

## QUICK VIEW

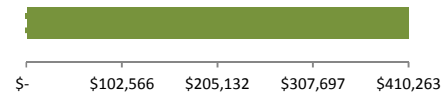
- ⬢ Project Performed Well
- ⬢ \$399,459 Guaranteed Savings
- ⬢ \$410,263 Annual Savings
- ⬢ \$10,804 Excess Savings

## KEY ACTION ITEMS

- ⬢ Please continue to provide accurate utility billing data and occupancy data for all sites.
- ⬢ Please investigate the high water consumption at Stern, Adams, Finn, and Greiner Towers and report findings to Constellation.

## ANNUAL MAINTENANCE

- ⬢ Please inspect water restrictors and faucets and replace as needed.
- ⬢ Please check for leaking toilets and toilet mechanisms and replace as necessary.
- ⬢ Please Check thermostats, and replace or repair as needed.
- ⬢ Please check window/door seals and replace as necessary.



### Energy Performance Contract Status



April 11, 2018

Ms. Donna Brightman, Executive Director  
Housing Authority of the Township of Woodbridge  
20 Bunns Lane  
Woodbridge, NJ 07095

Dear Ms. Brightman,

This is a Measurement and Verification Report (M&V Report) on the progress of your Energy Performance Contract (EPC) for the period of Jan 1 – Dec 31, 2017. The 2017 annual utility cost savings of \$410,263 exceeds the contract's 6th year guaranteed savings of \$399,459 by \$10,804. Per an email from Larry Stecker, 9 buildings at Woodbridge Garden Apartments were converted to RAD in April 2017. Water consumption was compared to 2016 and an adjustment was made for any month where the consumption varied by more than 5%. An adjustment was not made for electricity or gas consumption because energy savings are stipulated. The following sites were converted to RAD on November 30, 2017, Adams Towers, Finn Towers, Copper Towers, Olsen Towers, and Greiner Towers. An adjustment was not made this year, but one will be made next year to account for the conversion.

Energy consumption increased at several of the sites from prior years. Possible explanations for the increases could be billing anomalies (for example, some sites receive irregular electric bills which may contain consumption and costs from previous months, possibly rolling over from the previous year), equipment operating outside of proper control or normal conditions, unreported equipment replacement and/or excessive tenant consumption. Following the weather adjustments made for each site, 2017 energy consumption was compared to prior year's weather-adjusted consumption levels and unreported Material Change adjustments were made for several sites. Water consumption in 2017 rose by 22%, 8%, 11%, and 18% from prior year's consumption at Stern Towers, Adams Towers, Finn Towers, and Greiner Towers, respectively, and thus unreported material change adjustments were applied at these sites. See the attached document HATW Material Change Adjustments – 2017 for the details of the analyses.

More detailed savings information is attached in this report including: Annual Savings Summary, Material Change Adjustments, Utility Bill Summary, and Daily Per Resident Water Consumption. An invoice of \$40,270 for the annual M&V Fee is enclosed.

If you have questions about this report or about any aspect of your EPC, please contact our department.

Sincerely,

*Diane Medeiros*

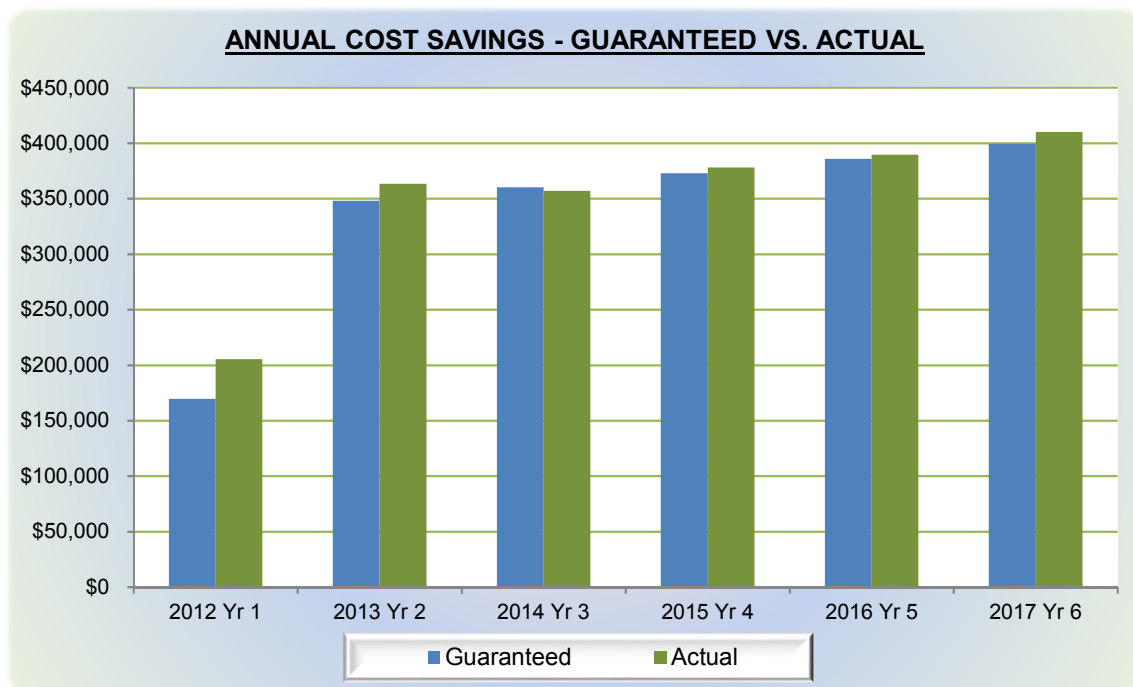
Diane Medeiros  
Performance Assurance Analyst  
(978) 848-6020  
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April 11, 2018

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Housing Authority of the Township of Woodbridge  
20 Bunns Lane  
Woodbridge, NJ 07095

Dear Ms. Brightman,

This is a Measurement and Verification Report (M&V Report) on the progress of your Energy Performance Contract (EPC) for the period of Jan 1 – Dec 31, 2017. The 2017 annual utility cost savings of \$410,263 exceeds the contract's 6<sup>th</sup> year guaranteed savings of \$399,459 by \$10,804. **Figure A** summarizes the guaranteed and achieved cost savings to date for this EPC.



