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# 2018 Price Index of Operating Costs

April 12, 2018

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# 2018 Price Index Of Operating Costs

## What's New

- ◆ The Price Index of Operating Costs (PIOC) for Rent Stabilized Apartment Buildings increased 4.5% this year.
- ◆ All costs in natural-gas heated buildings increased 4.4% and all costs in fuel-oil heated buildings increased 5.1%.
- ◆ The “Core” PIOC, which excludes the changes in fuel oil prices, natural gas, and steam costs, is useful for analyzing inflationary trends. The Core PIOC rose by 3.7% this year.
- ◆ Fuel costs increased 16.4%, the highest increase of any PIOC component.
- ◆ Real estate taxes increased 6.3%, primarily due to a rise in assessments for Class Two properties.
- ◆ The Utilities component increased by 0.5%, primarily due to an increase in electricity costs.
- ◆ The Price Index of Operating Costs for Rent Stabilized Apartment Buildings is projected to increase 3.4% next year.

## Introduction

The *Price Index of Operating Costs* (PIOC) measures changes in the cost of purchasing a specified set of goods and services (market basket) used in the operation and maintenance of rent stabilized apartment buildings in New York City. The PIOC consists of seven cost components: Taxes, Labor Costs, Fuel, Utilities, Maintenance, Administrative Costs and Insurance Costs. The specific goods and services (items) within each component were originally selected based on a study of 1969 expenditure patterns by owners of rent stabilized apartment buildings. The specific items included in each component have changed over time in order to reflect changes in owner expenditure patterns. The methodology for determining the costs for each component is described in the final section of this report. The measured price changes (price relatives) in each index component are presented in Appendix 2. The relative importance of each index component as a percentage of total operating and maintenance expenditures is

*The Price Index of Operating Costs for Rent Stabilized Apartment Buildings rose ...*



shown by its “expenditure weight” (see Appendix 2). The 2017-2018 price changes and expenditure weights are then combined to provide the overall change in the PIOC for 2017-2018.<sup>1</sup>

Changes in the overall PIOC result from changes in the prices of individual goods and services, each weighted by its relative importance as a percentage of total operating and maintenance (O&M) expenditures. Because the market basket is fixed in the sense that the quantities of goods and services of each kind remain constant, the relative importance of the various goods and services will change when their prices increase either more quickly or more slowly than average. Thus, the relative importance, or weight, attached to each good or service changes from year to year to reflect the different rates of price change among the various index items.

## Overview

This year, the PIOC for all rent stabilized apartment buildings increased by 4.5%. Increases occurred in all PIOC components. The largest proportional increase was seen in Fuel (16.4%), followed by Taxes (6.3%). More moderate increases occurred in Maintenance (3.4%), Insurance Costs (3.3%), Labor Costs (3.2%), Administrative Costs (1.6%), and Utilities (0.5%). The growth in the Consumer Price Index (CPI), which measures inflation in a wide range of consumer goods and services, during this same time period was lower than the

## Apartments

### Change In Costs for Rent Stabilized Apartment Buildings, March 2017 to March 2018

|                      |             |
|----------------------|-------------|
| Taxes                | 6.3%        |
| Labor Costs          | 3.2%        |
| Fuel                 | 16.4%       |
| Utilities            | 0.5%        |
| Maintenance          | 3.4%        |
| Administrative Costs | 1.6%        |
| Insurance Costs      | 3.3%        |
| <b>All Costs</b>     | <b>4.5%</b> |

## Terms and Definitions

**Price Index** - the measure of price change in a market basket of goods and services.

**Component** - categories of goods and services, such as Labor Costs or Taxes, that comprise the market basket of a price index.

**Item** - representative individual goods and services within a component, such as Bucket, Plumbing, Faucet or Roof Repair.

**Price Relative** - the change between current and prior year's prices.

**Expenditure Weight** - the relative importance of the change in costs of different goods and services.

**Specification** - defined pricing units with specific terms of sale, such as cash, volume or trade discounts.

PIOC, rising 1.8%.<sup>2</sup> See the table on this page and Appendix 2 for changes in costs and prices for all rent stabilized apartment buildings from 2017-2018.

The "Core" PIOC, which excludes changes in fuel oil, natural gas, and steam costs used for heating buildings, is useful for analyzing long-term inflationary trends. The Core PIOC rose by 3.7% this year and was lower than the overall PIOC due to the exclusion of costs in the Fuel component, which rose 16.4%.

## Price Index Components

### Taxes



The Taxes component of the PIOC is based entirely on real estate taxes and accounts for nearly 30% of the overall price index. The change in tax cost is estimated by comparing aggregate taxes levied on rent stabilized apartment buildings in Fiscal Year (FY) 2017 and FY 2018. Aggregate real estate taxes rose this year by 6.3%. The growth in taxes was primarily due to an 9.0% rise in assessments. The rise in assessments was offset by a rise in the total value of exemptions, which had the effect of lowering the total rise in taxes by 1.0%. In addition, a decline in the tax rate for Class 2 buildings of 1.3% also helped to offset the rise in assessments. Change in tax abatements had little impact on the change in Taxes for 2018.

**Tax Levy** — The total tax levy for all properties in the City (commercial and residential) increased by 7.5% from FY 2017 to FY 2018. The large majority of rent stabilized apartments are contained in multi-family buildings that are in Tax Class Two. The total Class Two property levy rose at a faster pace than that of the City as a whole, at a rate of 8.0%. The distribution of the levy among property classes tends to shift from year to year. From FY 2017 to FY 2018, the levy share for Class Two properties increased by 0.2 percentage points, from 37.26% to 37.42% of the total tax burden. This is significantly higher than the 26.3% share that was established at the inception of the four-class tax system in 1983.

**Tax Rate** — The average annual FY 2017 Class Two tax rate of 12.892 decreased by 1.3%, resulting in a new annualized rate of 12.719 for FY 2018. This is the fourth time in the past six years that the Class Two tax rate decreased. For a historical perspective on changes in the tax rate, abatements, and exemptions, see the green bars on the graph on the next page.

**Assessments** — Assessed valuations of properties containing rent stabilized units rose by 9.0% Citywide in FY 2018. Assessments rose in

all five boroughs, with Brooklyn witnessing the highest growth at 11.9%, followed by the Bronx at 9.4%, Queens at 9.1%, Staten Island at 8.1% and Manhattan at 7.8%. Buildings in Manhattan drive much of the change in assessed value Citywide. This was true in FY 2018, with 62% of the total assessed value attributed to this borough. For a historical perspective on changes in tax assessments, see the orange bars on the graph below.

**Abatements and Exemptions** — This year, the number of rent stabilized buildings receiving tax abatements increased by 0.14% from the previous fiscal year. In addition, the average benefit value of the typical tax abatement increased by 16.3% from FY 2017 to FY 2018. The net impact of the increase in the number of buildings receiving abatements and the increase in the average abatement value was a negligible decrease in the overall change in Taxes of just 0.2%.

In FY 2018, 0.4% fewer rent stabilized buildings benefited from tax exemptions. However, the value of

the average tax exemption increased by 6.1%. This combination of an increase in the average value of tax exemptions and the decrease in the number of buildings receiving exemptions resulted in reducing the increase in the overall change in Taxes by 1.0%. (See Appendices 5 and 6.)

## Labor Costs

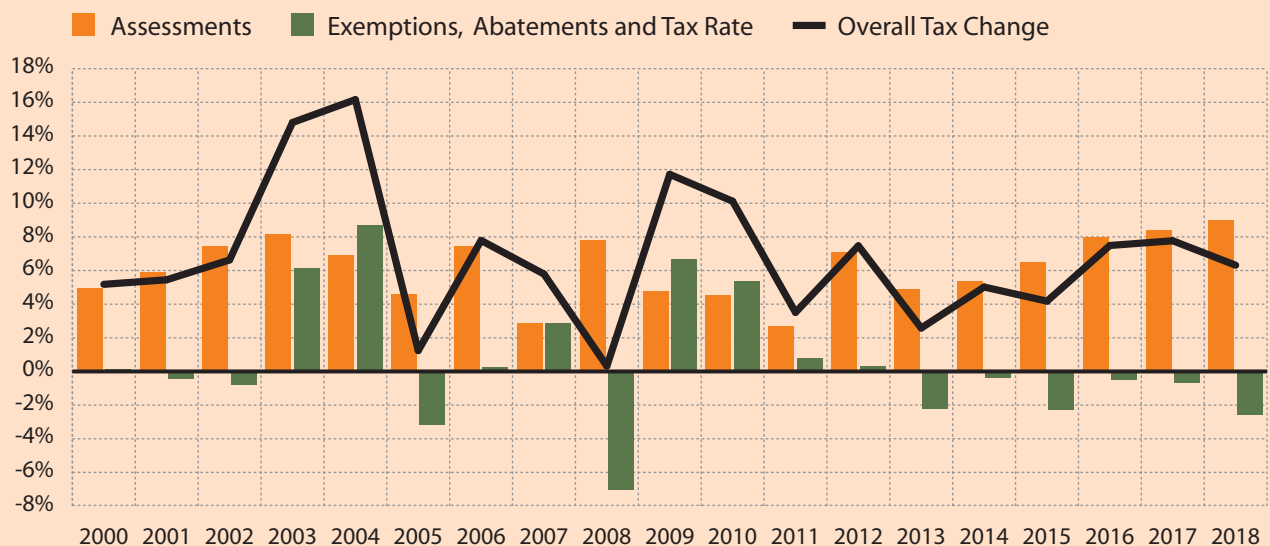


The Price Index measure of Labor Costs includes union and non-union salaries and benefits, in addition to Social Security and unemployment insurance. The cost of unionized labor makes up two-thirds of the Labor Costs component. The entire Labor Costs component comprises 16.7% of the overall Price Index.

