–and would also improve the fairness of the results of its work; fairness being expansively defined to include the notion that measures of assessment quality do not vary systematically by a neighborhood's racial/ethnic composition or income level.

- Improve OPA's sales validation/disqualification process.
  - Ensure that the selection of sales used in modeling and then for the ratio study is done consistently, under a transparent set of rules applied to comprehensive data surrounding the circumstances of each sale–and the rationale for each exclusion is documented in the OPA public data file.
  - Further, ensure that the group of properties used in modeling is not statistically meaningfully different from the group of properties used in the ratio study.
  - Ensure that sale prices and attributes of those properties appear to be commensurate.

- Access more and better data about the condition of all properties, especially the internal condition of properties, and the circumstances surrounding home sale transactions.

- More than three-quarters of homes in Philadelphia have condition codes reflecting "average" quality homes–thus there is little variation upon which to adjust valuation based on quality. The implication of such a large "average" category is that there is likely a lot of meaningful property-level condition differentiation that is not being accounted for with OPA's condition code as a model input.
  - OPA's condition measure is largely limited to external quality (supplemented with the City's administrative data, such as building permits and code violations).[39]
    - Create a strategy to expand and improve OPA's property condition measure to include elements such as construction quality, useful remaining life of critical property systems, and internal condition.[40]

- Enhance OPA's current ability to incorporate proximity/adjacency to market assets and disamenities and capture those features in the regression equation creating assessed values.

- Routinely run a representation study ensuring that sales samples used for modeling are representative of the full population of properties, in a manner not inconsistent with IAAO Section 5.3 on holdout samples and ratio study methodology, as well as fundamental rules of proper statistical procedure.
  - Representation can be evaluated in multiple ways, but the recommended evaluation must lead to an understanding that the group of residential properties on which modeling occurs is reasonably representative of all Philadelphia residential properties.
    - The representation study should therefore compare four groups of properties: (1) all homes that sell; (2) all homes that do not sell; (3) sales used in statistical modeling; (4) sales that are used in ratio studies evaluating compliance with industry standards. These groups must, along critical measures, be statistically indistinguishable from each other.



- OPA should ensure through purposeful examination that properties that benefit from a residential tax abatement do not distort valuations of properties without abatements. And because there is an apparent contradiction between what the law states and what OPA represents is practicable, counsel should be sought regarding the interpretation of law that states abated properties not be used in modeling (which is different than ensuring that said properties do not distort valuations of nearby properties) [Phila. Code § 19-1303.2 (5)(c) & § 19-1303.4 (5)(d); and 72 Pa. Stat. Ann. § 4711-204 & § 4711-304].[41,42]

- Conduct randomized on-site inspections of properties in areas that manifest greater inaccuracy, and/or for properties/property types for which there is inadequate representation in the model.

Addressing Racial Bias In Assessments[43]

The Task Force spent much time debating approaches that OPA could adopt for purposes of examining and addressing the observed racial disparity in assessment outcomes that was the genesis of this Task Force. Becoming aware of disparities, the group discussed, was a first and critical part of the solution. OPA, however, insisted that it cannot take any action as part of its process as it relates to race as that would constitute a violation of their professional standards. This position represented an irreconcilable difference between OPA and several Task Force members.



- Continue to ensure that OPA is not using any variables, processes or procedures that are overtly biased on a prohibited basis (also known as an Intent Inquiry) under the Fair Housing Act, Equal Credit Opportunity Act, Sections 1981 and 1982 of the Civil Rights Act of 1866, the Pennsylvania Human Relations Act and the Philadelphia Fair Housing Ordinance. While there is no evidence that this is being done, constant vigilance is essential.

- Respecting OPA's assertion that it cannot self-monitor, the Task Force offers a multi-part recommendation: (1) The City should seek legal and industry (IAAO) advice about what OPA can and cannot do with respect to self-monitoring for fair housing issues; (2) The City should seek advice from IAAO regarding OPA's professional responsibilities under USPAP with respect to what it can and cannot do to self-monitor for fair housing issues; and (3) Until advice either affirms OPA's position or provides clarity that self-monitoring for fair housing issues is legal and consistent with industry advice, retain an independent third-party expert with demonstrated expertise in fair housing and the application of statistical techniques and procedures in civil rights matters, to review OPA's final assessments for differences in assessment quality related to a neighborhood's racial/ethnic composition or income level. This is an expert who is more than an expert in property taxes; it is someone with the ***skill and track record of examining statistical processes and procedures in civil rights contexts who also has experience in mass assessment.***

- A review and examination of OPA's processes designed to discover whether there are processes, practices, or alternative statistical approaches to modeling that determines assessed values that are at least as good (from the perspective of industry standards on assessment quality) but that manifest less differential in those quality measures by area racial/ethnic composition or income level is known in the fair housing and fair lending field as a ***less discriminatory alternative (LDA) analysis.*** Retain an independent expert to conduct a Less Discriminatory Alternative (LDA) analysis.[44] The expert must have demonstrated expertise in fair housing and the application of statistical techniques and procedures in civil rights matters–someone with the skill and track record of examining statistical processes and procedures in civil rights contexts. The LDA analysis would be designed to examine whether there exists a factor OPA could include in its valuation model that would yield assessments that are no less accurate, uniform or vertically equitable than those that OPA achieves now but reduces the demonstrated racial/ethnic/income bias in results.
  - Routinely evaluate the modeling results for evidence of differences in assessment quality based on racial/ethnic composition or typical income level where properties are located (also known as an Impact Inquiry). Such evaluation can be completed by OPA, the expert consultant, or both.
  - If a disparity is observed, OPA (or its expert consultant) shall work to identify the cause(s) and whether, for example, there is an approach to modeling or the assessment process that serves as a less discriminatory alternative.

- Examine the racial impacts of the use of Geographic Market Areas (GMAs).
  - Examine whether GMAs are simply operating as a proxy for racial/ethnic composition or income level in the estimation equation.
- Consider modifications to modeling separately for each OPA Zone. The different models that result from the statistical process in each OPA Zone suggest that value is established differently in different parts of the city.
- Consider modeling within housing type (e.g., single family attached homes).
- Explore use of different/additional variables in the model (e.g., years since last sale).
- Explore inclusion of other measures of assessment quality (e.g., Price Related Bias (PRB) or regression-based estimates) that may yield more actionable diagnostic results.

- Establish a method to remediate any observed disparities, including adjusting assessed values and resulting taxes for households that have been demonstrably improperly assessed.

- Create a standing Advisory Group with responsibility for reviewing the results of the evaluations, including a review of the 3rd party LDA examination, as well as new assessments before they are made public.

- Create an OPA Assessment Appeal Advocate. *This is not a recommendation for the OPA to create such an Advocate, but for the City to create the role within whatever department the Mayor deems appropriate.*

- Design and implement/access a high-quality fair housing training program.
  - Consistent with the 2024 changes to the Universal Standards of Professional Appraisal Practice (USPAP), Advisory Opinions 39 and 40, ensure that all OPA staff receive fair housing training, including recognition and acknowledgment that discrimination under USPAP (and adopted by IAAO) includes discrimination that manifests from intentional disparate treatment as well as unintentional disparate impact. Training to include relevant parts of the **Fair Housing Act, Equal Credit Opportunity Act, Sections 1981 and 1982 of the Civil Rights Act of 1866, Pennsylvania Human Relations Act and Philadelphia's Fair Housing Ordinance.**

The Task Force recognizes that the Commonwealth of PA now requires some OPA staff to receive fair housing training on a recurring basis.[45] The Task Force's recommendation is that all staff receive fair housing training from trainers with specific expertise in the above-reference civil rights laws and best practices, USPAP/IAAO nondiscrimination standards (and any changes that may occur between trainings), and knowledge of assessment and appraisal practices, particularly (but not limited to) mass assessment practices.