**Figure A: Summary of EPC Performance to Date**

## Savings

Cost and consumption savings for the past 3 years by utility and M&V Savings Method type (Options A, B and C) are shown in the following **Table 1 and Table 2**, respectively. Authority-paid Option C water continues to have the greatest savings, followed by Authority-paid Option C electricity. Option A electrical and gas consumption savings shall remain constant throughout the remainder of the contract; however, the cost savings will likely increase on an annual basis due to increases of the Actual and/or Floor Utility Rates. Option B savings are used exclusively for the wind turbine installations at Adams Tower. Sub-metering of the turbine systems has yet to be completed, and therefore the annual savings are estimated from Table E2 of Schedule E in the EPC. Savings by AMP are shown in the attached document *Annual Savings Summary – 2017*.

**Table 1: Annual Cost Savings 2015 - 2017**

	ANNUAL COST SAVINGS		
	2015	2016	2017
WATER - Option C	\$191,345	\$189,696	\$198,982
GAS - Option A	\$32,608	\$33,749	\$34,930
GAS - Option C	\$18,435	\$25,732	\$21,907
ELECTRICITY - Option A	\$59,221	\$61,294	\$63,439
ELECTRICITY - Option B	\$1,182	\$1,223	\$1,266
ELECTRICITY - Option C	\$75,329	\$77,991	\$89,739
<b>TOTALS</b>	<b>\$378,120</b>	<b>\$389,685</b>	<b>\$410,263</b>

**Table 2: Annual Consumption Savings 2015 - 2017**

	ANNUAL CONSUMPTION SAVINGS		
	2015	2016	2017
WATER - Option C	18,837	18,551	18,801
GAS - Option A	20,626	20,626	20,626
GAS - Option C	12,856	17,337	14,261
ELECTRICITY - Option A	320,192	320,192	320,192
ELECTRICITY - Option B	6,440	6,440	6,440
ELECTRICITY - Option C	410,430	410,561	456,433

Cost savings for each utility are calculated annually by multiplying the utility consumption savings by the greater of either the actual average annual utility rate or the contract floor rate, which escalates by 3.5% annually. The rates used for this year's calculations are highlighted in the attached document *Annual Savings Summary – 2017*. **Tables 3 and 4** below show the contract floor rates for the different M&V Savings Methods, with the 2017 values highlighted.

**Table 3: Utility Floor Rates For M&V Savings Method Option A**

Year	UTILITY FLOOR RATES FOR SAVINGS METHOD OPTION A			
	Rate Multiplier	Water (\$/CCF)	Gas (\$/Therm)	Electricity (\$/kWh)
2012	1.0000		\$1.42589	\$0.16682
2013	1.0350		\$1.47580	\$0.17266
2014	1.0712		\$1.52745	\$0.17870
2015	1.1087		\$1.58091	\$0.18496
2016	1.1475		\$1.63624	\$0.19143
2017	1.1877		\$1.69351	\$0.19813
2018	1.2293		\$1.75278	\$0.20506
2019	1.2723		\$1.81413	\$0.21224
2020	1.3168		\$1.87762	\$0.21967
2021	1.3629		\$1.94334	\$0.22736
2022	1.4106		\$2.01136	\$0.23532
2023	1.4600		\$2.08176	\$0.24355
2024	1.5111		\$2.15462	\$0.25208
2025	1.5640		\$2.23003	\$0.26090
2026	1.6187		\$2.30808	\$0.27003

**Table 4: Utility Floor Rates For M&V Savings Method Options B & C**

Year	UTILITY FLOOR RATES FOR SAVINGS METHOD OPTIONS B & C			
	Rate Multiplier	Water (\$/CCF)	Gas (\$/Therm)	Electricity (\$/kWh)
2012	1.0000	\$8.91110	\$1.29340	\$0.16554
2013	1.0350	\$9.22299	\$1.33867	\$0.17133
2014	1.0712	\$9.54579	\$1.38552	\$0.17733
2015	1.1087	\$9.87990	\$1.43402	\$0.18354
2016	1.1475	\$10.22569	\$1.48421	\$0.18996
2017	1.1877	\$10.58359	\$1.53615	\$0.19661
2018	1.2293	\$10.95402	\$1.58992	\$0.20349
2019	1.2723	\$11.33741	\$1.64557	\$0.21061
2020	1.3168	\$11.73422	\$1.70316	\$0.21798
2021	1.3629	\$12.14491	\$1.76277	\$0.22561
2022	1.4106	\$12.56999	\$1.82447	\$0.23351
2023	1.4600	\$13.00994	\$1.88832	\$0.24168
2024	1.5111	\$13.46528	\$1.95442	\$0.25014
2025	1.5640	\$13.93657	\$2.02282	\$0.25890
2026	1.6187	\$14.42435	\$2.09362	\$0.26796

## Adjustments

Per an email from Larry Stecker, 9 buildings at Woodbridge Garden Apartments were converted to RAD in April 2017. Water consumption was compared to 2016 and an adjustment was made for any month where the consumption varied by more than 5%. An adjustment was not made for electricity or gas consumption because energy savings are stipulated. The following sites were converted to RAD on November 30, 2017, Adams Towers, Finn Towers, Copper Towers, Olsen Towers, and Greiner Towers. An adjustment was not made this year, but one will be made next year to account for the conversion.