Labor Costs rose 3.2%, 0.9 percentage points less than last year's rise of 4.1%. The rise in Labor Costs was due to increases in union and non-union wages, as well as rising costs in healthcare and pension

### Percent Change in Taxes due to Assessments and Exemptions/Abatements/Tax Rate 2000-2018

#### Assessments for Rent Stabilized Buildings Continue to Rise in 2018



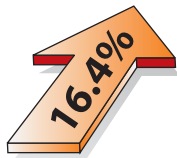
Source: New York City Department of Finance

contributions. The decline in unemployment insurance of 12.8% had minimal impact, since it accounts for less than one-half of one percent of this component's weight.

Wages comprise three-quarters of the Labor Costs component. Non-union pay increased by 5.1%, a half percentage point lower than the increase seen in the 2017 PIOC (5.6%). Unionized wages also rose, rising by 2.7%, a larger increase than the 2.4% witnessed last year.

Health and welfare benefits, which comprises more than 21% of the Labor Costs component, increased 1.7%. See Appendix 2 for all Labor Costs item weights and price relatives.

## Fuel



The Fuel component comprises 6.4% of this year's Price Index. The change in cost measured in this component considers both the change in weather and the change in prices for heating multifamily buildings by fuel oil, natural gas, and steam.<sup>3</sup>

This year the Fuel component increased 16.4%, following a 24.6% rise in the prior year. Natural gas costs, which account for 49% of the overall costs in this component, increased 15.4%. The cost for heating buildings by fuel oil makes up 43% of this component, and increased 19.9%. Steam costs rose 4.5%, but these costs account for only 8% of the Fuel component.<sup>4</sup>

Along with measuring price, the PIOC also takes into account the effect of weather on the demand for fuel, especially during the heating season when the large majority of fuel is burned. Since the weather this year was colder than last year, the increase in fuel cost was greater than it would have been if prices alone were considered. For instance, the increase in fuel oil costs was greater than the rise in fuel oil prices, with prices increasing 16.3%, but costs rising 19.9%. In years where the weather does not vary much from the prior year, the change in the cost of fuel oil is roughly equal to that of the change in price, such as in 2015. See the table on this page for a comparison of the past ten years of fuel oil cost relatives to fuel oil prices. See Appendix 2 for all Fuel item weights and price relatives.

## Fuel Oil Cost Relatives vs. Change in Fuel Prices, 2009-2018

| <i>PIOC Year</i> | <i>Fuel Oil Cost Relative*</i> | <i>Change in Fuel Oil Price**</i> |
|------------------|--------------------------------|-----------------------------------|
| 2018             | 19.9%                          | 16.3%                             |
| 2017             | 22.1%                          | 7.3%                              |
| 2016             | -45.5%                         | -30.9%                            |
| 2015             | -23.4%                         | -22.5%                            |
| 2014             | 7.8%                           | 0.3%                              |
| 2013             | 20.0%                          | 2.9%                              |
| 2012             | 1.6%                           | 20.8%                             |
| 2011             | 23.1%                          | 20.3%                             |
| 2010             | 0.5%                           | 6.7%                              |
| 2009             | -10.1%                         | -16.9%                            |

\* The Fuel Oil Cost Relative factors in the effect of weather on total fuel oil consumption. In months that are colder than the same month in the prior year, the weather factor will put upward pressure on the fuel oil relative. In months that are warmer than the same month in the prior year, downward pressure is placed on the Fuel Oil Cost Relative.

\*\* Weighted change in #2, #4 and #6 fuel oil prices. From 2016 forward, weighted change in #2 and #4 fuel oil prices only.

Source: NYC RGB Price Indices of Operating Costs, 2009-2018

## Utilities



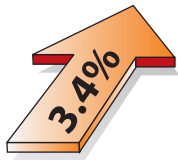
The Utilities component consists of non-heating natural gas and electricity costs, as well as water and sewer charges, and it comprises 10.3% of this year's Price Index. In the case of the gas and electricity items, changes in costs are measured using the PIOC specifications (e.g., the quantity of electricity and gas being purchased) and the changes in rate schedules. Water and sewer costs are based on rate adjustments set by the NYC Water Board and they account for 73% of the Utilities component.

This year Utilities increased 0.5%, compared to a 0.8% decrease in the previous year. The increase in this component was driven by increases in the cost of electricity and natural gas. Electricity costs, which account for just over 26% of this component, increased by 1.5%, while gas costs, which account for less than one percent of the Utilities component, rose 10.6%. But water and sewer charges, which account for more than 73% of this component, were flat for the second



consecutive year. See Appendix 2 for all Utilities item weights and price relatives.

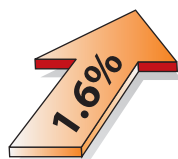
## Maintenance



The Maintenance component accounts for 17.9% of this year's Price Index. The Maintenance component rose 3.4%, more than last year's rise of 2.5%. Of the 29 expense items contained in this component, just three items account for 43% of its expenditure weight: Repainting, Plumbing (faucet), and Plumbing (stoppage). This year, painters' rates rose 6.3%, more than the 2.3% recorded last year. Combined plumbing rates increased at a slower pace, rising 2.7%, less than last year's rise of 5.0%.

Other price increases of note were boiler repairs (3.0%), floor maintenance (3.2%), and roof repair (3.8%), which represent a total of six expense items and account for nearly 19% of this component. There were also rises in the two items newly added this year, Extermination and Electrician Services, which rose by 1.5% and 0.5%, respectively. These new items account for almost 12% of this component. For more information regarding new additions and subtractions of items in this component, see Maintenance in the Methodology section on page 13. See Appendix 2 for all Maintenance item weights and price relatives.

## Administrative Costs



Fees paid to management companies, accountants, and attorneys make up 87% of this component. This year, Administrative Costs rose 1.6%, 1.9 percentage points less than last year's rise of 3.5%. Administrative Costs comprise 13.6% of the PIOC.

A large portion of the growth in the Administrative Costs component can be attributed to a rise in management company fees (0.8%) that comprise over half of this component. Management fees are often tied to apartment rental income and are affected by changes in rents and vacancies. This year's growth is less than last year's (4.1%), indicating that management companies fees and/or rents increased at a slower pace

than last year. This lesser rise in management fees may also indicate that vacancies and/or collection losses in managed buildings increased as compared to the previous year.

Accounting fees increased in this year's PIOC by 2.6%, less than last year's rise of 3.5%. Attorney fees rose 4.5%, 0.5 percentage points more than last year's growth of 4.0%.

Communications, which accounts for about 6% of the Administrative Costs component, decreased 4.5%. See Appendix 2 for all Administrative Costs item weights and price relatives.

## Insurance Costs



For the seventh consecutive year there was an increase in the Insurance Costs component, rising 3.3%, compared to last year's increase of 8.0%. Insurance Costs account for 5.1% of the PIOC.

Changes in insurance costs for owners varied by the amount of the policy. Policies that cost more than \$6,282.97, which represent half of all verified insurance quotes, saw an increase in cost of 3.1% upon renewal. Buildings with policies that cost \$6,282.97 or less saw an increase of 4.7%. (See Appendix 2.)

## PIOC by Building Type

The 1983 Expenditure Study provided a basis for calculating separate sets of expenditure weights for different types of buildings that contain rent stabilized units. In addition to the price index for all rent stabilized apartments, the PIOC includes separate indices for buildings constructed before 1947 (pre-1947) and for buildings constructed in 1947 or later (post-1946), as well as for gas-heated and oil-heated buildings. (See Appendices 2 and 3.)

Typically, buildings constructed before 1947 incur a lower percentage of operating and maintenance costs for property taxes and labor costs than post-1946 buildings. However, fuel costs for heating pre-1947 buildings represent a significantly higher percentage of total operating and maintenance costs. As a result, total costs in the Pre-1947 Index rose by 4.9%, while costs in the Post-1946 Index rose by a lesser amount, 4.0%.

## Hotels

### *Change In Costs for Rent Stabilized Hotel Buildings, March 2017 to March 2018*

|                      |             |
|----------------------|-------------|
| Taxes                | 1.3%        |
| Labor Costs          | 4.0%        |
| Fuel                 | 15.1%       |
| Utilities            | 1.2%        |
| Maintenance          | 3.8%        |
| Administrative Costs | 0.3%        |
| Insurance Costs      | 3.3%        |
| <b>All Costs</b>     | <b>3.9%</b> |

## Lofts

### *Change In Costs for Rent Stabilized Loft Buildings, March 2017 to March 2018*

|                   |             |
|-------------------|-------------|
| Taxes             | 6.3%        |
| Labor Costs       | 3.8%        |
| Fuel              | 19.6%       |
| Utilities         | 0.2%        |
| Maintenance       | 3.6%        |
| Admin Costs-Legal | 4.5%        |
| Admin Costs-Other | 1.0%        |
| Insurance Costs   | 3.3%        |
| <b>All Costs</b>  | <b>5.2%</b> |

Indices were also calculated for different types of heating systems. These heating system indices differ from the price index for all apartments because the expenditure weight for the Fuel component differs from index to index. Because the Fuel component carries more weight in oil-heated buildings versus those heated by gas, the Oil-Heated Index (5.1%) rose more than the Gas-Heated Index (4.4%).

## Rent Stabilized Hotels

The Hotel Price Index includes separate indices for each of three categories of rent stabilized hotels (due to their dissimilar operating cost profiles) and a general index for all rent stabilized Hotels. The three categories of hotels are: 1) “traditional” hotels — a multiple dwelling that has amenities such as a front desk, maid or linen services; 2) Rooming Houses — a multiple dwelling other than a hotel with thirty or fewer sleeping rooms; and 3) single room occupancy hotels (SROs) — a multiple dwelling in which one or two persons reside separately and independently of other occupants in a single room.

The Price Index for all rent stabilized Hotels increased 3.9% this year, a 2.4 percentage point difference from the 6.3% rise in 2017. It is important to note that the Hotel PIOC was not reweighted using the most current Real Property Income and Expense (RPIE) data (see Endnote 1). However, in order to maintain symmetry between indices, the expense items were aligned to the seven components now used in the Apartment PIOC. The realignment of the hotel expenditure items had no impact on the change in the overall PIOC, which would have remained 3.9% if the old alignments were used.