- Diversify the candidate pool for Real Property Evaluators at OPA.
  - Coordinate with the City's Office of Human Resources.
  - Partner with schools.
  - Work with Task Force members.
  - Continue the Intern program at OPA.

Addressing Potential Systemic Bias In the Assessment Appeals Process

The Task Force was charged by Mayor Parker with reviewing OPA's procedures and recommending ways to improve the accuracy and fairness of residential property valuations by OPA. The Philadelphia Code states that the Chief Assessment Officer shall certify annual revisions and equalizations of all assessments and valuations made by the OPA.[46] Thus, property assessments should be done every year. Consistent with this requirement, the OPA posts valuations online annually for all properties. However, the group recognized that the complete valuation process realistically runs in a 2- to 3-year-long cycle that includes both: a) the initial valuations done by the OPA; and b) a significant appeal process which allows further corrections to valuations by both the OPA and the Board of Revision of Taxes (BRT).[47] In Philadelphia, the valuation appeals process involves: a) an informal written appeal by the taxpayer directly to the OPA via a "First Level Review" request; and b) a formal, statutory appeal by the taxpayer to the BRT. The deadline for a taxpayer to file an FLR is 60 days after a Notice of Valuation is mailed out. The deadline for filing a formal appeal to the BRT is the first Monday in October.

The Task Force came to understand that the appeals process plays a significant role in achieving accuracy and fairness in assessments by making sure that property owners have an opportunity to question and challenge their property valuations. Likewise, the IAAO also recognizes the significance of the appeals process in ensuring the accuracy and fairness of valuations:

"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. Key to any assessment appeal system is an open and transparent process that relies on a clearly written set of procedures and provides due process."[48]

The Task Force was specifically charged with looking at OPA's valuation process. Making recommendations regarding the formal appeals process conducted by the BRT was beyond the scope of our work. However, the appeals process is plainly a crucial part of the overall process of achieving accuracy and fairness in assessments. With that in mind, the Task Force makes the following recommendations regarding ways to improve the formal assessment appeals process; these recommendations relate to the BRT, not the OPA.

- Evaluate and monitor the activities of the BRT and the impacts of its actions on overall assessment quality metrics, as well as systemic fairness in assessments.[49]
- Implement an in-house process for the BRT to gather data on the formal appeals process (e.g., Who files appeals? Where are appeals filed? What appeals are granted/denied? What is the average amount of reduction? Are more commercial or residential appeals filed?).
- Similar to the studies done of the OPA valuation process, evaluate and review this BRT data, as well as the process and procedures used by the BRT, and the impacts of its actions on overall assessment quality metrics, as well as systemic fairness in assessment appeals.
- As with the OPA, if there are concerns about the BRT's ability to self-monitor or to consider racial and ethnic characteristics as part of this review, the City should retain an independent third-party expert to examine whether there are differences in BRT appeals outcomes related to a neighborhood's racial/ethnic composition or income level, and the impact of any observed differences.

Commit To Regular, Predictable Citywide Reassessments

Commit to complete reassessments on a two- or three-year cycle. This has the benefits of keeping assessments accurate, and avoiding equity gaps emerging in rapidly appreciating markets. This timing is considered, by many, to be "best practice" for assessing bodies. Philadelphia, in comparison to other Pennsylvania counties, already stands out for its routine reassessments. Many Pennsylvania counties have not had a complete reassessment for several decades (See *Appendix 8*).

Expand Taxpayer Education and Outreach Regarding Both FLRs and BRT Appeals

Task Force members universally agreed that while much is being done now to ensure property owners understand their assessments, there is also work that can be done to improve the appeals process. Such efforts should be designed not only to educate but to encourage property owners to bring questions to OPA, especially via the First-level Review (FLR) process wherein issues around the assessment can be addressed in this less formal setting, and file timely BRT appeals when necessary. ***We note that many of these recommendations fall not with OPA but with another department within the City, and/or the BRT as deemed appropriate by the Mayor.***

- OPA should establish more connections with the City's funded housing counseling agencies, both to promulgate information about OPA's processes and procedures, as well as to open a communication channel with intermediaries who meet with homeowners around a variety of issues connected with their homes and mortgages (including various property tax-related issues such as the assessed amounts, escrow amounts necessary to cover property taxes).
- The Task Force recommends that the City create an OPA Assessment Appeal Advocate focusing on assisting residential homeowners and small business owners to access the appeals process effectively.

- Enhance efforts to ensure taxpayers understand (with specificity) how their assessed values were established, as well as their rights and options, including both the less formal FLR and more formal BRT appeals processes.
  - If homeowners understood exactly how their assessed value was established, they could more easily understand how/what to appeal (e.g., a home is in below average condition, but OPA condition codes shows it to be rehabilitated, adding to its assessed value).

- Create videos in non-technical language explaining:
  - How assessed values are determined.
  - What goes into an assessed value.
  - How to request an FLR.
  - How to file an appeal with the BRT

- Create proactive neighborhood outreach efforts:
  - Doorhangers with QR codes to videos.
  - Survey homeowners to collect feedback on OPA and requests for FLRs, as well as on their experience of the formal BRT appeal process.

- The FLR and BRT appeals processes should be proactively marketed to property owners and streamlined to allow taxpayers to file FLR requests and BRT appeals simultaneously.

- Improve the timeliness of property owner notices of changes in valuation mailed to homeowners and posted online. Notices of changes in valuation should be mailed and posted online at least 120 days prior to the October deadline for BRT appeals in order to allow adequate time for appeals to be filed.

- Provide an estimated amount of taxes with these notices so that taxpayers can immediately understand the direct impact any change in assessment will have on their future tax bill.

- Enhance programs to encourage homeowners to share property information with OPA.

Enhance Transparency

OPA already releases much data to the public. But there are some data elements for which public OPA data lack sufficient detail to ensure that decisions are made consistently and in accordance with rules, regulations, and industry standards.



- Release all datasets used in the assessment process on OpenDataPhilly (or another open data platform), including current property characteristics and identification of those used in assessment modeling, sales and sales features (e.g., time-adjusted sale prices and qualification/disqualification for modeling and/or ratio studies, and spatial definition of the geographies created by OPA in the modeling process (i.e., Zones and GMAs). The Task Force acknowledges that much of this is already available, but notes that these data will require augmentation to meet the specifics of this recommendation.
  - Sales excluded from modeling or evaluation should be annotated with the reason(s) for exclusion.

- Create and widely distribute documents that explain in common, everyday language, how assessments are done (e.g., create visuals to accompany notice of assessments that show how the assessed value was arrived at)–perhaps a “base model” visual customized to the subject property.
  - Release all code used in property assessments, including modeling and evaluation of model results.

- Publish detailed OPA Zone-by-Zone equations (including coefficients for each variable and overall explanatory power of the model) used to determine assessed values.

Appendix 1: Assessment Quality Measures By Census Racial/Ethnic Composition and Income Levels

Excerpted from Examining the Accuracy, Uniformity & Equity of Philadelphia's 2023 Real Estate Tax Assessments. (*https://www.reinvestment.com/wp-content/uploads/2024/04/CLS_Tax_2023_Brief_CLEAN_2024_04_25.pdf*)

Note: In the tables that follow, entries in the column labeled "OPA Sales" represent the reported statistic based on the sample of properties that OPA deemed appropriate for a ratio study. Entries in the column labeled RF Sales represent the statistic based on the sample of properties Reinvestment Fund used based on IAAO standards and limited statistical "trimming." ***Cells in the tables shaded light blue have values greater than the IAAO standard.***

"... by one measure of assessment quality, the median ratio, OPA is generally within IAAO standards when Census tracts are ranked by race...However, ... Census tracts with higher shares of Black residents are more likely to have high CODs and high PRDs than are Census tracts with lower percentages of Black residents. Put another way, ... Census tracts with the most assessment quality issues (highest median assessment ratios, COD, and PRD) are again those tracts with high shares of Black residents."