The gas consumption at Stern, Olsen, Cooper and Greiner Towers as well as the electrical consumption at Adams and Finn Towers may be adjusted each year that the annual number of heating degree-days differs by more than 3% of the baseline period heating degree-day value, as described in Schedule E, Section 2, item 5 of the EPC. For Woodbridge, there were 4,330 heating degree-days in 2017, which is 7% less than the baseline heating degree-day value of 4,671. A least-squares linear regression analysis was performed with the baseline and 2017 heating degree-day and either gas or electrical consumption data for each of the sites, and the 2017 consumption was adjusted accordingly. Consumption adjustments were not made for the months of June through September, as little to no heating energy is expected to be consumed during these months. See the attached document *HATW Weather Adjustments – 2017* for the details of the analysis.

According to Section 17 of the EPC concerning Material Changes, energy and water consumption may also be adjusted for both reported and unreported Material Changes that occur at the individual properties. Per Section 17.2 of the EPC, "...if water or energy consumption for any year increases by five percent (5%) or more from the water or energy consumption for the same month of the preceding Agreement year, then such increase shall be deemed to result from an unreported Material Change, except where such increase is due to Equipment malfunction, faulty repair or other acts of negligence by Company." And per Section 17.3 of the EPC concerning adjustments for reported/unreported Material Changes, "...the amount of that increase may be subtracted from or that decrease shall be added to the total water/energy consumption, as appropriate according to Company, for that year prior to the calculation of Water/Energy Savings; and/or an adjustment may be made to the Company's Guaranteed Cost Savings."

Energy consumption increased at several of the sites from prior years. Possible explanations for the increases could be billing anomalies (for example, some sites receive irregular electric bills which may contain consumption and costs from previous months, possibly rolling over from the previous year), equipment operating outside of proper control or normal conditions, unreported equipment replacement and/or excessive tenant consumption. Following the weather adjustments made for each site, 2017 energy consumption was compared to prior year's weather-adjusted consumption levels and unreported Material Change adjustments were made for several sites. Water consumption in 2017 rose by 22%, 8%, 11%, and 18% from prior year's consumption at Stern Towers, Adams Towers, Finn Towers, and Greiner Towers, respectively, and thus unreported material change adjustments were applied at these sites. See the attached document *HATW Material Change Adjustments – 2017* for the details of the analyses.

## Water Consumption

Please see the attached document *Daily Per Resident Water Consumption* which gives quarterly and annual averages for resident water use by site. The target consumption, per Schedule F, item 6 of the EPC, is 50 gallons per resident per day. Cooper Towers continues to exceed the target consumption but shows an 18% decrease in daily per resident consumption compared to 2016. Please ensure that conservation procedures in Schedule F and preventative maintenance procedures in Schedule C are being followed. In addition, inform Constellation of any material changes to equipment, occupancy, or use of property that may affect energy and/or water use.

## Key Action Items

The following key action items will assist in maintaining good project performance and accurate and timely M&V reporting.

- Please provide utility, occupancy, and other pertinent data in a timely manner as any insights gained from the M&V analysis are most valuable when implemented as promptly as possible.
- Preventative maintenance should be performed as outlined in Schedule C of the EPC with special attention to the water measures listed below:
  - Inspect water restrictors and faucets and replace as needed.
  - Check for leaking toilets and toilet mechanisms and replace as necessary.
  - Inspect water piping for leaks and repair when found.
  - Leak test underground water lines and repair when found.

The performance of the Housing Authority of the Township of Woodbridge Energy Performance Contract continues to be good. More detailed calculations are included in the following attached documents for reference.

### 1) HATW Annual Savings Summary – 2017

This page summarizes utility consumption and cost savings achieved in 2017. Results are categorized by AMP and by utility. Separate tables are included for each M&V Savings Method. A summary table showing savings by utility for all AMPs combined is also included.

### 2) HATW Weather Adjustments – 2017

This document provides the analyses of the gas and electricity adjustments made for heating energy consumption based upon a comparison of the 2017 monthly heating degree-days to those of the baseline period.

### 3) HATW Material Change Adjustments – 2017

This document provides the analysis of the material change adjustments made for water, gas, and electrical consumption at several sites based upon a comparison of the weather-adjusted 2017 monthly consumption of that of the previous year.

**4) HATW Utility Bill Summary by Site – 2017**

These pages summarize utility bill data as reported by Larry Stecker. Monthly baseline consumption is also shown for each site.

**5) HATW Utility Bill Summary by AMP – 2017**

These pages categorize utility bill data into their respective AMP designations.

**6) HATW Daily Per Resident Water Consumption**

This chart shows the average daily water consumption per resident for each of your sites. Keeping in mind that our target consumption level is 50 gal/resident/day, this calculation is helpful in identifying problems, such as water leaks or excess usage.

Thanks to Larry Stecker for supplying utility bill data used for this report, and for taking the time to answer follow-up inquiries. If you have any questions about this report or about any aspect of your Energy Performance Contract, please call our department.