This year there were increases in all seven of the PIOC Hotel components. The Fuel component witnessed the highest increase, rising 15.1%. The Fuel component accounts for nearly 14% of the entire Hotel Index. The remaining six components witnessed more moderate cost increases, with Labor Costs rising 4.0%, Maintenance 3.8%, Insurance Costs 3.3%, Taxes 1.3%, Utilities 1.2% and Administrative Costs 0.3%. See the table on this page for changes in costs and prices for all rent stabilized hotels from 2017-2018.

Among the different categories of Hotels, the index for “traditional” hotels increased 1.9%, Rooming Houses by 6.0%, and SROs by 5.5%. (See Appendices 4 and 7.)

## Rent Stabilized Lofts

Similar to the Hotel Index, the Loft PIOC expenditure component weights were not reweighted using the most current RPIE data (see Endnote 1). However, the Loft expenditure items were placed into the seven components used in the Apartment PIOC, except for the Attorney Fees expense item, which has traditionally been its own, separate, expense



component. Therefore, the Loft Index has eight components. Because these items were not reweighted, just moved, the overall change in the Loft PIOC can be compared historically to past indices.

The increase in the Loft Index this year was 5.2%, 1.7 percentage points lower than the 6.9% increase in 2017. Increases in costs were seen in all eight components that make up this index. Fuel Costs witnessed the highest rise, increasing 19.6%, followed by increases in Taxes of 6.3%. More moderate increases were seen in Administrative Costs-Legal (4.5%), Labor Costs (3.8%), Maintenance (3.6%), Insurance Costs (3.3%) Administrative Costs-Other (1.0%) and Utilities (0.2%). See the table on the previous page and Appendix 8 for changes in costs and prices for all rent stabilized lofts from 2017-2018.

### **The Core PIOC**

The Core PIOC, which measures long-term trends by factoring out shifts in fuel costs for heating rent stabilized buildings in NYC, rose 3.7% in 2018. The rise in the 2018 Core PIOC was 0.8 percentage points lower than the both this year's Apartment Index (4.5%), and last year's Core Index (4.5%). This year's Core PIOC rose at a slower pace than the overall PIOC because fuel costs, which were not used to calculate the Core, increased 16.4%.

### **PIOC Projections for 2019**

Section 26-510 of the Rent Stabilization Law requires the Board to consider prevailing and projected operating and maintenance costs for buildings containing rent stabilized apartments. Projections for components of the PIOC are calculated to provide the RGB with an estimate of how much costs are expected to rise in the year following the current Price Index.

Projecting changes in the PIOC has become more challenging in recent years. Energy prices — which represent roughly one-tenth of the market basket of operating costs measured in the index — have become increasingly volatile. Unpredictable geo-political events, recession and changing weather patterns are some of the forces behind large changes in fuel costs that have in turn limited the accuracy of the PIOC

| <b>2019 Projections</b>  |             |
|--|-------------|
| <i>Projected Change In Costs for Rent Stabilized Apartment Buildings, March 2018 to March 2019</i> |             |
| Taxes  | 5.7%        |
| Labor Costs  | 3.2%        |
| Fuel   | 1.1%        |
| Utilities  | 1.7%        |
| Maintenance  | 1.8%        |
| Administrative Costs   | 2.0%        |
| Insurance Costs  | 5.3%        |
| <b>All Projected Costs</b>   | <b>3.4%</b> |

projections in recent studies. The tax component, which accounts for nearly 30% of the entire Price Index, has also become harder to project due to changes in tax policy, such as tax rate adjustments and changes to the City's tentative assessment roll, after the period covered in this Price Index.

This year, operating costs in rent stabilized apartment buildings increased by 4.5%, versus last year's projected PIOC increase of 4.4%, a difference of just 0.1 percentage points. The component with the largest deviation between actual and projected changes in costs was Fuel. Fuel cost was projected to rise 5.8%, but actually rose 16.4% in 2018. Other notable differences were found in the Insurance Costs and Utilities components. Insurance Costs, which were projected to increase by 7.8%, rose instead by 3.3%, a 4.5 percentage point difference. Utilities, which were projected to rise by 3.5%, rose instead by 0.5%, a difference of 3.0 percentage points. The remaining 2018 projected components of the PIOC were all within 1.8 percentage points of the actual measured changes.

Overall, the PIOC is expected to grow by 3.4% from 2018 to 2019. Costs are predicted to rise in each component, with the largest growth (5.7%) projected to be in Taxes, the component that carries the most weight in the Index. Other projected increases include Insurance Costs (5.3%), Labor Costs (3.2%), Administrative Costs (2.0%), Maintenance (1.8%),

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Utilities (1.7%), and Fuel (1.1%). The table on the previous page shows projected changes in PIOC components for 2019. The core PIOC is projected to rise 3.5%, 0.1 percentage points more than the overall projected Apartment PIOC.

## **Commensurate Rent Adjustments**

Throughout its history, the Rent Guidelines Board has used a formula, known as the commensurate rent adjustment, to help determine annual rent guidelines for rent stabilized apartments. In essence, the “commensurate” combines various data concerning operating costs, revenues, and inflation into a single measure to determine how much rents would have to change for net operating income (NOI) in rent stabilized buildings to remain constant. The different types of “commensurate” adjustments described below are primarily meant to provide a foundation for discussion concerning prospective guidelines.

In its simplest form, the commensurate rent adjustment is the amount of rent change needed to maintain owners’ current dollar NOI at a constant level. In other words, the commensurate provides a set of one- and two-year renewal rent adjustments, or guidelines, that will compensate owners for the change in prices measured by the PIOC and keep net operating income constant.

The first commensurate method is called the “Net Revenue” approach. While this formula takes into consideration the term of leases actually signed by tenants, it does not adjust owners’ NOI for inflation. The “Net Revenue” formula is presented in two ways: First, by adjusting for the mix of lease terms; and second, by adding an assumption for rent stabilized apartment turnover and the subsequent impact of revenue from vacancy increases. Under the “Net Revenue” formula, a guideline that would preserve NOI in the face of this year’s 4.5% increase in the PIOC is 3.5% for a one-year lease and 6.25% for a two-year lease. Using this formula, and adding assumptions for the impact of vacancy increases on revenues when apartments experience turnover, results in guidelines of 1.75% for one-year leases and 3.0% for two-year leases.

The second commensurate method considers the mix of lease terms while adjusting NOI upward to reflect general inflation, keeping both operating and maintenance (O&M) costs and NOI constant. This is commonly called the “CPI-Adjusted NOI” formula. A guideline that would preserve NOI in the face of the 1.8% increase in the Consumer Price Index (see Endnote 3) and the 4.5% increase in the PIOC is 4.5% for a one-year lease and 7.25% for a two-year lease. Guidelines using this formula and adding the estimated impact of vacancy increases are 2.5% for one-year leases and 4.5% for two-year leases.<sup>5</sup>

The third commensurate method, the “traditional” commensurate adjustment, is the formula that has been in use since the inception of the Rent Guidelines Board and is the only method that relies on the PIOC projection. The “traditional” commensurate yields 2.9% for a one-year lease and 4.0% for a two-year lease. This reflects the increase in operating costs of 4.5% found in the 2018 PIOC and the projection of a 3.4% increase next year.

All of these commensurate methods have limitations. The “Net Revenue” formula does not attempt to adjust NOI based on changes in interest rates or the effect of inflation. The “CPI-Adjusted NOI” formula inflates the debt service portion of NOI, even though interest rates have been historically low over recent years. For both of these commensurate methods, including a consideration of the amount of income owners receive on vacancy assumes that turnover rates are constant across the City.

As a means of compensating for cost changes, the “traditional” commensurate rent adjustment has two major flaws. First, although the formula is designed to keep owners’ current dollar income constant, the formula does not consider the mix of one- and two-year lease renewals. Since only about two-thirds of leases are renewed in any given year, with a majority of leases being renewed having a one-year duration, the formula does not necessarily accurately estimate the amount of income needed to compensate owners for O&M cost changes.

A second flaw of the “traditional” commensurate formula is that it does not consider the erosion of owners’ income by inflation. By maintaining current dollar NOI at a constant level, adherence to the

formula may cause profitability to decline over time. However, such degradation is not an inevitable consequence of using the “traditional” commensurate formula.<sup>6</sup>

Finally, it is important to note that only the “traditional” commensurate formula uses the PIOC projection and that this projection is not used in conjunction with, or as part of, the “Net Revenue” and “CPI-Adjusted NOI” formulas. As stated previously, all three formulas attempt to compensate owners for the adjustment in their operating and maintenance costs measured each year in the PIOC. The “Net Revenue” and the “CPI-Adjusted NOI” formulas attempt to compensate owners for the adjustment in O&M costs by using only the known PIOC change in costs (4.5%). The traditional method differs from the other formulas in that it uses both the PIOC’s actual change in costs as well as the projected change in costs (3.4%).

Each of these formulae may be best thought of as a starting point for deliberations. The data presented in other Rent Guidelines Board annual research reports (e.g., the *Income and Affordability Study* and the *Income and Expense Study*) along with public testimony can be used in conjunction with these various commensurates to determine appropriate rent adjustments.

## Methodology

The Price Index measures changes in the cost of purchasing a specified set of goods and services, which must remain constant both in terms of quantity and quality from one year to the next. The need to exclude the effect of any alterations in the quality of services provided requires that very careful specifications of the goods and services priced must be developed and applied. The pricing specifications must permit the measurement of changes in prices paid for carefully defined pricing units with specific terms of sale, such as cash, volume or trade discounts.

The Methodology section of this report outlines the methods used to calculate each component of the 2018 PIOC, as well as the PIOC projection for 2019.