Census Tract Race		Media Ratio 0.9 - 1.1		Coef. of Dispersion <15		Price-Related Differential 0.98 - 1.03	
Race Decile	% Pop. Black	RF Sales	OPA Sales	RF Sales	OPA Sales	RF Sales	OPA Sales
10	90.3 - 98.9%	1.08	0.96	29.0	19.4	1.12	1.05
9	82.5 - 90.3%	1.17	0.93	30.8	26.1	1.13	1.10
8	61.4 - 82.1%	1.05	0.96	27.5	22.3	1.11	1.07
7	41.7 - 60.7%	1.02	0.95	23.2	19.3	1.10	1.07
6	25.1 - 41.3%	1.04	0.99	22.9	15.2	1.09	1.04
5	16.1 - 24.9%	1.01	0.98	18.8	13.2	1.09	1.05
4	10.2 - 15.8%	1.02	0.99	17.8	11.2	1.07	1.03
3	5.4 - 10.1%	0.99	0.99	13.5	11.0	1.04	1.03
2	1.7 - 5.2%	0.99	0.99	14.0	10.5	1.05	1.02
1	0.0 - 1.7%	1.00	0.99	15.7	10.5	1.04	1.02
Philadelphia	39.7%	1.01	0.99	20.6	14.8	1.09	1.04

"The Census tract decile with the very highest concentration of Hispanic residents (more than 37%) has a relatively high median assessment ratio (with Reinvestment Fund Sales) and a high COD and PRD (with both datasets). The nine deciles with lower concentrations of Hispanics are closer to citywide figures. OPA Sales show a tighter conformity to citywide figures in most areas, although still elevated COD and PRD in the areas with the most Hispanic residents such as Logan and Frankford."

Census Tract Ethnicity		Media Ratio 0.9-1.1		Coef. of Dispersion <15		Price Related Differential 0.98-1.03	
Ethnicity Decile	% Pop. Hispanic	RF Sales	OPA Sales	RF Sales	OPA Sales	RF Sales	OPA Sales
10	37.4 - 91.7%	1.11	0.98	29.4	21.0	1.13	1.08
9	19.4 - 36.7%	1.03	0.99	20.4	12.8	1.07	1.03
8	11.6 - 19.3%	1.01	0.99	15.8	11.7	1.05	1.02
7	8.1 - 11.6%	1.00	0.99	15.0	12.3	1.05	1.03
6	6.3 - 8.0%	0.99	0.97	15.7	12.7	1.06	1.03
5	4.8 - 6.3%	1.00	0.97	18.4	15.2	1.07	1.03
4	3.7 - 4.8%	1.01	0.98	18.8	15.9	1.08	1.05
3	2.3 - 3.7%	1.00	0.96	23.3	16.8	1.11	1.04
2	0.8 - 2.2%	1.02	0.97	24.3	18.4	1.12	1.05
1	0.0 - 0.8%	1.06	0.96	27.8	18.4	1.15	1.05
Philadelphia	15.4%	1.01	0.99	20.6	14.8	1.09	1.04

“When Census tracts are grouped by median household income, ... property owners in areas with a median income above about $81,000 per year have assessments that are reasonably accurate and uniform by all measures and both datasets. In contrast, owners in an area with incomes less than about $58,000 have very high CODs and PRDs regardless of which dataset is used. Three of the lower income deciles also have high median assessment ratios according to Reinvestment Fund Sales.”

Census Tract Income		Media Ratio 0.9-1.1		Coef. of Dispersion <15		Price Related Differential 0.98-1.03	
Income Decile	Med. Income	RF Sales	OPA Sales	RF Sales	OPA Sales	RF Sales	OPA Sales
10	$95,455-$210,322	0.98	0.98	11.7	10.5	1.03	1.03
9	$81,367-$94,735	0.99	0.98	12.2	10.9	1.03	1.03
8	$66,830-$81,262	0.98	0.98	14.3	11.3	1.03	1.02
7	$58,349-$66,217	1.01	0.99	16.3	12.1	1.04	1.02
6	$49,787-$58,186	1.02	0.99	18.3	13.5	1.06	1.04
5	$45,154-$49,748	1.03	0.98	22.0	15.9	1.09	1.05
4	$36,712-$44,917	1.07	0.97	26.5	18.3	1.11	1.05
3	$30,077-$36,646	1.12	0.94	30.5	26.0	1.14	1.12
2	$21,670-$29,597	1.15	0.95	30.8	25.5	1.14	1.10
1	$11,955-$21,638	1.23	0.97	30.6	29.0	1.19	1.12
Philadelphia	$52,649	1.01	0.99	20.6	14.8	1.09	1.04

Appendix 2: Overview of Task Force Meetings

Reinvestment Fund suggested Task Force members, and the Mayor's Office made final selections. There was a cooperative effort between the Mayor's team and Reinvestment Fund to ensure that the Task Force members represented critical subject matter areas of expertise (e.g., assessment policy and practice, econometrics, fair housing, appraising, real estate sales). Also important was representation from the public sector, as well as the private/non-profit sector. Members of the Task Force and their organizational affiliations are provided in *Appendix 3*.[50]

The Task Force first met on 11/11/2024; subsequent meetings occurred on 12/17/24, 2/18/25, 5/18/25, 7/1/25 and 8/5/25. Meetings were offered in a hybrid format with most people attending in-person at the offices of Reinvestment Fund; meeting summaries were prepared after each meeting and shared with Task Force members. Meeting-by-meeting highlights include:

Meeting #1: Task Force members introduced themselves and co-chairs offered an overview of the Task Force charge along with a proposed process for going forward. The main topic of Meeting #1 focused on how OPA does what it does. Task Force members agreed that, to make informed recommendations to Mayor Parker, we collectively needed more detailed information on the assessment process itself. OPA agreed to present that detail to the Task Force at the next meeting.

Meeting #2: This meeting included a detailed presentation of the assessment process by the OPA team.

Meeting #3: This meeting offered an overview of the two studies of OPA completed by the research team led by Reinvestment Fund, including a discussion of the methodology and findings.

Meeting #4: Arising from discussions during Meetings #2 and #3, particularly with respect to a potential "representativeness" issue (i.e., the extent to which homes that sell and are used for statistical modeling are representative of the universe of properties), Reinvestment Fund presented a high-level examination of the representativeness of households that move vis à vis those that do not.[51]

Meeting #5 and **Meeting #6:** These meetings were used to discuss a compilation of recommendations offered specifically by individual Task Force members in submissions to co-chair Goldstein, or that had been raised orally during the Task Force's prior meetings.