Sincerely,

*Diane Medeiros*

Diane Medeiros

Performance Assurance Analyst

(978) 848-6020

[Diane.Medeiros@constellation.com](mailto:Diane.Medeiros@constellation.com)

att: HATW Annual Savings Summary – 2017  
HATW Weather Adjustments – 2017  
HATW Material Change Adjustments – 2017  
HATW Utility Bill Summary by Site – 2017  
HATW Utility Bill Summary by AMP – 2017  
HATW Daily Per Resident Water Consumption

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Annual Savings Summary - 2017

(January 1 - December 31, 2017)

**NOTES:**

- 1) AMP 001 consists solely of Woodbridge Garden Apts, while AMP 002 includes all senior housing (Stern, Olsen, Cooper, Adams, Finn, & Greiner Towers).  
 2) Savings for wind turbines based upon EPC estimate until sub-metering installation completed.

AVERAGE UNIT COSTS - FLOOR VS. ACTUAL UTILITY RATES FOR CY2016 YEAR 5						
SAVINGS METHOD	Electricity (\$/kWh)		Gas (\$/Therm)		Water/Sewer (\$/CCF)	
	Floor Rate	CY2017	Floor Rate	CY2017	Floor Rate	CY2017
Option A (AMP 001)	\$0.19813	\$0.15865	\$1.6935	\$0.74064		
Option A (AMP 002)	\$0.19813	\$0.10829	\$1.6935	\$0.89769		
Opt B&C (AMP 001)	\$0.19661	\$0.15865	\$1.5362	\$0.74064	\$10.5836	\$10.36507
Opt B&C (AMP 002)	\$0.19661	\$0.10829	\$1.5362	\$0.89769	\$10.5836	\$10.24455

**OPTION A SAVINGS - Lighting (WGA, Stern, Olsen, Cooper) & Reduced DHW (Gas @ WGA)**

	ELECTRICITY (kWh)		GAS (Therms)		WATER (CCF)	
	AMP 001	AMP 002	AMP 001	AMP 002	AMP 001	AMP 002
Consumption Savings	166,645	153,547	20,626	All gas savings at AMP 002 are calculated using Option C.	All water savings are calculated using Option C.	All water savings are calculated using Option C.
Average Unit Cost (\$/unit)	\$0.19813	\$0.19813	\$1.69351			
<b>Net Cost Savings</b>	<b>\$33,017</b>	<b>\$30,422</b>	<b>\$34,930</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**OPTION B SAVINGS - Wind Turbines (Electricity only)**

	ELECTRICITY (kWh)		GAS (Therms)		WATER (CCF)	
	AMP 001	AMP 002	AMP 001	AMP 002	AMP 001	AMP 002
Consumption Generated	Electricity savings are for Wind turbines installed at Adams Towers (AMP 002) only.	6,440	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Average Unit Cost (\$/unit)		\$0.19661				
<b>Net Cost Savings</b>	<b>\$0</b>	<b>\$1,266</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**OPTION C SAVINGS - All other ECMs/Sites**

	ELECTRICITY (kWh)		GAS (Therms)		WATER (CCF)	
	AMP 001	AMP 002	AMP 001	AMP 002	AMP 001	AMP 002
Base Consumption	All electricity savings at AMP 001 are calculated using Option A.	1,064,537	All gas savings at AMP 001 are calculated using Option A.	177,693	18,391	20,951
Actual Consumption		934,421		168,621	8,361	11,956
Weather Adjustment		No Adjustment		7,083	No Adjustment	No Adjustment
Material Change Adjustment		(326,317)		(12,271)	1,291	(1,067)
Adjusted Consumption		608,104		163,432	9,652	10,889
Actual Utility Cost (\$)		\$92,272		\$151,370	\$86,662	\$122,484
Average Unit Cost (\$/unit)		\$0.19661		\$1.53615	\$10.58359	\$10.58359
Net Consumption Savings		456,433		14,261	8,739	10,062
Net % Consumption Savings		43%		8%	48%	48%
<b>Net Cost Savings</b>	<b>\$0</b>	<b>\$89,739</b>	<b>\$0</b>	<b>\$21,907</b>	<b>\$92,490</b>	<b>\$106,492</b>

**TOTAL SAVINGS BY UTILITY - ALL AMPS & SAVINGS METHODS COMBINED**

	ELECTRICITY (kWh)	GAS (Therms)	WATER (CCF)	TOTAL
Net Consumption Savings	776,625	34,887	18,801	
Net Cost Savings (\$)	\$154,444	\$56,837	\$198,982	\$410,263