## Owner Survey

The Owner Survey gathers information on management fees, insurance, and non-union labor from building managers and owners. Survey questionnaires, accompanied by a letter describing the purpose of the PIOC, were mailed to the owners or managing agents of rent stabilized buildings. If the returned questionnaire was not complete, an interviewer contacted the owner/manager and gathered the missing information. Owners could complete the survey online or by mail. All of the price information given by the owner/managing agent was then confirmed by calling the relevant insurance and management companies and non-

| <b>Commensurates</b>  |                     |
|---|---------------------|
| <i>"Net Revenue"<br/>Commensurate Adjustment</i>                                |                     |
| <u>1-Year Lease</u>   | <u>2-Year Lease</u> |
| 3.5%  | 6.25%               |
| <i>"Net Revenue"<br/>Commensurate Adjustment<br/>with Vacancy Increase</i>      |                     |
| <u>1-Year Lease</u>   | <u>2-Year Lease</u> |
| 1.75%   | 3.0%                |
| <i>"CPI-Adjusted NOI"<br/>Commensurate Adjustment</i>                           |                     |
| <u>1-Year Lease</u>   | <u>2-Year Lease</u> |
| 4.5%  | 7.25%               |
| <i>"CPI-Adjusted NOI"<br/>Commensurate Adjustment<br/>with Vacancy Increase</i> |                     |
| <u>1-Year Lease</u>   | <u>2-Year Lease</u> |
| 2.5%  | 4.5%                |
| <i>"Traditional"<br/>Commensurate Adjustment</i>                                |                     |
| <u>1-Year Lease</u>   | <u>2-Year Lease</u> |
| 2.9%  | 4.0%                |

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union employees. The data gathered by the Owner Survey is the only owner-reported data used in the PIOC.

The sample frame for the Owner Survey included over 40,000 rent stabilized buildings registered with the New York State Division of Housing and Community Renewal (DHCR). In an effort to increase the number of surveys returned to the RGB, staff used a random sampling scheme to choose 7,500 addresses from this pool for the Owner Survey, up from 5,100 used in previous years. The number of buildings chosen in each borough was nearly proportional to the share of rent stabilized buildings in that borough. Three successive mailings were sent at timed intervals to the owner or managing agent of each property selected in the survey sample.

Roughly 8.8% of the questionnaires mailed out received a response, a higher rate than last year (7.1%). A total of 630 returned surveys contained usable information, up from 337 the prior year. As a result, RGB staff was able to validate 463 annual insurance premiums, 91 non-union labor wage rates and 41 reported management fees. The number of verified prices in 2017 and 2018 for the Owner Survey is shown in Appendix 1.

## **Taxes**

The 2018 tax price relative was calculated by providing a list of rent stabilized properties registered with DHCR to the NYC Department of Finance. Finance “matched” this list against its records to provide data on assessed value, tax exemptions, and tax abatements for almost 39,000 buildings in FY 2017 and FY 2018. This data was used to compute a tax bill for each rent stabilized building in each of these fiscal years. The change computed for the PIOC is simply the percentage difference in aggregate tax bills for these buildings from FY 2017 to FY 2018.

## **Labor Costs**

The Labor Costs component consists of the cost of unionized and non-unionized labor. Rate increases for unionized labor, including wage increases and health benefits, come directly from the contracts of unions

that represent workers in rent stabilized apartment buildings and hotels. The cost of Social Security and unemployment insurance is obtained from the NYS Department of Labor and the Internal Revenue Service (IRS). Wage increases for non-union labor are obtained from the Owner Survey (see methodology on the previous page).

## **Fuel**

The Fuel component consists of all types of fuel used for heating buildings, including oil, natural gas, electricity and steam.

In order to calculate the change in cost of fuel oil, prices set by fuel oil vendors for a gallon of heating oil are gathered on a monthly basis. A monthly survey makes it possible to keep in touch with fuel oil vendors and to gather the data on a consistent basis (i.e., on the same day of the month for each vendor). Vendors are called each month to minimize the likelihood of misreporting and also to reduce the reporting burden for the companies by eliminating the need to look up a year’s worth of prices. The number of fuel oil quotes gathered this year for #2 and #4 oil is similar to last year and is contained in Appendix 1.

To calculate changes in fuel oil costs, monthly price data is weighted using a degree-day formula to account for changes in the weather. The number of Heating Degree Days (see Endnote 3) is a measure of heating requirements.

The Fuel component includes not only the cost of fuel oil, but also the cost to heat buildings with natural gas, electricity and steam. For these items, RGB staff calculates a hypothetical monthly bill for utilities based in part on supply rates, fuel adjustments, delivery charges, taxes, and other surcharges and fees. Bills are calculated based on typical usage in a multi-family building in New York City, an amount that remains constant from year to year.

Because these items represent prices to heat buildings, monthly price data is adjusted to account for changes in weather. The price relatives for all items in the Fuel component were calculated by comparing the most recent 12-month period from April-March with the prior April-March period.



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## Utilities

The Utilities component consists of costs for non-heating electricity and natural gas, as well as water and sewer charges. RGB staff calculates a hypothetical monthly bill for electricity and natural gas based in part on supply rates, fuel adjustments, delivery charges, taxes, and other surcharges and fees. Bills are calculated based on typical usage in a multi-family building in New York City, an amount that remains constant from year to year. The price relatives for electricity and natural gas items in the Utilities component were calculated by comparing the most recent 12-month period from April-March with the prior April-March period.

Water and sewer price changes are based on annual rate adjustments set by the NYC Water Board.

## Maintenance

All prices for items in this component are obtained using a Vendor Survey. This Survey is used to gather price quotes for items such as painting and other services performed by contractors; hardware and cleaning items (e.g., buckets and pine disinfectant); and appliances that need periodic replacement (e.g., refrigerators and stoves). Each year the vendor database is updated by adding new vendors and by deleting those who no longer carry the products or perform the services outlined in the Vendor Survey item specifications. Vendor quotes were obtained over the telephone, and for non-service based items by telephone and from websites that carry items in the PIOC's market basket of goods. A total of 547 recorded price quotes were gathered. For a description of the items priced and the number of price quotations obtained for each item, refer to Appendix 1.

In 2017, as part of the Owner Survey sent to owners and management companies, respondents were asked for detailed information on their building maintenance costs. Respondents noted how much they spent in 2016 for contractor services, maintenance supplies and replacement items. Based on the results of this survey, individual items within the Maintenance component were reweighted. In addition, several items were removed from the component, while four

new items were added: Extermination Services, Electrician Services, Large Trash Bags, and Smoke Detectors. See Appendices 2, 7 and 8 for the weights for each of these items.<sup>7</sup>

## Administrative Costs

Management fees are obtained directly from building owners and managers, using the Owner Survey (see "Owner Survey" section on page 11). Other expense items, such as accountant and attorney fees, are obtained using the Vendor Survey (see "Maintenance" section, above). For communications costs, because there are so many variations in types of plans for internet and phone service, staff relied on the national Consumer Price Index to obtain price changes for these items. Monthly price changes were obtained from the U.S. Bureau of Labor Statistics website and were calculated by comparing the most recent 12-month period from March-February with the prior March-February period. For a list of all the expense items contained in the Administrative Costs component, see Appendix 1.

## Insurance Costs

The Owner Survey asks owners to provide information about their current and prior year's insurance policies. Temporary workers call the relevant insurance agents/brokers to verify this information. Only verified insurance costs are included in the PIOC.

## Price Index Projections

The PIOC Projections are estimated by using data from federal, state and local agencies; estimates from industry experts; and trend forecasting using three-year or long-term averages. The projections in this report are based on the time period from April 2018 to March 2019.

Taxes were projected by using data from the Department of Finance's tentative assessment roll for FY 2019 adjusted by estimates of how the final PIOC tax index has compared to the change in the tentative assessment roll over the last decade. These estimates produce a projected tax cost for owners of rental

properties. Labor costs are projected by calculating the average wage increase of the most recent labor contracts for apartment workers union Local 32-BJ and a ten-year geometric average of all other Labor Costs items. Fuel oil and natural gas costs for the Fuel component are projected by using data and information from the U.S. Energy Information Administration’s (EIA) current “Short-Term Energy Outlook” report, which includes assumptions about changes in usage according to a projected return to the average temperature over the last five years. Utility costs are projected by taking the average of the last four New York City Water Board water and sewer rate adjustments as well as EIA projections for residential gas and electricity costs.<sup>8</sup>

The other components — Administrative Costs, Insurance Costs, and Maintenance — are projected by using three-year geometric averages of the component price relatives.

## Acknowledgments

The Rent Guidelines Board would like to acknowledge the following individuals for their assistance in preparing the *Price Index of Operating Costs* this year: Dr. James F. Hudson for technical assistance, expense component reweighting, methodology, and report review; and Michael Taylor and Savana Hilaire for collecting owner and vendor data. □

## Endnotes

1. Prior to 2015, the relative importance of the various goods and services in the market basket was based on a 1983 study of expenditure patterns of owners of rent stabilized apartment buildings. In 2015, the Price Index of Operating Costs (PIOC) component expenditure weights for apartment buildings were changed to the expenditure patterns found in the Rent Guidelines Board’s annual Income and Expense (I&E) Study, which allows for the annual updating of expenditure patterns based on what owners report to the New York City Department of Finance as their actual costs on Real Property Income and Expense (RPIE) statements required by Local Law 63 (enacted in 1986). Note that only the Apartment PIOC is weighted with data from RPIE reports. The Hotel and Loft PIOC continue to use the 1983 study. For a full description of the methodological changes to the expenditure weights used in the current PIOC, please refer to the RGB 2015 *Price Index of Operating Costs* report at <http://www1.nyc.gov/site/rentguidelinesboard/research/rgb-research-reports.page>
2. The average CPI for All Urban Consumers, New York-Northeastern New Jersey for the year from March 2017 to February 2018 (269.2)

compared to the average for the year from March 2016 to February 2017 (264.5) rose by 1.8%. This is the latest available CPI data and is roughly analogous to the ‘PIOC year’.