Appendix 3: Task Force Members

Monica Williams, *MBA, CPE, Deputy Chief Assessment Officer, Office of Property Assessment; Task Force Co-Chair*

Jennifer Nguyen, *Chief of Staff, Office of Property Assessment*

Ira Goldstein, *PhD, Principal, IJG Urban Advisors, LLC (formerly, Senior Advisor, Reinvestment Fund's Policy Solutions Group); Task Force Co-Chair*

Zoe Millstein, *Nowak Fellow (former), Reinvestment Fund*

Drew Aldinger, *Chief Deputy City Solicitor (Property Assessment, Boards & Commissions Unit), Office of Property Assessment*

Carlo L. Batts, *MAI, Rittenhouse Appraisals*

Annette C. Collier, *Chair of Public Affairs-Philadelphia Metropolitan Board of Realtist*

Kwame Donaldson, *Staff Economist, Appfolio*

Octavia Howell, *Executive Director, Philadelphia City Planning Commission*

Kayla Jones, *PhD Candidate, Cornell University*

Kevin Keene, *Owner, Keene Mass Appraisal Consulting*

Jessie Lawrence, *Director, Philadelphia Department of Planning and Development*

Helen Loughead, *Chief Financial Officer, Office of Philadelphia City Council President Kenyatta Johnson*

Colin Stayna-Wynter, *GIS Analyst, Philadelphia City Council*

Claire Craig, *GIS Analyst, Philadelphia City Council*

Alex Raju, *Modeling Supervisor, Office of Property Assessment*

John P. Relman, *Founding Partner, Relman Colfax, PLLC*

Timothy Lambert, *Counsel, Relman Colfax, PLLC*

James Williams, *MSc, CPE, Mass Appraisal Supervisor, Office of Property Assessment*

Odette Williamson, *Director of Racial Justice Advocacy, National Community Law Center*

Montgomery L. Wilson, *Esquire, Supervising Attorney, Community Legal Services of Philadelphia (CLS)*

Appendix 4: Outside Experts Consulted

Christopher Berry, University of Chicago, Harris School of Public Policy, and Mansueto Institute for Urban Innovation

Robert Gloudemans, Mass Appraisal Consultant

Shannon Hiss, Assessment Advisor, International Association of Assessing Officers

Andrew Kahrl, University of Virginia, School of Arts and Science, History Department

Amy Rasmussen, RES, AAS, FIAAO, Executive Director, International Association of Assessing Officers

John Russell, Executive Director, American Association of Career Schools

Bernard Siskin, Director, BLDS LLC

Bruce Witt, Instructor, IAAO, and Chief Appraiser, Bucks County Board of Assessment

Appendix 5: OPA Assessment Equations By Zone

Appendix 5, Table 1, created from information shared by OPA, represents a selection–not all–of the variables in the final Zone-level equations predicting home sale prices for purposes of setting assessed values for all properties in the Zone. Presented in the table are the regression coefficients (i.e., effect parameters) for each of the variables used to predict home sale prices in each zone. The GMA coefficients are not included in this table for ease of presentation; there are more than 400 GMAs. GMAs adjust price up or down based on a property's particular location within the Zone.

Generally, the larger the coefficient the greater the effect the indicator has on price; positive coefficients add to the price and negative coefficients decrease from the price. An "NA" for a variable in a Zone means that the variable was not in the equation (likely because it was not statistically significant). The Min (minimum) and Max (maximum) columns in the table denote the smallest and largest effects that a particular value holds in a Zone equation.

Note how different each equation is in terms of the indicators that remain in the equation to predict sale prices at the conclusion of the backwards stepwise regression procedure. Notice, for example, Zones E and M use all but three of these variables while Zone Q does not include 12 of them.

Also, the size of the coefficients for common variables across Zones are quite different (e.g., an above average property in Zone H has a substantially greater increment to its value than a similar condition property in Zone C).

A third observation is how the results occasionally seem logically perplexing. For example, in several Zones, the increment in value is greater for rehabbed properties than it is for new properties, while in others, a new designation has a greater increment in assessed value than a rehabbed property. Also in several Zones, the "Largest" property designation has a negative increment on prices while "Large" properties have a positive increment on price.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Min	Max
Constant	11.938	11.728	12.596	12.331	12.201	12.210	11.609	12.290		12.645	12.178	11.942	12.248			12.985	12.955		12.751	**11.609**	**12.985**
New	0.602	NA	0.254	0.201	NA	0.292	0.583	0.730		0.385	0.578	NA	0.558			0.388	0.415		0.419	**0.201**	**0.730**
New-Rehab	NA	0.489	NA	NA	0.265	NA	NA	NA		NA	NA	0.316	NA			NA	NA		NA	**0.265**	**0.489**
Rehab	0.487	NA	0.135	0.173	NA	0.384	0.457	0.604		0.285	0.446	NA	0.320			0.248	0.378		0.291	**0.135**	**0.604**
Above Avg	0.304	0.309	0.093	0.109	0.158	0.223	0.293	0.403		0.176	0.278	0.216	0.191			0.144	0.239		0.181	**0.093**	**0.403**
Below Avg	-0.413	-0.391	-0.251	-0.270	-0.358	-0.387	-0.452	-0.327		-0.276	-0.212	-0.473	-0.455			-0.281	-0.254		-0.302	**-0.473**	**-0.212**
Poor	-0.531	-0.614	NA	NA	-0.592	-0.539	-0.704	-0.454		-0.351	-0.235	-0.807	-0.741			NA	NA		-0.430	**-0.807**	**-0.235**
Sealed	-0.809	-1.031	NA	NA	-1.262	-0.913	-0.950	-0.739		-0.504	-0.307	-1.197	-1.031			NA	NA		-0.478	**-1.262**	**-0.307**
Small	-0.049	NA	NA	0.008	-0.048	NA	-0.029	NA		0.014	-0.012	NA	-0.017			NA	NA		NA	**-0.049**	**0.014**
Smallest	-0.167	NA	NA	NA	-0.096	NA	NA	NA		0.066	NA	-0.087	-0.131			0.071	0.032		NA	**-0.167**	**0.071**
Large	NA	0.032	NA	NA	0.015	NA	0.040	0.035		NA	0.041	NA	0.021			NA	NA		NA	**0.015**	**0.041**
Largest	NA	-0.145	-0.023	NA	-0.034	-0.047	0.091	NA		NA	0.033	NA	0.032			NA	NA		NA	**-0.145**	**0.091**
LN_Landratio	0.185	0.270	0.056	0.070	0.130	0.139	0.156	0.177		0.201	0.117	0.163	0.145			0.234	0.102		0.131	**0.056**	**0.270**
Gar_Detached	NA	NA	NA	0.021	0.014	0.092	0.184	NA		0.117	NA	NA	NA			0.067	NA		0.078	**0.014**	**0.184**
Central Air_Pre2000	0.056	0.103	0.031	0.039	0.041	0.063	0.047	0.093		0.078	0.100	0.104	0.064			0.053	NA		0.065	**0.031**	**0.104**
Yr_Built_Post_2000	NA	NA	0.107	0.231	NA	0.070	0.223	NA		NA	NA	NA	NA			NA	NA		NA	**0.070**	**0.231**
LN_SBLDSF_BSZ_Row	0.389	0.47513	0.25979	0.36177	0.27956	0.49747	0.46444	0.41803		0.47798	0.38195	0.37009	0.36043			0.61108	NA		0.41896	**0.260**	**0.611**
LN_SBLDSF_BSV_Single	0.516	0.66791	0.25643	0.32712	0.15754	0.72838	0.52757	NA		0.7609	NA	0.34438	0.44891			NA	NA		0.44459	**0.158**	**0.761**
LN_SBLDSF_BSZ_Twin	0.431	0.61707	0.25481	0.33836	0.27421	0.37187	NA	NA		0.51341	NA	0.41835	0.35649			0.56303	NA		0.55095	**0.255**	**0.617**

Appendix 5, Table 1

Appendix 6: Overview Of Representativeness Inquiry

To understand the degree to which homes that sell are like the universe of all homes, Reinvestment Fund used data from the Census' American Community Survey (ACS). The ACS includes a question asked of respondents each year that queries where the household lived the prior year. Respondents could say that they were in the same home–or that they moved from any of several different locations. By analogy, those householders who respond that they moved from one or another location are representative of the group of Philadelphia homes that sold; those who say they were in the same home are representative of the non-sellers to whom the assessments would be applied. The question addressed by Reinvestment Fund is whether those two groups of households appear to be the same along dimensions critical to the Task Force's charge. ***The analysis is not offered as a definitive statement on the representativeness question; it is offered to illustrate that representativeness may well be an area of concern for OPA's statistical modeling.***