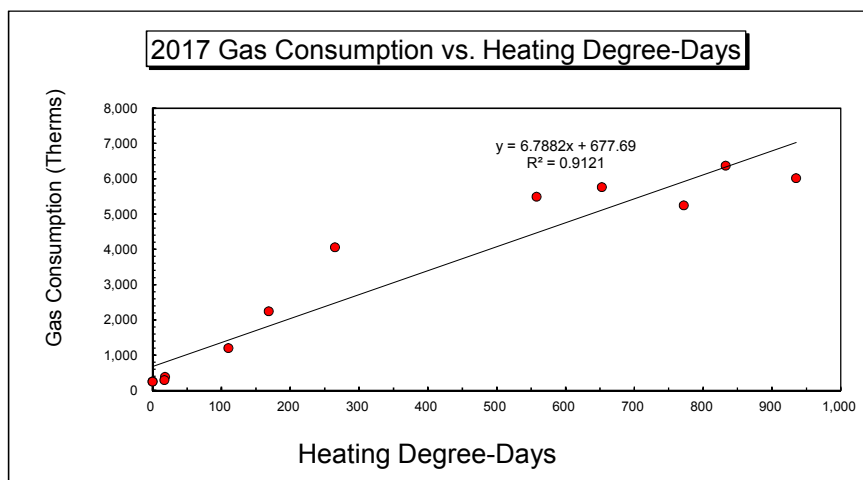
## 2017 Stern Towers

## Gas Consumption Adjustment

	Baseline Heating Deg-Days	2017 Heating Deg-Days	Heating Deg-Day Difference	Gas Consumption (Therms)	Gas Consumption Adjustment (Therms)	Adjusted Gas Consumption (Therms)
Jan	963	833	130	6,366	882	7,248
Feb	870	653	217	5,755	1,473	7,228
Mar	696	772	(76)	5,243	(514)	4,729
Apr	375	265	110	4,054	747	4,801
May	138	169	(31)	2,244	(213)	2,032
Jun	4	18	(14)	381	0	381
Jul	0	0	0	256	0	256
Aug	0	0	0	247	0	247
Sep	27	17	10	286	0	286
Oct	248	110	138	1,193	935	2,128
Nov	548	558	(10)	5,484	(68)	5,416
Dec	802	935	(133)	6,015	(903)	5,112
<b>TOTAL</b>	<b>4,671</b>	<b>4,330</b>	<b>341</b>	<b>37,525</b>	<b>2,315</b>	<b>39,864</b>

Weather Factor = 6.79 Therms / Deg-Day

Note: Adjustments not made for the months of June through September due to minimal consumption for space heating.



### Regression Output

Slope	Intercept
6.79	678

### Regression Coordinates:

x	y
963	7,215
870	6,583
696	5,405
375	3,223
138	1,612
4	707
0	678
0	678
27	861
248	2,359
548	4,398
802	6,122

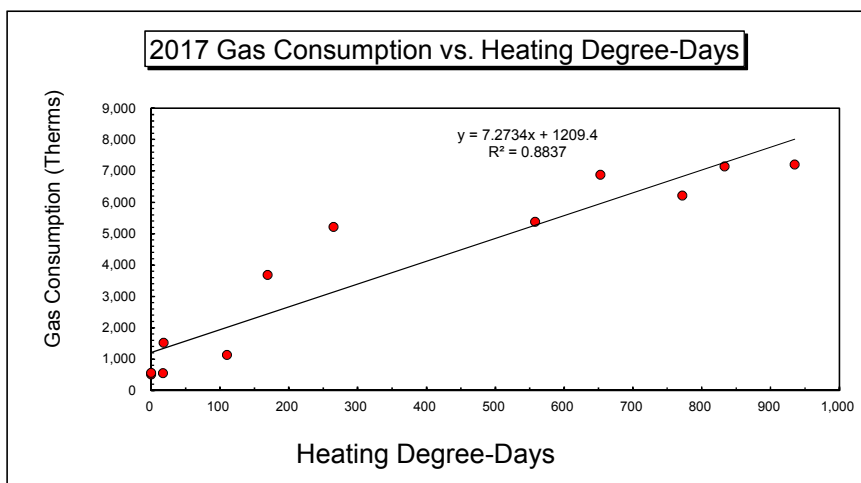
**2017 Olsen Towers**

**Gas Consumption Adjustment**

	Baseline Heating Deg-Days	2017 Heating Deg-Days	Heating Deg-Day Difference	Gas Consumption (Therms)	Gas Consumption Adjustment (Therms)	Adjusted Gas Consumption (Therms)
Jan	963	833	130	7,149	946	8,095
Feb	870	653	217	6,882	1,578	8,460
Mar	696	772	(76)	6,216	(550)	5,666
Apr	375	265	110	5,213	800	6,013
May	138	169	(31)	3,690	(228)	3,462
Jun	4	18	(14)	1,523	0	1,523
Jul	0	0	0	507	0	507
Aug	0	0	0	558	0	558
Sep	27	17	10	552	0	552
Oct	248	110	138	1,131	1,001	2,132
Nov	548	558	(10)	5,379	(73)	5,306
Dec	802	935	(133)	7,207	(967)	6,240
<b>TOTAL</b>	<b>4,671</b>	<b>4,330</b>	<b>341</b>	<b>46,006</b>	<b>2,480</b>	<b>48,514</b>

**Weather Factor = 7.27 Therms / Deg-Day**

*Note: Adjustments not made for the months of June through September due to minimal consumption for space heating.*



**Regression Output**

Slope	Intercept
7.27	1,209

**Regression Coordinates:**

x	y
963	8,214
870	7,537
696	6,274
375	3,937
138	2,211
4	1,241
0	1,209
0	1,209
27	1,406
248	3,011
548	5,195
802	7,043