3. The cost-weight relatives are calculated on an April to March time period. The April 2017 to March 2018 time period was 2.9% colder than the previous April to March period. “Normal” weather refers to the typical number of Heating Degree Days measured at Central Park, New York City, over the 30-year period from 1981-2010. A Heating Degree Day is defined as, for one day, the number of degrees that the average temperature for that day falls below 65 degrees Fahrenheit.
4. See Methodology section of the 2017 *Price Index of Operating Costs* report for changes in the weighting of Fuel items in 2017 at <http://www1.nyc.gov/site/rentguidelinesboard/research/rgb-research-reports.page>
5. The following assumptions were used in the computation of the commensurates: (1) the required change in owner revenue is 63.4% of the 2018 PIOC increase of 4.5%, or 2.9%. The 63.4% figure is the most recent ratio of average operating costs to average income in rent stabilized buildings; (2) for the “CPI-Adjusted NOI” commensurate, the increase in revenue due to the impact of inflation on NOI is 36.6% times the latest 12-month increase in the CPI ending February 2018 (1.8%), or 0.66%; (3) these lease terms are only illustrative—other combinations of one- and two-year guidelines could produce the adjustment in revenue; (4) assumptions regarding lease renewals and turnover were derived from the 2014 Housing and Vacancy Survey; (5) for the commensurate formulae, including a vacancy assumption, the 11.43% median increase in vacancy leases found in the rent stabilized apartments that reported a vacancy lease in the 2017 apartment registration file from the New York State Homes and Community Renewal was used; and (6) the collectability of these commensurate adjustments are assumed.
6. Whether profits will actually decline depends on the level of inflation, the composition of NOI (i.e., how much is debt service and how much is profit), and changes in tax law and interest rates.
7. The 2017 expenditure survey of owner maintenance costs revealed that they spend less on maintenance supplies and replacement items than in previous price indices, eliminating the need to gather so many items representing these two categories. The items removed from the Maintenance component in the 2018 *Price Index of Operating Costs* were Air Conditioner Repair (513), Light Bulbs (801), Light Switch (802), Wet Mop (803), Floor Wax (804), Pushbroom (806), Detergent (807), Washers (809), Window/glass Cleaner (812), Duplex Receptacle (814), Refrigerator #1 (901), Air Conditioner #2 (904), Floor Runner (905) and Range #1 (907).
8. Source: “Short-Term Energy Outlook,” March 2018. U.S. Energy Information Administration, Department of Energy.



# Appendices

## 1. PIOC Sample, Number of Price Quotes per Item, 2017 vs. 2018

| Spec # | Description               | 2017       | 2018       | Spec # | Description           | 2017         | 2018         |
|--------|---------------------------|------------|------------|--------|-----------------------|--------------|--------------|
| 211    | Apartment Value           | 63         | 87         | 817    | Large Trash Bags      | -            | 13           |
| 212    | Non-Union Super           | 59         | 63         | 818    | Smoke Detectors       | -            | 9            |
| 216    | Non-Union Janitor/Porter  | 37         | 28         | 902    | Refrigerator #2       | 12           | 12           |
|        | LABOR COSTS               | <b>159</b> | <b>178</b> | 903    | Air Conditioner #1    | 8            | 10           |
| 301    | Fuel Oil #2               | 32         | 32         | 906    | Dishwasher            | 12           | 12           |
| 302    | Fuel Oil #4               | 11         | 11         | 908    | Range #2              | 12           | 12           |
|        | FUEL OIL                  | <b>43</b>  | <b>43</b>  | 909    | Carpet                | 10           | 10           |
| 501    | Repainting                | 126        | 99         | 910    | Dresser               | 6            | 5            |
| 502    | Plumbing, Faucet          | 32         | 31         | 911    | Mattress & Box Spring | 5            | 9            |
| 503    | Plumbing, Stoppage        | 29         | 29         |        | MAINTENANCE           | <b>506</b>   | <b>451</b>   |
| 504    | Elevator #1, 6 fl., 1 e.  | 10         | 8          | 601    | Management Fees       | 51           | 41           |
| 505    | Elevator #2, 13 fl., 2 e. | 10         | 6          | 602    | Accountant Fees       | 29           | 26           |
| 506    | Elevator #3, 19 fl., 3 e. | 10         | 6          | 603    | Attorney Fees         | 21           | 22           |
| 507    | Burner Repair             | 10         | 9          | 604    | Newspaper Ads         | 20           | 16           |
| 508    | Boiler Repair, Tube       | 11         | 9          | 607    | Bill Envelopes        | 11           | 11           |
| 509    | Boiler Repair, Weld       | 9          | 7          | 608    | P.O. Box              | 10           | 10           |
| 510    | Refrigerator Repair       | 8          | 5          | 609    | Copy Paper            | 11           | 11           |
| 511    | Range Repair              | 10         | 5          |        | ADMINISTRATIVE COSTS  | <b>153</b>   | <b>137</b>   |
| 512    | Roof Repair               | 22         | 16         | 701    | INSURANCE COSTS       | <b>294</b>   | <b>463</b>   |
| 514    | Floor Maint. #1, Studio   | 6          | 7          |        | ALL ITEMS             | <b>1,155</b> | <b>1,272</b> |
| 515    | Floor Maint. #2, 1 Br.    | 6          | 7          |        |                       |              |              |
| 516    | Floor Maint. #3, 2 Br.    | 6          | 7          |        |                       |              |              |
| 517    | Extermination Services    | -          | 8          |        |                       |              |              |
| 518    | Linen/Laundry Service     | 6          | 5          |        |                       |              |              |
| 519    | Electrician Services      | -          | 12         |        |                       |              |              |
| 805    | Paint                     | 11         | 9          |        |                       |              |              |
| 808    | Bucket                    | 13         | 12         |        |                       |              |              |
| 810    | Linens                    | 10         | 11         |        |                       |              |              |
| 811    | Pine Disinfectant         | 13         | 11         |        |                       |              |              |
| 813    | Switch Plate              | 11         | 11         |        |                       |              |              |
| 815    | Toilet Seat               | 15         | 15         |        |                       |              |              |
| 816    | Deck Faucet               | 15         | 14         |        |                       |              |              |

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NOTE: Specs 517, 519, 817 and 818 are newly added for 2018. Specs 901 (Refrigerator #1), 904 (Air Conditioner #2), 905 (Floor Runner), 907 (Range #1), 801 (Light Bulbs), 802 (Light Switch), 803 (Wet Mop), 804 (Floor Wax), 806 (Pushbroom), 807 (Detergent), 809 (Washers), 812 (Window Cleaner), 814 (Duplex Receptacle), and 513 (Air Conditioner Repair) were removed.