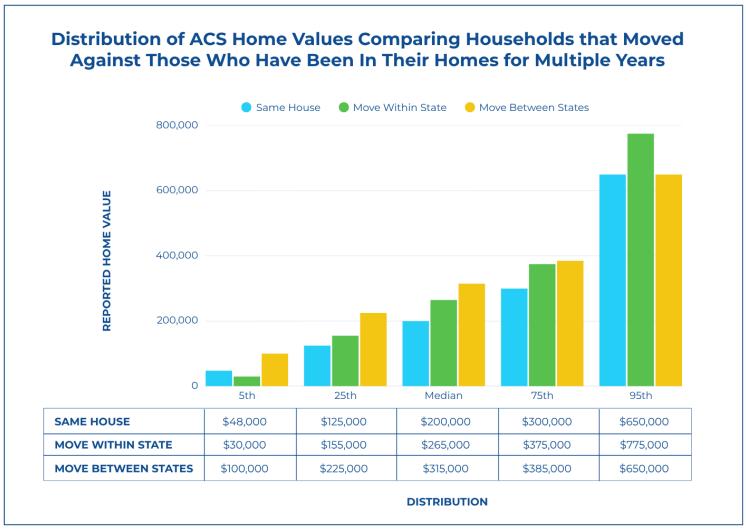
Reinvestment Fund compared these groups on several characteristics reported in the ACS (e.g., household income[52] and home value) as well as the race/ethnicity of the householder. The analysis is not intended as a definitive study of representativeness; that was not possible in the context of the Task Force work. It was intended as a high-level look at the potential that there may be a representativeness issue with OPA's analysis, and that the representativeness issue may connect to race/ethnicity–a key motivator for the formation of the Task Force. What the analysis shows is that ***the households that moved (i.e., the logical equivalent of OPA's sale file upon which modeling is based) were of higher income and have higher home values[53] than those who reported being in their home the prior year.*** In fact, not only did movers have higher average incomes and home values than those that did not move, but the entire income and home value distribution was shifted to higher values for movers.

This representation analysis was elaborated to include an examination of the distribution of housing conditions, as reported by OPA, for all homes, those that sold, and the subset of those used in OPA's ratio study. Reinvestment Fund found that those homes that sold (and those used in the ratio study) were of better condition than all homes. For example, approximately 15% of homes that sold were reported as rehabbed compared to under 2% of all homes. Approximately 19% of homes that sold were listed as above average compared to under 12% of all homes. And as it relates to the share of homes listed as average–approximately 80% of all homes compared to 45% of homes that sold are considered average condition. In other words, the condition of the group of homes that sold does not appear to be fundamentally the same as all homes.

Reinvestment Fund further analyzed the ACS data and found that movers were more frequently White not Hispanic while those who had not moved were more frequently Black or Hispanic. Demographically then, movers are more typically White while the remainder of the households that do not move are more typically Black or Hispanic.

This last fact, coupled with the value, income and condition differences, lends credence to the possibility that the non-representativeness issue may be contributing to the racial/ethnic and income disparities in uniformity and regressivity across Philadelphia neighborhoods.

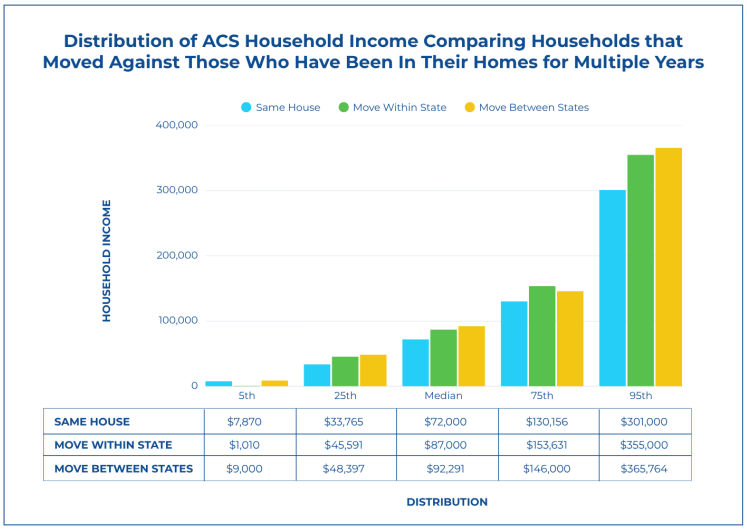
Selected slides from Reinvestment Fund inquiry into potential representativeness questions:



	5th	25th	Median	75th	95th
SAME HOUSE	$48,000	$125,000	$200,000	$300,000	$650,000
MOVE WITHIN STATE	$30,000	$155,000	$265,000	$375,000	$775,000
MOVE BETWEEN STATES	$100,000	$225,000	$315,000	$385,000	$650,000

Slide 1: Householder Estimated Home Value By Mover Status

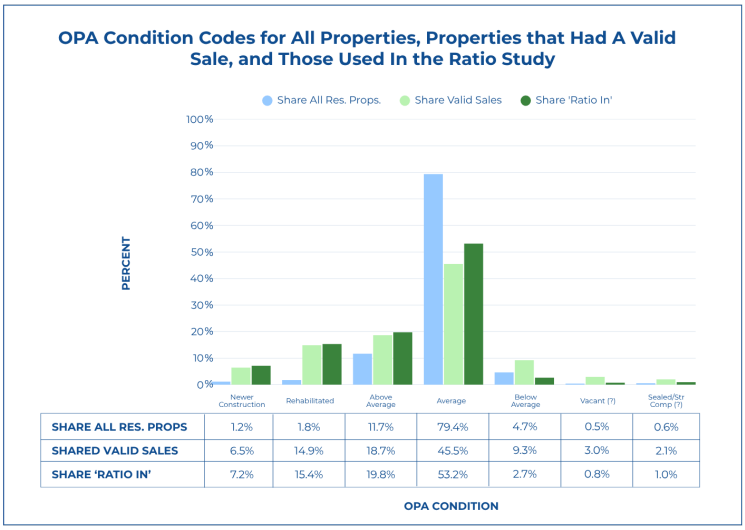
Slide 1 shows that householders who moved recently report higher estimated home values than those who have been in the same house for several years. The average–and the entire distribution–is higher for households that recently moved than for those that have been in their homes for multiple years.



	5th	25th	Median	75th	95th
SAME HOUSE	$7,870	$33,765	$72,000	$130,156	$301,000
MOVE WITHIN STATE	$1,010	$45,591	$87,000	$153,631	$355,000
MOVE BETWEEN STATES	$9,000	$48,397	$92,291	$146,000	$365,764

Slide 2: Householder Reported Income By Mover Status

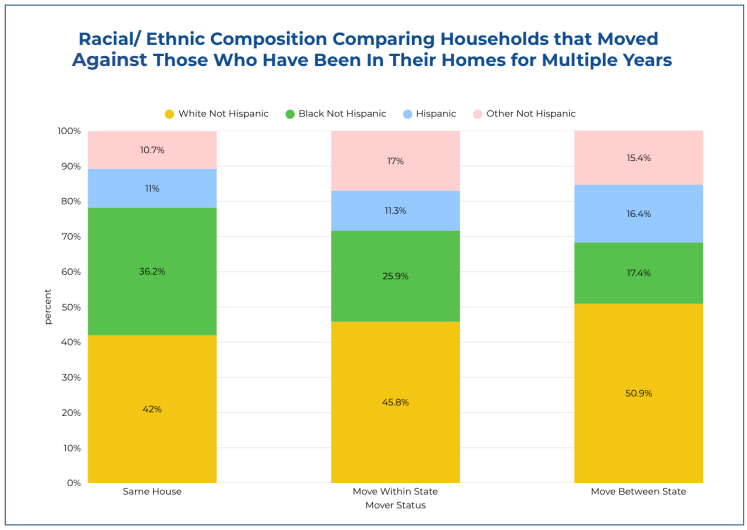
Slide 2 shows that the average and the entire distribution of reported household income is higher for those that moved than those who have been in their homes for multiple years.