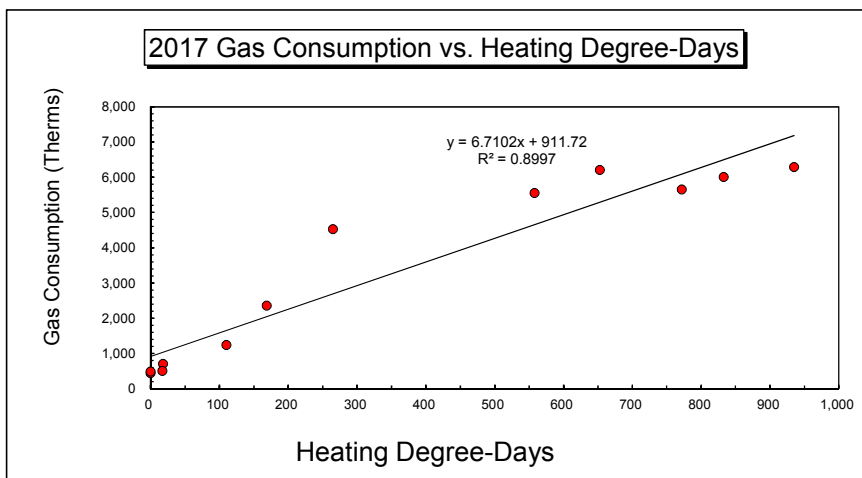
## 2017 Cooper Towers

## Gas Consumption Adjustment

	UY2008 Baseline Heating Deg-Days	2017 Heating Deg-Days	Heating Deg-Day Difference	Gas Consumption (Therms)	Gas Consumption Adjustment (Therms)	Adjusted Gas Consumption (Therms)
Jan	963	833	130	6,011	872	6,883
Feb	870	653	217	6,205	1,456	7,662
Mar	696	772	(76)	5,659	(508)	5,151
Apr	375	265	110	4,526	738	5,264
May	138	169	(31)	2,359	(210)	2,148
Jun	4	18	(14)	709	0	709
Jul	0	0	0	444	0	444
Aug	0	0	0	486	0	486
Sep	27	17	10	507	0	507
Oct	248	110	138	1,241	924	2,165
Nov	548	558	(10)	5,559	(67)	5,492
Dec	802	935	(133)	6,292	(892)	5,399
<b>TOTAL</b>	<b>4,671</b>	<b>4,330</b>	<b>341</b>	<b>39,996</b>	<b>2,288</b>	<b>42,309</b>

Weather Factor = 6.71 Therms / Deg-Day

Note: Adjustments not made for the months of June through September due to minimal consumption for space heating.



### Regression Output

Slope	Intercept
6.71	912

### Regression Coordinates:

x	y
963	7,374
870	6,750
696	5,584
375	3,428
138	1,835
4	941
0	912
0	912
27	1,093
248	2,574
548	4,589
802	6,293

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Calculation of Material Change Adjustment for Authority Paid Electricity Consumption - 2017

### NOTES:

- 1) Per Section 17.2 of the EPC (November 15, 2011) "...if water or energy consumption for any year increases by five percent (5%) or more from the water or energy consumption for the same month of the preceding Agreement year, then such increase shall be deemed to result from an unreported Material Change, except where such increase is due to Equipment malfunction, faulty repair or other acts of negligence by Company."
- 2) Per Section 17.3 of the EPC concerning adjustments for reported/unreported Material Changes: "...the amount of that increase may be subtracted from or that decrease shall be added to the total water/energy consumption, as appropriate according to Company, for that year prior to the calculation of Water/Energy Savings; and/or an adjustment may be made to the Company's Guaranteed Cost Savings."
- 3) If Material Change affected consumption in the same calendar month in the preceding year, the next preceding year where a Material Change has not occurred will be used to compute savings for the current month.
- 4) Per Larry Stecker's email dated 2/10/15, new boilers were installed in Cooper Towers in 2014, and new windows were installed in Stern, Adams and Finn Towers in 2014.

Comparative Year

	Stern Towers (NJ33-2)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Electricity Consumption (kWh)	22,160	23,120	22,880	19,520	24,640	31,360	34,400	36,160	25,760	22,000	22,880	25,040	309,920
2017 Electricity Consumption (kWh)	22,080	23,040	23,360	18,880	22,000	29,440	65,120	26,960	25,760	46,400	23,360	26,240	352,640
% Change in Consumption (2017 vs Comparative Year)	0%	0%	2%	-3%	-11%	-6%	89%	-25%	0%	111%	2%	5%	12%
Material Change Adjustment (kWh) (if % Change is greater than +/-5%)	NA	NA	NA	NA	2,640	1,920	(30,720)	9,200	NA	(24,400)	NA	NA	(41,360)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (kWh)</b>	0			4,560			(21,520)			(24,400)			(41,360)

	Adams Towers (NJ33-4)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013 Weather Adjusted Electricity Consumption (kWh)	22,052	27,710	33,554	11,878	10,662	11,800	17,000	17,200	8,400	6,380	9,309	27,438	203,383
2017 Weather Adjusted Electricity Consumption (kWh)	52,743	45,694	35,606	37,780	20,506	11,588	12,289	15,850	17,407	19,166	15,405	20,509	304,543
% Change in Consumption (2017 vs Comparative Year)	139%	65%	6%	218%	92%	-2%	-28%	-8%	107%	200%	65%	-25%	33%
Material Change Adjustment (kWh) (if % Change is greater than +/-5%)	(30,691)	(17,984)	(2,052)	(25,902)	(9,844)	NA	4,711	1,350	(9,007)	(12,786)	(6,096)	6,929	(101,372)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (kWh)</b>	(50,727)			(35,746)			(2,946)			(11,953)			(101,372)

	Finn Towers (NJ33-5)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013 Weather Adjusted Electricity Consumption (kWh)	31,961	34,335	32,555	16,613	14,262	18,200	19,200	17,400	13,400	17,868	32,730	35,472	283,996
2017 Weather Adjusted Electricity Consumption (kWh)	40,272	41,250	43,089	21,307	19,400	19,400	23,200	22,000	96,400	94,782	17,318	29,163	467,581
% Change in Consumption (2017 vs Comparative Year)	26%	20%	32%	28%	36%	7%	21%	26%	619%	430%	-47%	-18%	65%
Material Change Adjustment (kWh) (if % Change is greater than +/-5%)	(8,311)	(6,915)	(10,534)	(4,694)	(5,138)	(1,200)	(4,000)	(4,600)	(83,000)	(76,914)	15,412	6,309	(183,585)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (kWh)</b>	(25,760)			(11,032)			(91,600)			(55,193)			(183,585)

\*2014 data used due to abnormal 2013 data

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Calculation of Material Change Adjustment for Authority Paid Gas Consumption - 2017