## 2. Expenditure Weight, Price Relatives, Percent Changes and Standard Errors, All Apartments, 2018

| Spec # | Item Description               | Expenditure Weight | Price Relative | % Change      | Standard Error | Spec # | Item Description     | Expenditure Weight | Price Relative | % Change     | Standard Error |
|--------|--------------------------------|--------------------|----------------|---------------|----------------|--------|----------------------|--------------------|----------------|--------------|----------------|
| 101    | TAXES                          | <b>0.2988</b>      | <b>1.0632</b>  | <b>6.32%</b>  | <b>0.0281</b>  | 805    | Paint                | 0.0294             | 1.0354         | 3.54%        | 1.0514         |
| 201    | Payroll, Bronx, All (Union)    | 0.0947             | 1.0182         | 1.82%         | 0.0000         | 808    | Bucket               | 0.0055             | 0.9745         | -2.55%       | 2.3123         |
| 202    | Payroll, Other, Union, Supts.  | 0.0972             | 1.0286         | 2.86%         | 0.0000         | 811    | Pine Disinfectant    | 0.0077             | 0.9861         | -1.39%       | 3.0524         |
| 203    | Payroll, Other, Union, Other   | 0.2438             | 1.0300         | 3.00%         | 0.0000         | 813    | Switch Plate         | 0.0054             | 0.9945         | -0.55%       | 2.1259         |
| 204    | Payroll, Other, Non-Union, All | 0.3030             | 1.0508         | 5.08%         | 2.2045         | 815    | Toilet Seat          | 0.0124             | 1.0518         | 5.18%        | 6.8712         |
| 205    | Social Security Insurance      | 0.0423             | 1.0368         | 3.68%         | 0.0000         | 816    | Deck Faucet          | 0.0156             | 1.0232         | 2.32%        | 3.5341         |
| 206    | Unemployment Insurance         | 0.0042             | 0.8717         | -12.83%       | 0.0000         | 817    | Large Trash Bags     | 0.0127             | 1.0027         | 0.27%        | 2.9836         |
| 207    | Private Health & Welfare       | 0.2147             | 1.0172         | 1.72%         | 0.0000         | 818    | Smoke Detectors      | 0.0127             | 0.9526         | -4.74%       | 4.5193         |
|        | LABOR COSTS                    | <b>0.1672</b>      | <b>1.0319</b>  | <b>3.19%</b>  | <b>0.6681</b>  | 902    | Refrigerator #2      | 0.0377             | 1.0301         | 3.01%        | 1.3136         |
| 301    | Fuel Oil #2                    | 0.2739             | 1.1894         | 18.94%        | 0.8626         | 903    | Air Conditioner #1   | 0.0014             | 1.0417         | 4.17%        | 2.4005         |
| 302    | Fuel Oil #4                    | 0.1545             | 1.2169         | 21.69%        | 1.2079         | 906    | Dishwasher           | 0.0040             | 0.9672         | -3.28%       | 3.7348         |
| 405    | Gas #2, 65,000 therms          | 0.0916             | 1.1606         | 16.06%        | 0.0000         | 908    | Range #2             | 0.0175             | 0.9818         | -1.82%       | 2.3689         |
| 406    | Gas #3, 214,000 therms         | 0.3963             | 1.1528         | 15.28%        | 0.0000         |        | MAINTENANCE          | <b>0.1793</b>      | <b>1.0344</b>  | <b>3.44%</b> | <b>0.4232</b>  |
| 407    | Steam #1, 1.2m lbs             | 0.0635             | 1.0464         | 4.64%         | 0.0000         | 601    | Management Fees      | 0.5285             | 1.0081         | 0.81%        | 1.7612         |
| 408    | Steam #2, 2.6m lbs             | 0.0203             | 1.0397         | 3.97%         | 0.0000         | 602    | Accountant Fees      | 0.1250             | 1.0256         | 2.56%        | 1.7148         |
|        | FUEL                           | <b>0.0644</b>      | <b>1.1644</b>  | <b>16.44%</b> | <b>0.3010</b>  | 603    | Attorney Fees        | 0.2160             | 1.0450         | 4.50%        | 2.5957         |
| 401    | Electricity #1, 2,500 KWH      | 0.0197             | 1.0150         | 1.50%         | 0.0000         | 604    | Newspaper Ads        | 0.0105             | 1.0126         | 1.26%        | 0.7918         |
| 402    | Electricity #2, 15,000 KWH     | 0.2423             | 1.0152         | 1.52%         | 0.0000         | 607    | Bill Envelopes       | 0.0211             | 1.0148         | 1.48%        | 1.3542         |
| 404    | Gas #1, 12,000 therms          | 0.0074             | 1.1056         | 10.56%        | 0.0000         | 608    | P.O. Box             | 0.0220             | 1.0264         | 2.64%        | 0.8512         |
| 410    | Water & Sewer                  | 0.7306             | 1.0000         | 0.00%         | 0.0000         | 609    | Copy Paper           | 0.0215             | 1.0060         | 0.60%        | 2.2491         |
|        | UTILITIES                      | <b>0.1034</b>      | <b>1.0048</b>  | <b>0.48%</b>  | <b>0.0000</b>  | 409    | Communications       | 0.0555             | 0.9549         | -4.51%       | 0.0000         |
| 501    | Repainting                     | 0.2262             | 1.0627         | 6.27%         | 1.1710         |        | ADMINISTRATIVE COSTS | <b>0.1356</b>      | <b>1.0158</b>  | <b>1.58%</b> | <b>1.1091</b>  |
| 502    | Plumbing, Faucet               | 0.1080             | 1.0242         | 2.42%         | 0.9129         | 701    | INSURANCE COSTS      | <b>0.0513</b>      | <b>1.0332</b>  | <b>3.32%</b> | <b>0.6460</b>  |
| 503    | Plumbing, Stoppage             | 0.0987             | 1.0292         | 2.92%         | 1.0119         |        | ALL ITEMS            | <b>1.0000</b>      | <b>1.04530</b> | <b>4.53%</b> | <b>0.2059</b>  |
| 504    | Elevator #1, 6 fl., 1 e.       | 0.0212             | 1.0490         | 4.90%         | 1.7639         |        |                      |                    |                |              |                |
| 505    | Elevator #2, 13 fl., 2 e.      | 0.0131             | 1.0738         | 7.38%         | 3.9291         |        |                      |                    |                |              |                |
| 506    | Elevator #3, 19 fl., 3 e.      | 0.0073             | 1.0949         | 9.49%         | 4.7679         |        |                      |                    |                |              |                |
| 507    | Burner Repair                  | 0.0327             | 1.0230         | 2.30%         | 1.9380         |        |                      |                    |                |              |                |
| 508    | Boiler Repair, Tube            | 0.0400             | 1.0302         | 3.02%         | 2.9108         |        |                      |                    |                |              |                |
| 509    | Boiler Repair, Weld            | 0.0353             | 1.0297         | 2.97%         | 2.9633         |        |                      |                    |                |              |                |
| 510    | Refrigerator Repair            | 0.0130             | 1.0583         | 5.83%         | 4.2823         |        |                      |                    |                |              |                |
| 511    | Range Repair                   | 0.0115             | 1.1167         | 11.67%        | 5.6723         |        |                      |                    |                |              |                |
| 512    | Roof Repair                    | 0.0476             | 1.0377         | 3.77%         | 1.5333         |        |                      |                    |                |              |                |
| 514    | Floor Maint. #1, Studio        | 0.0036             | 1.0320         | 3.20%         | 2.3881         |        |                      |                    |                |              |                |
| 515    | Floor Maint. #2, 1 Br.         | 0.0061             | 1.0321         | 3.21%         | 2.3920         |        |                      |                    |                |              |                |
| 516    | Floor Maint. #3, 2 Br.         | 0.0551             | 1.0322         | 3.22%         | 2.3966         |        |                      |                    |                |              |                |
| 517    | Extermination Services         | 0.0465             | 1.0149         | 1.49%         | 1.2022         |        |                      |                    |                |              |                |
| 519    | Electrician Services           | 0.0723             | 1.0052         | 0.52%         | 0.3797         |        |                      |                    |                |              |                |

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NOTE: Specs 517, 519, 817 and 818 are newly added for 2018. Specs 901 (Refrigerator #1), 904 (Air Conditioner #2), 905 (Floor Runner), 907 (Range #1), 801 (Light Bulbs), 802 (Light Switch), 803 (Wet Mop), 804 (Floor Wax), 806 (Pushbroom), 807 (Detergent), 809 (Washers), 812 (Window Cleaner), 814 (Duplex Receptacle), and 513 (Air Conditioner Repair) were removed.

### 3. Price Relative by Building Type, Apartments, 2018

| Component Description | Pre-1947    | Post-1946   | Gas Heated  | Oil Heated  |
|-----------------------|-------------|-------------|-------------|-------------|
| TAXES                 | 6.6%        | 5.8%        | 6.3%        | 6.3%        |
| LABOR COSTS           | 3.4%        | 2.9%        | 3.5%        | 3.2%        |
| FUEL                  | 17.3%       | 13.6%       | 15.4%       | 19.9%       |
| UTILITIES             | 0.5%        | 0.5%        | 0.5%        | 0.5%        |
| MAINTENANCE           | 3.4%        | 3.4%        | 3.5%        | 3.4%        |
| ADMINISTRATIVE COSTS  | 1.6%        | 1.5%        | 1.6%        | 1.6%        |
| INSURANCE COSTS       | 3.3%        | 3.3%        | 3.3%        | 3.3%        |
| <b>ALL ITEMS</b>      | <b>4.9%</b> | <b>4.0%</b> | <b>4.4%</b> | <b>5.1%</b> |

### 4. Price Relative by Hotel Type, 2018

| Component Description | Hotel       | Rooming House | SRO         |
|-----------------------|-------------|---------------|-------------|
| TAXES                 | -1.4%       | 5.8%          | 3.9%        |
| LABOR COSTS           | 3.8%        | 4.0%          | 4.3%        |
| FUEL                  | 14.5%       | 18.9%         | 14.9%       |
| UTILITIES             | 0.4%        | 2.8%          | 0.7%        |
| MAINTENANCE           | 3.8%        | 3.6%          | 3.3%        |
| ADMINISTRATIVE COSTS  | -0.1%       | 1.5%          | 1.1%        |
| INSURANCE COSTS       | 3.3%        | 3.3%          | 3.3%        |
| <b>ALL ITEMS</b>      | <b>1.9%</b> | <b>6.0%</b>   | <b>5.5%</b> |

## 5. Percentage Change in Real Estate Tax by Borough and Source of Change, Apartments and Hotels, 2018

|                       | % Change Due to Assessments | % Change Due to Exemptions | % Change Due to Tax Rates | % Change Due to Abatements | % Change Due to Interactions* | Total % Change |
|-----------------------|-----------------------------|----------------------------|---------------------------|----------------------------|-------------------------------|----------------|
| <b>APARTMENTS</b>     |                             |                            |                           |                            |                               |                |
| Manhattan             | 7.8%                        | -0.4%                      | -1.3%                     | 0.1%                       | -0.1%                         | 6.1%           |
| Bronx                 | 9.4%                        | -2.3%                      | -1.1%                     | 0.6%                       | -0.1%                         | 6.5%           |
| Brooklyn              | 11.9%                       | -3.1%                      | -1.4%                     | -0.1%                      | -0.1%                         | 7.3%           |
| Queens                | 9.1%                        | -0.8%                      | -1.3%                     | -0.5%                      | -0.1%                         | 6.3%           |
| Staten Island         | 8.1%                        | 1.1%                       | -1.4%                     | -0.2%                      | -0.1%                         | 7.5%           |
| <b>All Apartments</b> | <b>9.0%</b>                 | <b>-1.0%</b>               | <b>-1.3%</b>              | <b>-0.2%</b>               | <b>-0.1%</b>                  | <b>6.3%</b>    |
| <b>HOTELS</b>         |                             |                            |                           |                            |                               |                |
| Hotel                 | -0.9%                       | 0.4%                       | -0.8%                     | -0.2%                      | 0.0%                          | -1.4%          |
| Rooming House         | 7.2%                        | 0.0%                       | -1.3%                     | 0.0%                       | -0.1%                         | 5.8%           |
| SRO                   | 6.3%                        | -1.2%                      | -1.1%                     | 0.0%                       | -0.1%                         | 3.9%           |
| <b>All Hotels</b>     | <b>2.5%</b>                 | <b>-0.1%</b>               | <b>-0.9%</b>              | <b>-0.1%</b>               | <b>0.0%</b>                   | <b>1.3%</b>    |

Note: Totals may not add due to rounding.

\* Real estate tax interactions are the cumulative effects of changes in tax rates, assessments, exemptions and abatements in the same year, after subtracting out the individual effects of each of these changes. Interactions have minimal impact on the overall change in real estate taxes.