	Never Construction	Rehabilitated	Above Average	Average	Below Average	Vacant (?)	Sealed/Str Comp (?)
SHARE ALL RES. PROPS	1.2%	1.8%	11.7%	79.4%	4.7%	0.5%	0.6%
SHARED VALID SALES	6.5%	14.9%	18.7%	45.5%	9.3%	3.0%	2.1%
SHARE 'RATIO IN'	7.2%	15.4%	19.8%	53.2%	2.7%	0.8%	1.0%

Slide 3: OPA Condition Code For Properties That Sold and All Properties

Slide 3 shows that homes that recently sold (and are used for modeling and ratio studies by OPA) are generally in better condition than the universe of homes.



Slide 4: Racial Composition By Mover Status

Slide 4 shows that households that have moved into their homes recently are more typically occupied by households that report being White not Hispanic; households that have been in the same house for multiple years are more typically people of color.

Appendix 7: OPA Management Letter

Executive Response Letter from the Office of Property Assessment

The Office of Property Assessment (OPA) appreciates the work and dialogue surrounding the Philadelphia Home Assessment Bias Task Force Report. We welcome constructive discussion regarding assessment practices and remain committed to the ongoing improvement of our processes, transparency, and public service.

We also appreciate the Report's recognition of the fact that the overall accuracy of assessments by the OPA has increased significantly from 2018 through 2023, a fact that is supported by external evaluations of the OPA and reports by the Reinvestment Fund, Community Legal Services (CLS), and the Center for Economic Policy. Moreover, we note and agree with the conclusion of the Task Force Report that there is good reason to believe that the accuracy of assessments has continued to improve from 2023 through the present because of steps taken by the OPA throughout that period. The Report's acknowledgment of these improvements is significant because fairness, uniformity, and equity are key performance measures of assessment quality within the assessment industry.

OPA's assessment practices are grounded in the professional standards established by the International Association of Assessing Officers (IAAO) and the Uniform Standards of Professional Appraisal Practice (USPAP). Philadelphia's ratio study statistics continue to fall within accepted industry benchmarks for accuracy, uniformity, and vertical equity, and recent independent reviews have recognized the significant progress made by OPA in these areas.

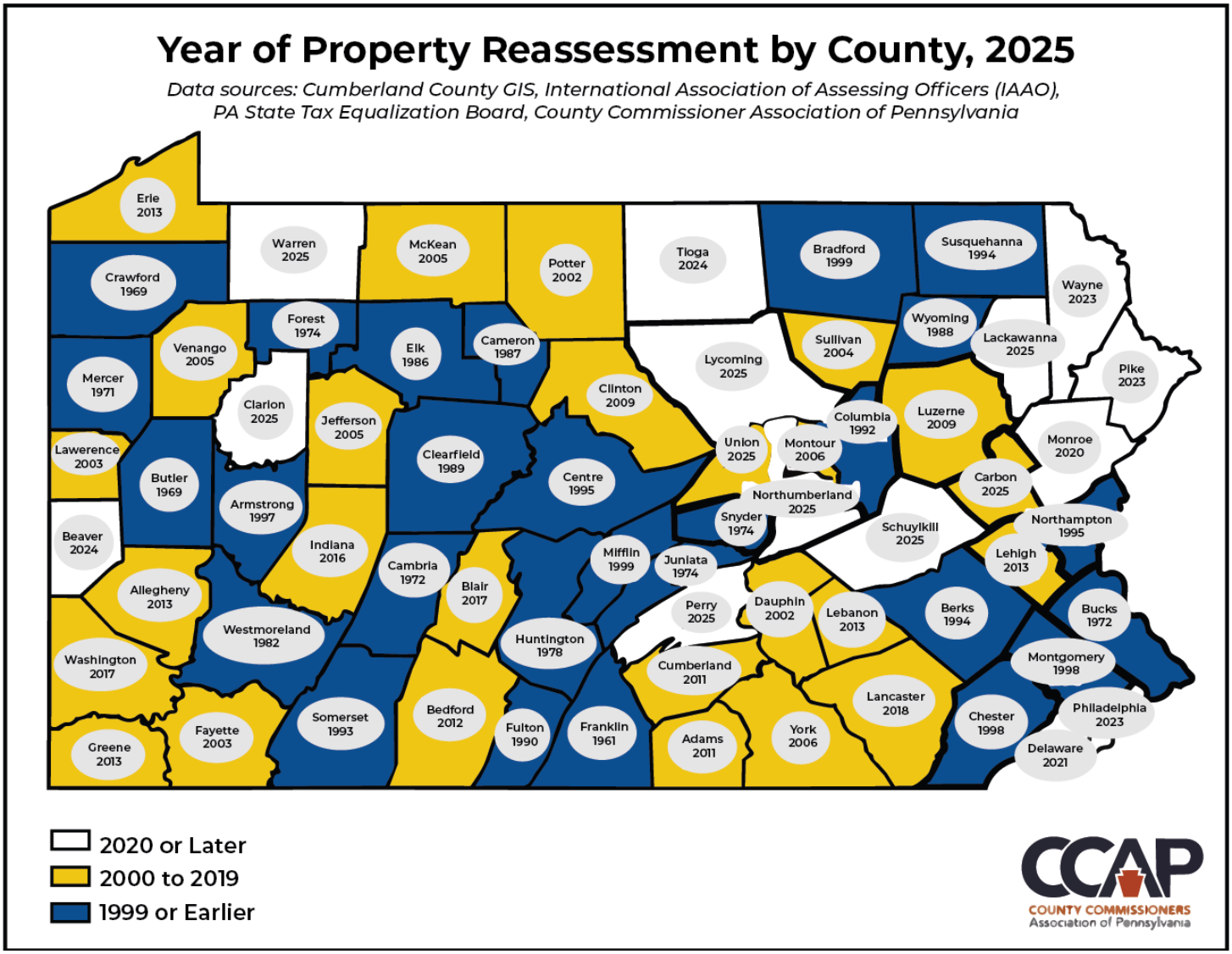
While the report identifies statistical disparities observed across certain neighborhoods, it is important to recognize that correlation does not equal causation. The existence of broader historical and market-based inequities within real estate does not, by itself, establish that OPA's assessment methodology is discriminatory or biased. OPA does not use race, ethnicity, income, or other protected demographic characteristics in its valuation process, and all assessments are developed through standardized mass appraisal techniques consistent with accepted industry methodology. The Uniform Standards of Professional Appraisal Practice Ethics Rule 2024 includes a nondiscrimination section, prohibiting appraisers from considering data such as race, gender, ethnicity, religion, national origin, disability or other protected characteristics to determine value.

The OPA disagrees with various statements and conclusions set forth in the Task Force Report and considers certain conclusions to be unsupported by evidence. Nonetheless, OPA remains committed to continuous improvement and we support efforts to enhance property data access and quality, strengthen transparency, improve public education, and evaluate emerging industry methodologies as standards evolve. OPA has welcomed ongoing conversations with Council members and their staff to discuss the assessment process and the modeling process, as well as attended community events and events hosted by organizations such as the PA Land Title Institute to discuss OPA functions and processes. We are happy to work collaboratively with any additional entity, stakeholder group, or independent expert to improve our processes, provided that recommendations remain consistent with recognized professional standards, sound statistical practice, and applicable law.

In 2026, OPA conducted a citywide revaluation for TY27. As part of the process, OPA retained an outside firm to conduct an external ratio study. The goal of the external ratio study is to ensure that OPA meets certain industry standards on key performance metrics and to provide recommended improvements. Furthermore, the Office of the Director of Finance will retain an external firm to conduct an independent, comprehensive evaluation of OPA's mass appraisal practices, procedures, and overall operations.