**NOTES:**

- 1) Per Section 17.2 of the EPC (November 15, 2011) "...if water or energy consumption for any year increases by five percent (5%) or more from the water or energy consumption for the same month of the preceding Agreement year, then such increase shall be deemed to result from an unreported Material Change, except where such increase is due to Equipment malfunction, faulty repair or other acts of negligence by Company."
- 2) Per Section 17.3 of the EPC concerning adjustments for reported/unreported Material Changes: "...the amount of that increase may be subtracted from or that decrease shall be added to the total water/energy consumption, as appropriate according to Company, for that year prior to the calculation of Water/Energy Savings; and/or an adjustment may be made to the Company's Guaranteed Cost Savings."
- 3) If Material Change affected consumption in the same calendar month in the preceding year, the next preceding year where a Material Change has not occurred will be used to compute savings for the current month.
- 4) Per Larry Stecker's email dated 2/10/15, new boilers were installed in Cooper Towers in 2014, and new windows were installed in Stern, Adams and Finn Towers in 2014.

**Comparative Year**

	Olsen Towers (NJ33-3.6)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Weather Adjusted Gas Consumption (Therms)	6,741	7,462	7,356	5,191	3,493	571	422	421	434	1,717	4,593	5,939	44,340
2017 Weather Adjusted Gas Consumption (Therms)	8,095	8,460	5,666	6,013	3,462	1,523	507	558	552	2,132	5,306	6,240	48,514
% Change in Consumption (2017 vs Comparative Year)	20%	13%	-23%	16%	-1%	167%	20%	33%	27%	24%	16%	5%	9%
Material Change Adjustment (Therms) (if % Change is greater than +/-5%)	(1,354)	(998)	1,690	(822)	NA	(952)	(85)	(138)	(118)	(415)	(713)	(301)	(4,205)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (Therms)</b>	<b>(662)</b>			<b>(1,774)</b>			<b>(340)</b>			<b>(1,429)</b>			<b>(4,205)</b>

	Cooper Towers (NJ33-3.9)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013 Weather Adjusted Gas Consumption (Therms)	5,793	6,470	4,819	3,550	2,134	888	427	446	537	1,509	3,342	5,851	35,766
2017 Weather Adjusted Gas Consumption (Therms)	6,883	7,662	5,151	5,264	2,148	709	444	486	507	2,165	5,492	5,399	42,309
% Change in Consumption (2017 vs Comparative Year)	19%	18%	7%	48%	1%	-20%	4%	9%	-6%	43%	64%	-8%	15%
Material Change Adjustment (Therms) (if % Change is greater than +/-5%)	(1,090)	(1,192)	(332)	(1,714)	NA	180	NA	(40)	30	(656)	(2,150)	452	(6,513)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (Therms)</b>	<b>(2,614)</b>			<b>(1,534)</b>			<b>(10)</b>			<b>(2,354)</b>			<b>(6,513)</b>

	Greiner Towers (NJ33-7)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013 Weather Adjusted Gas Consumption (Therms)	5,569	5,995	4,278	2,995	2,070	492	356	434	475	2,227	3,654	6,195	34,741
2017 Weather Adjusted Gas Consumption (Therms)	6,327	6,958	5,289	6,202	3,527	2,244	892	367	415	1,164	2,222	4,892	40,499
% Change in Consumption (2017 vs Comparative Year)	14%	16%	24%	107%	70%	356%	150%	-15%	-13%	-48%	-39%	-21%	14%
Material Change Adjustment (Therms) (if % Change is greater than +/-5%)	(758)	(963)	(1,011)	(3,207)	(1,457)	(1,752)	(536)	67	61	1,063	1,432	1,303	(5,759)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (Therms)</b>	<b>(2,732)</b>			<b>(6,416)</b>			<b>(408)</b>			<b>3,798</b>			<b>(5,759)</b>

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Calculation of Material Change Adjustment for Authority Paid Water Consumption - 2017

### NOTES:

- 1) Per Section 17.2 of the EPC (November 15, 2011) "...if water or energy consumption for any year increases by five percent (5%) or more from the water or energy consumption for the same month of the preceding Agreement year, then such increase shall be deemed to result from an unreported Material Change, except where such increase is due to Equipment malfunction, faulty repair or other acts of negligence by Company."
- 2) Per Section 17.3 of the EPC concerning adjustments for reported/unreported Material Changes: "...the amount of that increase may be subtracted from or that decrease shall be added to the total water/energy consumption, as appropriate according to Company, for that year prior to the calculation of Water/Energy Savings; and/or an adjustment may be made to the Company's Guaranteed Cost Savings."
- 3) If Material Change affected consumption in the same calendar month in the preceding year, the next preceding year where a Material Change has has not occurred will be used to compute savings for the current month.

Comparative Year

	Woodbridge Garden Apts (NJ33-1)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Water Consumption (CCF)	824	728	992	784	828	787	789	851	766	811	754	738	9,652
2017 Water Consumption (CCF)	782	684	737	668	784	675	697	686	626	718	650	654	8,361
% Change in Consumption (2017 vs Comparative Year)	-5%	-6%	-26%	-15%	-5%	-14%	-12%	-19%	-18%	-11%	-14%	-11%	-15%
Material Change Adjustment (CCF) (if % Change is greater than +/-5%)	42	44	255	116	44	112	92	165	140	93	104	84	1,291
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (CCF)</b>	341			272			397			281			1,291