## 6. Tax Change by Borough and Community Board, Apartments, 2018

| Borough   | Community Board | Number of Buildings | Tax Relative | Borough  | Community Board | Number of Buildings | Tax Relative  | Borough      | Community Board | Number of Buildings | Tax Relative |
|-----------|-----------------|---------------------|--------------|----------|-----------------|---------------------|---------------|--------------|-----------------|---------------------|--------------|
| Manhattan |                 | <b>12,234</b>       | <b>6.07%</b> | Brooklyn |                 | <b>13,295</b>       | <b>7.30%</b>  | Queens       |                 | <b>7,049</b>        | <b>6.34%</b> |
|           | 1               | 86                  | 13.71%       |          | 7               | 968                 | 6.81%         |              | 17              | 644                 | 10.36%       |
|           | 2               | 1,089               | 6.43%        |          | 8               | 355                 | 6.24%         |              | 18              | 81                  | 10.79%       |
|           | 3               | 1,531               | 6.66%        |          | 9               | 309                 | 6.14%         |              | 1               | 1,999               | 7.56%        |
|           | 4               | 940                 | 7.00%        |          | 10              | 223                 | 7.05%         |              | 2               | 871                 | 8.65%        |
|           | 5               | 245                 | 6.48%        |          | 11              | 332                 | 8.68%         |              | 3               | 497                 | 6.56%        |
|           | 6               | 799                 | 5.55%        |          | 12              | 513                 | 3.94%         |              | 4               | 525                 | 4.51%        |
|           | 7               | 1,699               | 5.69%        |          | 1               | 1,675               | 0.93%         |              | 5               | 1,212               | 7.07%        |
|           | 8               | 1,854               | 4.77%        |          | 2               | 617                 | 4.99%         |              | 6               | 324                 | 5.95%        |
|           | 9               | 743                 | 8.35%        |          | 3               | 1,070               | -3.10%        |              | 7               | 461                 | 5.24%        |
|           | 10              | 1,075               | 6.60%        |          | 4               | 1,417               | 7.81%         |              | 8               | 231                 | 6.31%        |
|           | 11              | 722                 | 10.94%       |          | 5               | 465                 | 12.42%        |              | 9               | 241                 | 5.30%        |
| 12        | 1,440           | 6.98%               | 6            | 892      | 7.18%           | 10                  | 52            |              | 7.84%           |                     |              |
| Lower     | <b>7,779</b>    | <b>5.80%</b>        | 7            | 865      | 10.01%          | 11                  | 125           |              | 7.32%           |                     |              |
| Upper     | <b>4,455</b>    | <b>7.74%</b>        | 8            | 1,041    | 8.19%           | 12                  | 220           | 5.77%        |                 |                     |              |
| Bronx     | <b>5,822</b>    | <b>6.47%</b>        | 9            | 588      | 8.89%           | 13                  | 59            | 7.05%        |                 |                     |              |
|           | 1               | 442                 | 9.10%        | 10       | 794             | 6.16%               | 14            | 173          | 2.05%           |                     |              |
|           | 2               | 281                 | 9.28%        | 11       | 712             | 8.54%               | Staten Island | <b>177</b>   | <b>7.46%</b>    |                     |              |
|           | 3               | 388                 | -3.72%       | 12       | 610             | 9.61%               |               | 1            | 130             | 6.42%               |              |
|           | 4               | 757                 | 6.91%        | 13       | 181             | 4.50%               |               | 2            | 27              | 8.76%               |              |
|           | 5               | 677                 | 6.09%        | 14       | 885             | 8.68%               | 3             | 20           | 10.36%          |                     |              |
| 6         | 556             | 6.80%               | 15           | 363      | 6.57%           | <b>ALL</b>          | <b>38,577</b> | <b>6.32%</b> |                 |                     |              |
|           |                 |                     | 16           | 386      | 13.02%          |                     |               |              |                 |                     |              |

Note: No Community Board (CB) could be assigned to the following number of buildings for each borough: Manhattan (10), Bronx (21), Brooklyn (9), Queens (59). The number of buildings in the category "ALL" for each borough includes the buildings that could not be assigned a Community Board. In addition, one building in Manhattan is a part of Community Board 8 in the Bronx. This building is not included in the total for CB 8 in the Bronx, but is represented in the Manhattan total and the total for "ALL" buildings. Core and Upper Manhattan building totals are defined by block count and cannot be calculated by using Community Board numbers alone.

## 7. Expenditure Weight, Price Relatives, Percent Changes and Standard Errors, All Hotels, 2018

| Spec # | Item Description             | Expenditure Weight | Price Relative | % Change      | Standard Error | Spec # | Item Description       | Expenditure Weight | Price Relative | % Change     | Standard Error |
|--------|------------------------------|--------------------|----------------|---------------|----------------|--------|------------------------|--------------------|----------------|--------------|----------------|
| 101    | TAXES                        | <b>0.4104</b>      | <b>1.0129</b>  | <b>1.29%</b>  | <b>0.8890</b>  | 518    | Linen/Laundry Service  | 0.1186             | 1.0476         | 4.76%        | 4.8480         |
| 205    | Social Security Insurance    | 0.0487             | 1.0368         | 3.68%         | 0.0000         | 519    | Electrician Services   | 0.0228             | 1.0052         | 0.52%        | 0.3797         |
| 206    | Unemployment Insurance       | 0.0085             | 0.8717         | -12.83%       | 0.0000         | 805    | Paint                  | 0.0516             | 1.0354         | 3.54%        | 1.0514         |
| 208    | Hotel Private Health/Welfare | 0.0565             | 1.0444         | 4.44%         | 0.0000         | 808    | Bucket                 | 0.0216             | 0.9745         | -2.55%       | 2.3123         |
| 209    | Hotel Union Labor            | 0.3158             | 1.0350         | 3.50%         | 0.0000         | 810    | Linens                 | 0.0702             | 0.9767         | -2.33%       | 11.0769        |
| 210    | SRO Union Labor              | 0.0123             | 1.0350         | 3.50%         | 0.0000         | 811    | Pine Disinfectant      | 0.0098             | 0.9861         | -1.39%       | 3.0524         |
| 211    | Apartment Value              | 0.1165             | 1.0268         | 2.68%         | 0.5017         | 813    | Switch Plate           | 0.0141             | 0.9945         | -0.55%       | 2.1259         |
| 212    | Non-Union Superintendent     | 0.3149             | 1.0533         | 5.33%         | 0.8429         | 815    | Toilet Seat            | 0.0197             | 1.0518         | 5.18%        | 6.8712         |
| 216    | Non-Union Janitor/Porter     | 0.1268             | 1.0439         | 4.39%         | 8.0657         | 816    | Deck Faucet            | 0.0248             | 1.0232         | 2.32%        | 3.5341         |
|        | LABOR COSTS                  | <b>0.1498</b>      | <b>1.0401</b>  | <b>4.01%</b>  | <b>1.0578</b>  | 817    | Large Trash Bags       | 0.0303             | 1.0027         | 0.27%        | 2.9836         |
| 301    | Fuel Oil #2                  | 0.6016             | 1.1894         | 18.94%        | 0.8626         | 818    | Extermination Services | 0.0303             | 0.9526         | -4.74%       | 4.5193         |
| 302    | Fuel Oil #4                  | 0.0144             | 1.2169         | 21.69%        | 1.2079         | 902    | Refrigerator #2        | 0.0134             | 1.0301         | 3.01%        | 1.3136         |
| 403    | Electricity #3, 82,000 KWH   | 0.2228             | 1.0412         | 4.12%         | 0.0000         | 903    | Air Conditioner #1     | 0.0081             | 1.0417         | 4.17%        | 2.4005         |
| 405    | Gas #2, 65,000 therms        | 0.0297             | 1.1606         | 16.06%        | 0.0000         | 908    | Range #2               | 0.0056             | 0.9818         | -1.82%       | 2.3689         |
| 406    | Gas #3, 214,000 therms       | 0.1312             | 1.1528         | 15.28%        | 0.0000         | 909    | Carpet                 | 0.0433             | 1.0409         | 4.09%        | 3.0033         |
| 407    | Steam #1, 1.2m lbs           | 0.0003             | 1.0464         | 4.64%         | 0.0000         | 910    | Dresser                | 0.0213             | 1.0768         | 7.68%        | 8.4192         |
|        | FUEL                         | <b>0.1368</b>      | <b>1.1511</b>  | <b>15.11%</b> | <b>0.5192</b>  | 911    | Mattress & Box Spring  | 0.0183             | 1.0469         | 4.69%        | 5.2973         |
| 401    | Electricity #1, 2,500 KWH    | 0.1307             | 1.0150         | 1.50%         | 0.0000         |        | MAINTENANCE            | <b>0.1156</b>      | <b>1.0375</b>  | <b>3.75%</b> | <b>0.2436</b>  |
| 402    | Electricity #2, 15,000 KWH   | 0.1360             | 1.0152         | 1.52%         | 0.0000         | 601    | Management Fees        | 0.5586             | 1.0081         | 0.81%        | 1.7612         |
| 404    | Gas #1, 12,000 therms        | 0.0760             | 1.1056         | 10.56%        | 0.0000         | 602    | Accountant Fees        | 0.0608             | 1.0256         | 2.56%        | 1.7148         |
| 410    | Water & Sewer                | 0.6573             | 1.0000         | 0.00%         | 0.0000         | 603    | Attorney Fees          | 0.0873             | 1.0450         | 4.50%        | 2.5957         |
|        | UTILITIES                    | <b>0.0470</b>      | <b>1.0120</b>  | <b>1.20%</b>  | <b>0.0000</b>  | 604    | Newspaper Ads          | 0.0839             | 1.0126         | 1.26%        | 0.7918         |
| 501    | Repainting                   | 0.1350             | 1.0627         | 6.27%         | 1.1710         | 607    | Envelopes              | 0.0054             | 1.0148         | 1.48%        | 1.3542         |
| 502    | Plumbing, Faucet             | 0.0507             | 1.0242         | 2.42%         | 0.9129         | 608    | P.O. Box               | 0.0057             | 1.0264         | 2.64%        | 0.8512         |
| 503    | Plumbing, Stoppage           | 0.0491             | 1.0292         | 2.92%         | 1.0119         | 609    | Copy Paper             | 0.0056             | 1.0060         | 0.60%        | 2.2491         |
| 504    | Elevator #1, 6 fl., 1 e.     | 0.0221             | 1.0490         | 4.90%         | 1.7639         | 409    | Communications         | 0.1927             | 0.9549         | -4.51%       | 0.0000         |
| 505    | Elevator #2, 13 fl., 2 e.    | 0.0189             | 1.0738         | 7.38%         | 3.9291         |        | ADMINISTRATIVE COSTS   | <b>0.0939</b>      | <b>1.0026</b>  | <b>0.26%</b> | <b>1.0173</b>  |
| 506    | Elevator #3, 19 fl., 3 e.    | 0.0172             | 1.0949         | 9.49%         | 4.7679         | 701    | INSURANCE COSTS        | <b>0.0465</b>      | <b>1.0332</b>  | <b>3.32%</b> | <b>0.6460</b>  |
| 507    | Burner Repair                | 0.0163             | 1.0230         | 2.30%         | 1.9380         |        | ALL ITEMS              | <b>1.0000</b>      | <b>1.0387</b>  | <b>3.87%</b> | <b>0.4367</b>  |
| 508    | Boiler Repair, Tube          | 0.0180             | 1.0302         | 3.02%         | 2.9108         |        |                        |                    |                |              |                |
| 509    | Boiler Repair, Weld          | 0.0188             | 1.0297         | 2.97%         | 4.2823         |        |                        |                    |                |              |                |
| 511    | Range Repair                 | 0.0775             | 1.1167         | 11.67%        | 5.6723         |        |                        |                    |                |              |                |
| 512    | Roof Repair                  | 0.0203             | 1.0377         | 3.77%         | 1.5333         |        |                        |                    |                |              |                |
| 514    | Floor Maint. #1, Studio      | 0.0005             | 1.0320         | 3.20%         | 2.3881         |        |                        |                    |                |              |                |
| 515    | Floor Maint. #2, 1 Br.       | 0.0009             | 1.0321         | 3.21%         | 2.3920         |        |                        |                    |                |              |                |
| 516    | Floor Maint. #3, 2 Br.       | 0.0083             | 1.0322         | 3.22%         | 2.3966         |        |                        |                    |                |              |                |
| 517    | Extermination Services       | 0.0228             | 1.0149         | 1.49%         | 1.2022         |        |                        |                    |                |              |                |