Ultimately, OPA's mission remains clear: to produce fair, accurate, uniform, and equitable assessments for all citizens of Philadelphia while maintaining compliance with nationally recognized assessment standards and professional ethics.

Appendix 8: Map Of Pennsylvania Counties and the Date Of Last Reassessment (as of 2025)



Source: *https://www.goerie.com/story/news/politics/government/2026/02/12/pennsylvania-counties-oudated-tax-assessments/88610700007/*

OPA's most recent reassessment occurred in 2026, and was released after the publication date of this map.

Footnotes

1 See, for example:
https://www.reinvestment.com/wp-content/uploads/2024/04/CLS_Tax_2023_Brief_CLEAN_2024_04_25.pdf, https://controller.phila.gov/philadelphia-audits/opa-accuracy-2023/ and https://www.inquirer.com/news/philadelphia/philadelphia-property-tax-assessment-fairness-equity-20220803.html. See also *Appendix 1*.

2 https://www.phila.gov/2024-04-26-mayor-parker-announces-creation-of-philadelphia-residential-property-assessment-task-force/

3 OPA's 2025 internal ratio study showed OPA's assessments to be largely within IAAO standards of accuracy, uniformity, and vertical equity. https://www.phila.gov/media/20240920162058/opa-tax-year-2025-residential-ratio-study.pdf The Independent review of these assessments conducted by Kevin Keene of Keene Mass Appraisal Consulting concluded "The overall results are very good, with significant improvement over 2024 performance." P. 3. https://www.phila.gov/media/20240920162059/opa-tax-year-2025-external-report-residential-ratio-study.pdf

4 See, for example:
Avenancio-Leon, Carlos and Howard, Troup, The Assessment Gap: Racial Inequalities in Property Taxation (October 5, 2019). Available at SSRN: https://ssrn.com/abstract=3465010 or http://dx.doi.org/10.2139/ssrn.3465010
Berry, Christopher. Reassessing the Property Tax. (March 1, 2021). Available at: https://drive.google.com/file/d/1ZKp1fA0_3LzwkEq8jcoJ5blAlnyo0mot/view

5 https://li.phila.gov/property-history

6 https://www.phila.gov/2024-04-26-mayor-parker-announces-creation-of-philadelphia-residential-property-assessment-task-force/

7 See fn 1.

8 See fn 3.

9 OPA averred that COD and PRD measures by Census tract racial/ethnic and income level uncovered by the study team did not demonstrate bias. The study team agreed that this was not proof of intentional bias, but that these patterns are indicative of a problem in the assessment process. And while OPA raised questions about the study team's approach, the sort of analysis used by the study team is referenced in a fair housing presentation made at the Assessor Association of Pennsylvania Annual Conference in 2024 by Calvin A. Kent and Bruce Witt. The presentation can be found at: https://www.paassessors.org/getmedia/140d8c55-a40a-4301-ad76-36f3ab4c5fb2/Fair-Housing.pdf

10 This study is available from Reinvestment Fund, upon request.

11 OPA asserted that while the RF/CLS/CEPA team used data made available by the City and OPA, that these data should not have been used to evaluate the accuracy, uniformity, and vertical equity of their assessments.

12 https://www.phila.gov/departments/office-of-property-assessment/resources/

13 See, for example, the 2022 IAAO report (https://www.phila.gov/media/20220513154056/Philadelphia-Practices-and-Procedures-IAAO-Report.pdf) and the evaluation of 2025 assessments completed by Kevin Keene (https://www.phila.gov/media/20240920162059/opa-tax-year-2025-external-report-residential-ratio-study.pdf).

14 See: https://phlcouncil.com/wp-content/uploads/2026/04/Property-Assessment-Proposed-FY27-Budget-Testimony-1.pdf

15 IAAO describes itself as "... a nonprofit, educational, and research association. It is a professional membership organization of government assessment officials and others interested in the administration of the property tax."

16 IAAO: Standard on Mass Appraisal of Real Property (2017), page 1.

17 OPA explains in its presentation: "In order to build accurate and reliable models, it is important to have a Sales file representative of the Master Population. We uses [sic] several years of sales so as to be representative. Because the market fluctuates and exhibits change in sales price that is attributable to time, it is necessary to time adjust sales prices. All Sale prices are time adjusted to one point in time as determined by the scope of the project." See also: IAAO. Standard on Verification and Adjustment of Sales. April 2020. pp. 15-16.

18 OPA states in its methodology:
OPA is only allowed to consider the attributes of each property when estimating value. OPA is not permitted to and does not consider attributes such as:
- Income, either of the owner/occupant or the surrounding neighborhood. (In property assessment there, is no such thing as a 'poor' or 'low income' or 'wealthy' neighborhood – only low-priced or high-priced properties)
- Ethnicity of the owner/occupant or the surrounding neighborhood
- Crime statistics
- Length of ownership
- Identity of the owner/occupant
- Any other demographic data

19 IAAO resources: "Standard on Verification and Adjustment of Sales" (2020) and "Standard on Data Quality" (2021).

20 https://www.phila.gov/documents/assessment-methodologies/

21 For example, a property that sells can be looked up in online applications of third-party entities such as Redfin or Trulia. Those applications typically have an extensive description as well as photographs (internal and external) that better express contemporary condition. They do not, however, have the same level of contemporary property detail and photography on homes that are not listed for sale or have not recently sold.

22 While the PRD is an industry standard, an alternative measure of vertical equity is a coefficient known as "Price-related Bias" or PRB. IAAO states that it is "less sensitive to extreme prices or ratios." https://www.iaao.org/wp-content/uploads/Standard_on_Ratio_Studies.pdf, P. 19.

23 IAAO: "Standard on Ratio Studies" (2013)

24 IAAO. Standard on Ratio Studies. April 2013. p. 11.

25 IAAO. Standard on Automated Valuation Models (AVMs). July 2018. PP. 8-9.

26 IAAO is not silent on this issue of representation. It articulates a process called the analysis of "sold and unsold" properties. That analysis sets forth an approach to test the statistical significance of assessed values between homes that sold (and were part of the mass valuation modeling) and the universe of homes to which those values were attached. See IAAO. April 2021. Standard on Data Quality. Appendix F.

27 We note that it is a reasonably well-established matter that experts who create housing price indices do so using data on homes that sell, and they recognize that homes that sell are not representative of all homes. Specifically, "... house value indices derived from the conventional hedonic method are subject to bias if the sample of houses is not a random sample of the stock. Correction requires joint estimation of the probability that a house will sell and the sale price." See, for example:
- Gatzlaff, Dean H. and Donald R. Haurin. 1998. "Sample Selection and Biases In Local House Value Indices." Journal of Urban Economics, 43, pp. 199-222.
- Jud, Donald G. and Terry G. Seaks. 1994. "Sample Selection Bias in Estimating Housing Sales Prices." The Journal of Real Estate Research, 9, 3 (Summer), pp. 289-298.
- Haurin, Donald R. and Patric H. Hendershott. 1991. "House Price Indexes: Issues and Results." American Real Estate and Urban Economics Association Journal, 19, 3, pp. 259-269.

28 The Pennsylvania Human Relations Commission enforces the Pennsylvania Human Relations Act (see: https://www.pa.gov/services/phrc/file-a-housing---commercial-property-discrimination-complaint). Although not deemed substantially equivalent to the federal Fair Housing Act, the Philadelphia Commission on Human Relations enforces the City's Fair Practices Ordinance.

29 42 U.S.C. § 3601 et seq.