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NOTE: Specs 517, 519, 817 and 818 are newly added for 2018. Specs 901 (Refrigerator #1), 904 (Air Conditioner #2), 907 (Range #1), 801 (Light Bulbs), 802 (Light Switch), 803 (Wet Mop), 804 (Floor Wax), 806 (Pushbroom), 807 (Detergent), 809 (Washers), 812 (Window Cleaner), 814 (Duplex Receptacle), and 513 (Air Conditioner Repair) were removed.

## 8. Expenditure Weight and Price Relatives, Lofts, 2018

| Spec # | Item Description               | Expenditure Weight | Price Relative | % Change      | Spec # | Item Description               | Expenditure Weight | Price Relative | % Change     |
|--------|--------------------------------|--------------------|----------------|---------------|--------|--------------------------------|--------------------|----------------|--------------|
| 101    | TAXES                          | <b>0.3197</b>      | <b>1.0632</b>  | <b>6.32%</b>  | 805    | Paint                          | 0.0509             | 1.0354         | 3.54%        |
| 202    | Payroll, Other, Union, Supts.  | 0.2309             | 1.0286         | 2.86%         | 808    | Bucket                         | 0.0096             | 0.9745         | -2.55%       |
| 204    | Payroll, Other, Non-Union, All | 0.5484             | 1.0508         | 5.08%         | 811    | Pine Disinfectant              | 0.0138             | 0.9861         | -1.39%       |
| 205    | Social Security Insurance      | 0.0398             | 1.0368         | 3.68%         | 813    | Switch Plate                   | 0.0063             | 0.9945         | -0.55%       |
| 206    | Unemployment Insurance         | 0.0044             | 0.8717         | -12.83%       | 815    | Toilet Seat                    | 0.0214             | 1.0518         | 5.18%        |
| 207    | Private Health & Welfare       | 0.1764             | 1.0172         | 1.72%         | 816    | Deck Faucet                    | 0.0270             | 1.0232         | 2.32%        |
|        | LABOR COSTS                    | <b>0.0877</b>      | <b>1.0384</b>  | <b>3.84%</b>  | 817    | Large Trash Bags               | 0.0184             | 1.0027         | 0.27%        |
| 301    | Fuel Oil #2                    | 0.2960             | 1.1894         | 18.94%        | 818    | Smoke Detectors                | 0.0184             | 0.9526         | -4.74%       |
| 302    | Fuel Oil #4                    | 0.5453             | 1.2169         | 21.69%        | 902    | Refrigerator #2                | 0.0752             | 1.0301         | 3.01%        |
| 405    | Gas #2, 65,000 therms          | 0.0363             | 1.1606         | 16.06%        | 903    | Air Conditioner #1             | 0.0027             | 1.0417         | 4.17%        |
| 406    | Gas #3, 214,000 therms         | 0.0989             | 1.1528         | 15.28%        | 906    | Dishwasher                     | 0.0080             | 0.9672         | -3.28%       |
| 407    | Steam #1, 1.2m lbs             | 0.0180             | 1.0464         | 4.64%         | 908    | Range #2                       | 0.0350             | 0.9818         | -1.82%       |
| 408    | Steam #2, 2.6m lbs             | 0.0055             | 1.0397         | 3.97%         |        | MAINTENANCE                    | <b>0.0921</b>      | <b>1.0360</b>  | <b>3.60%</b> |
|        | FUEL                           | <b>0.0710</b>      | <b>1.196</b>   | <b>19.63%</b> |        | ADMINISTRATIVE COSTS-<br>LEGAL | <b>0.0609</b>      | <b>1.0450</b>  | <b>4.50%</b> |
| 401    | Electricity #1, 2,500 KWH      | 0.0078             | 1.0150         | 1.50%         | 601    | Management Fees                | 0.8353             | 1.0081         | 0.81%        |
| 402    | Electricity #2, 15,000 KWH     | 0.0971             | 1.0152         | 1.52%         | 602    | Accountant Fees                | 0.1304             | 1.0256         | 2.56%        |
| 404    | Gas #1, 12,000 therms          | 0.0029             | 1.1056         | 10.56%        | 604    | Newspaper Ads                  | 0.0093             | 1.0126         | 1.26%        |
| 410    | Water & Sewer - Frontage       | 0.8921             | 1.0000         | 0.00%         | 607    | Envelopes                      | 0.0061             | 1.0148         | 1.48%        |
|        | UTILITIES                      | <b>0.0664</b>      | <b>1.0019</b>  | <b>0.19%</b>  | 608    | PO Box                         | 0.0063             | 1.0264         | 2.64%        |
| 501    | Repainting                     | 0.2774             | 1.0627         | 6.27%         | 609    | Copy Paper                     | 0.0062             | 1.0060         | 0.60%        |
| 502    | Plumbing, Faucet               | 0.0868             | 1.0242         | 2.42%         | 409    | Telephone                      | 0.0064             | 0.9549         | -4.51%       |
| 503    | Plumbing, Stoppage             | 0.0793             | 1.0292         | 2.92%         |        | ADMINISTRATIVE COSTS-<br>OTHER | <b>0.0918</b>      | <b>1.0102</b>  | <b>1.02%</b> |
| 504    | Elevator #1, 6 fl., 1 e.       | 0.0349             | 1.0490         | 4.90%         | 701    | INSURANCE COSTS                | <b>0.2104</b>      | <b>1.0332</b>  | <b>3.32%</b> |
| 505    | Elevator #2, 13 fl., 2 e.      | 0.0217             | 1.0738         | 7.38%         |        | ALL ITEMS                      | <b>1.0000</b>      | <b>1.0516</b>  | <b>5.16%</b> |
| 506    | Elevator #3, 19 fl., 3 e.      | 0.0121             | 1.0949         | 9.49%         |        |                                |                    |                |              |
| 507    | Burner Repair                  | 0.0242             | 1.0230         | 2.30%         |        |                                |                    |                |              |
| 508    | Boiler Repair, Tube            | 0.0296             | 1.0302         | 3.02%         |        |                                |                    |                |              |
| 509    | Boiler Repair, Weld            | 0.0261             | 1.0297         | 2.97%         |        |                                |                    |                |              |
| 510    | Refrigerator Repair            | 0.0080             | 1.0583         | 5.83%         |        |                                |                    |                |              |
| 511    | Range Repair                   | 0.0071             | 1.1167         | 11.67%        |        |                                |                    |                |              |
| 512    | Roof Repair                    | 0.0486             | 1.0377         | 3.77%         |        |                                |                    |                |              |
| 514    | Floor Maint. #1, Studio        | 0.0001             | 1.0320         | 3.20%         |        |                                |                    |                |              |
| 515    | Floor Maint. #2, 1 Br.         | 0.0003             | 1.0321         | 3.21%         |        |                                |                    |                |              |
| 516    | Floor Maint. #3, 2 Br.         | 0.0024             | 1.0322         | 3.22%         |        |                                |                    |                |              |
| 517    | Extermination                  | 0.0272             | 1.0149         | 1.49%         |        |                                |                    |                |              |
| 519    | Electrician                    | 0.0272             | 1.0052         | 0.52%         |        |                                |                    |                |              |

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NOTE: Specs 517, 519, 817 and 818 are newly added for 2018. Specs 901 (Refrigerator #1), 904 (Air Conditioner #2), 905 (Floor Runner), 907 (Range #1), 801 (Light Bulbs), 802 (Light Switch), 803 (Wet Mop), 804 (Floor Wax), 806 (Pushbroom), 807 (Detergent), 809 (Washers), 812 (Window Cleaner), 814 (Duplex Receptacle), and 513 (Air Conditioner Repair) were removed.