30 See: https://www.hud.gov/stat/fheo/partners-agencies#PA

31 See: https://www.phila.gov/services/crime-law-justice/report-a-crime-or-concern/discrimination-and-unfair-practices/file-a-complaint-about-housing-or-property-discrimination/#protected-categories

32 The Appraisal Foundation describes USPAP as: "The Uniform Standards of Professional Appraisal Practice (USPAP®) is the generally recognized ethical and performance standards for the appraisal profession in the United States." https://appraisalfoundation.org/pages/uspap

33 We note that in the context of Title VI of the Civil Rights Act of 1974 that the US Department of Justice made clear that it "rejects the theory" of disparate impact discrimination. And in January 2026, HUD proposed to rescind its regulation and leave to the courts, decisions on disparate impact. (https://www.federalregister.gov/

documents/2026/01/14/2026-00590/huds-implementation-of-the-fair-housing-acts-disparate-impact-standard) That position does not change the multiple court precedents, including that of the Supreme Court of the United States in the 2015 case titled Texas Department of Community Affairs v. The Inclusive Communities Project, Inc., which establish the validity of claims under the Fair Housing Act using a disparate impact theory. See Texas Dep't of Hous. & Cmty. Affs. v. Inclusive Communities, 576 U.S. 519, 534 (2015): https://www.oyez.org/cases/2014/13-1371

34 OPA states that consistent with recent revisions to PA law, OPA staff will be required in the future to receive fair housing education as part of their continuing professional education requirements.

35 Personal communication between officials in the MD Department of Assessment and Taxation (MDAT) confirmed that they have access to and use MLS data in their assessment process.

36 We note, for the record, that a Task Force member endeavored to open a conversation with Bright MLS in Philadelphia related to OPA access. Bright MLS declined to engage.

37 The UAD was last released in late 2024. It is unclear whether the current federal Administration will update these data, and under what circumstances these data will be made available. Under the recently enacted 21st Century ROAD to Housing Act Section 704 requires the Government Accountability Office to study the feasibility of creating a public appraisal database.

38 The Assessment Ratio, COD and PRD are standard measures of assessment quality, and they are the ones reported in OPA ratio studies. They are also the measures that the OPA represents publicly as the critical measures. That said, the PRB is the acronym for price-related bias and was introduced to the Task Force as an additional and perhaps better measure of vertical equity than the PRD. It is reported to be less susceptible to the influence of extreme cases (i.e., statistical outliers). We are aware that the IAAO has also reported out in a 2025 Exposure Draft of its Standard on Ratio Studies another potential measure of vertical equity called the VEI (Vertical Equity Indicator) useful in ratio studies. OPA should use any and all indices that produce the most accurate, statistically unbiased, and diagnostically useful measure(s) of vertical equity that the industry allows. https://www.iaao.org/wp-content/uploads/StandardonRatioStudies_Exposure-Mar2026.pdf

39 We use the term "largely" here because OPA asserts that it reviews various public (e.g., City code violations and building permits) and private (e.g., third-party property listing sites) data sources related to homes that have sold. This, they assert, allows them to adjust condition codes. But OPA acknowledged that there is less known about homes that have not sold for a significant period of time. Thus, the condition codes, which are fundamentally based on external condition, are at best unevenly accurate for that vast majority of homes that do not (or have not recently) sold. There was notable disagreement among Task Force members that measures of external condition served as a reliable and fulsome indicator of internal condition.

40 In OPA's Mass Appraisal Valuation Methodology Overview for 2025, it states that it measures "Interior condition (or ***presumed interior condition***)" [emphasis added] (https://www.phila.gov/media/20240920162052/opa-tax-year-2025-mass-appraisal-valuation-methodology.pdf, p. 11). Because OPA typically knows more about the interior condition of homes that have recently sold (or are listed for sale) because online listings show pictures and provide more data than OPA typically has on a property, the presumption of interior condition based on exterior condition attaches to the majority of all homes to which OPA assessment models are applied.

41 OPA's posture is that these properties can be used in modeling, and further that the condition code used for these properties statistically addresses any adverse consequences of using them in modeling. Several Task Force members asserted, contrarily, that the law specifically prohibits it, and further that statistical controls do not fully address the impact of their presence in a group of properties being modeled. OPA disagrees with this recommendation.

42 Co-chair Goldstein conferred with multiple statistical experts who agreed that a statistical control for "new" condition is not the same as excluding new properties from the sample upon which valuation equations are solved.

43 Consistent with the 2024 changes to the Universal Standards of Professional Appraisal Practice (USPAP), Advisory Opinions 39 and 40–adopted by IAAO.

44 The concept of a less discriminatory alternative (or LDA) arises in the context of a disparate impact claim of discrimination. Take, for example, a lending institution that uses several factors to make the decision to approve or deny a mortgage applicant. The lender most certainly has a business interest in making loans to people who will pay them back and not to those who will not. Making those distinctions efficiently is what is known as a legitimate business objective. If however that lender had remarkably different likelihoods of Black and White applicants being denied, the lender is expected to examine what in their models is causing the disparity and whether there is some other factor that can do a good job distinguishing between people who will pay back and people who will not, but reduce the Black-White denial differential. In the context of property assessment, the LDA is understood to be some other variable in a statistical model (or some other process leading into modeling, or the model itself) that provides assessments of at least equal quality to that which now exists but for which there is less observable racial/ethnic disparity.

45 Consistent with new state requirements. valuation-bias-and-fair-housing-laws-and-regulations-announcement.pdf

46 Phila. Code § 2-305(2)(b)(c).

47 72 P.S. § 5341.14(a).

48 Standard on Assessment appeal (2016), pg. 1 (IAAO, 2016); see also Standard on Mass Appraisal of Real Property (2025), Chapter 5.5, Value Defense, pg. 19 (IAAO, rev. 2025).

49 BRT is introduced here because the Task Force recognized that BRT makes valuation decisions but the facts, circumstances, and rationale for those decisions does not always get reflected in OPA's property-level data.

50 Beyond members of the Task Force, co-chair Goldstein consulted with multiple industry and related experts on specific issues that arose during the Task Force meetings. Those experts are identified in *Appendix 4*.

51 Reinvestment Fund analyzed data from the Census' American Community Survey (2019-2023 5-year microdata sample), identifying how the demographics and housing values of households that recently moved into (or within) Philadelphia were different than those that did not move (i.e., ACS respondents who reported "same house" in the mobility question). Movers, in this analysis, are considered analogous–although certainly not identical–to the group of properties that OPA uses to create its statistical models. "Same house"–or non-movers–are analogous although certainly not identical to the universe of homes for which OPA applies its assessment model.

52 Why examine income? One theory discussed by the Task Force (and between co-chair Goldstein and multiple outside experts) for the observed disparities in assessment quality by the racial/ethnic and income composition of the areas within which homes are assessed was that householders that sell, fix up their properties as part of a strategy to get the highest possible sale price. This pre-sale work is more easily accomplished if the household has higher income than if it has lower income. And much of that pre-sale work (e.g., a new kitchen or upgraded bathrooms) will not likely be reflected in OPA's property codes, which more generally represent the external condition of the property. The income disparity then could be driving the vertical equity issues observed by neighborhood race/ethnicity and income.

53 OPA strenuously objected to the analysis of self-reported home values in the ACS largely on the basis that people generally do not know their home values, and they especially do not know if they have not moved recently. They aver that, at least for the group of ACS respondents that moved, having sold their home recently, those homeowners will generally have a better and more recent sense of what their home is worth. Thus, they conclude, the analysis is not valid. While OPA's perspective on homeowner knowledge of home value may be true (or partly true), every year homeowners across the City of Philadelphia get notices from OPA as to OPA's opinion of their home's value. Accordingly, homeowners generally do not have more than a one year old professional opinion of value which, according to assessment ratios reported in OPA ratio studies, stands at 99.2% of a home's value. (See: https://www.phila.gov/media/20240920162058/opa-tax-year-2025-residential-ratio-study.pdf)