	Stern Towers (NJ33-2)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Water Consumption (CCF)	124	122	137	136	109	115	133	117	127	131	115	136	1,502
2017 Water Consumption (CCF)	147	137	168	133	127	133	127	158	122	176	289	137	1,854
% Change in Consumption (2017 vs Comparative Year)	19%	12%	23%	-2%	17%	16%	-5%	35%	-4%	34%	151%	1%	19%
Material Change Adjustment (CCF) (if % Change is greater than +/-5%)	(23)	(15)	(31)	NA	(18)	(18)	NA	(41)	NA	(45)	(174)	NA	(365)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (CCF)</b>	(69)			(36)			(41)			(219)			(365)

	Adams Towers (NJ33-4)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Water Consumption (CCF)	107	89	94	106	98	110	114	96	119	97	95	102	1,227
2017 Water Consumption (CCF)	106	105	100	120	106	124	116	102	131	99	100	120	1,329
% Change in Consumption (2017 vs Comparative Year)	-1%	18%	6%	13%	8%	13%	2%	6%	10%	2%	5%	18%	8%
Material Change Adjustment (CCF) (if % Change is greater than +/-5%)	NA	(16)	(6)	(14)	(8)	(14)	NA	(6)	(12)	NA	(5)	(18)	(99)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (CCF)</b>	(22)			(36)			(18)			(23)			(99)

	Finn Towers (NJ33-5)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014 Water Consumption (CCF)	135	131	115	119	131	128	128	134	130	130	155	144	1,580
2017 Water Consumption (CCF)	164	173	181	173	139	156	147	129	159	131	131	175	1,858
% Change in Consumption (2017 vs Comparative Year)	21%	32%	57%	45%	6%	22%	15%	-4%	22%	1%	-15%	22%	15%
Material Change Adjustment (CCF) (if % Change is greater than +/-5%)	(29)	(42)	(66)	(54)	(8)	(28)	(19)	NA	(29)	NA	24	(31)	(282)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (CCF)</b>	(137)			(90)			(48)			(7)			(282)

	Greiner Towers (NJ33-7)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016 Water Consumption (CCF)	152	126	137	151	137	157	149	142	165	144	160	148	1,768
2017 Water Consumption (CCF)	194	189	148	176	150	167	149	159	147	179	234	197	2,089
% Change in Consumption (2016 vs Comparative Year)	28%	50%	8%	17%	9%	6%	0%	12%	-11%	24%	46%	33%	15%
Material Change Adjustment (CCF) (if % Change is greater than +/-5%)	(42)	(63)	(11)	(25)	(13)	(10)	NA	(17)	18	(35)	(74)	(49)	(321)
<b>MATERIAL CHANGE ADJUSTMENT TOTALS (CCF)</b>	(116)			(48)			1			(158)			(321)

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Utility Bill Summary by Site - 2017

### NOTES:

- 1) Woodbridge Gardens Apts data includes the Community Center.
- 2) Adams Tower electrical data excludes Fire Pump and Railway Ave Outside Lights
- 3) Greiner Towers gas baseline value is from Energy Audit. Billing errors in 2009 and 2010 resulted in a greatly reduced EPC baseline.
- 4) Monthly Sprinkler Costs are fixed costs and thus not included in rates used for savings calculations.

Data Corrected  
Data Missing/Estimate

#### Woodbridge Garden Apts (NJ33-1)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	1,541	782	\$4,020.47	\$3,952.08	\$7,972.55	\$10.195	37,559	17,623	\$12,049.34	\$0.684	79,920	73,062	\$10,576.19	\$0.145
Feb	1,608	684	\$3,837.73	\$3,456.80	\$7,294.53	\$10.665	40,212	17,838	\$11,775.13	\$0.660	91,356	68,292	\$10,190.51	\$0.149
Mar	1,405	737	\$3,835.05	\$3,724.65	\$7,559.70	\$10.257	32,985	14,079	\$9,367.42	\$0.665	55,838	63,831	\$9,978.66	\$0.156
<b>1ST QTR</b>	<b>4,554</b>	<b>2,203</b>	<b>\$11,693.25</b>	<b>\$11,133.53</b>	<b>\$22,826.78</b>	<b>\$10.362</b>	<b>110,756</b>	<b>49,540</b>	<b>\$33,191.89</b>	<b>\$0.670</b>	<b>227,114</b>	<b>205,185</b>	<b>\$30,745.36</b>	<b>\$0.150</b>
Apr	1,454	668	\$3,544.43	\$3,375.94	\$6,920.37	\$10.360	23,288	9,755	\$6,715.70	\$0.688	75,948	56,894	\$9,477.59	\$0.167
May	1,557	784	\$4,028.82	\$3,962.18	\$7,991.00	\$10.193	7,976	5,750	\$4,302.62	\$0.748	72,264	64,496	\$12,734.52	\$0.197
Jun	1,460	675	\$3,573.55	\$3,411.32	\$6,984.87	\$10.348	4,184	4,111	\$3,270.63	\$0.796	85,200	107,076	\$15,791.92	\$0.147
<b>2ND QTR</b>	<b>4,471</b>	<b>2,127</b>	<b>\$11,146.90</b>	<b>\$10,749.44</b>	<b>\$21,896.34</b>	<b>\$10.294</b>	<b>35,448</b>	<b>19,615</b>	<b>\$14,268.95</b>	<b>\$0.728</b>	<b>233,412</b>	<b>228,465</b>	<b>\$38,004.03</b>	<b>\$0.166</b>
Jul	1,546	697	\$3,665.52	\$3,522.50	\$7,188.02	\$10.313	4,029	3,493	\$2,945.86	\$0.843	122,894	99,015	\$15,184.52	\$0.153
Aug	1,575	686	\$3,619.59	\$3,466.91	\$7,086.50	\$10.330	3,895	3,192	\$2,884.00	\$0.903	136,877	63,025	\$13,162.34	\$0.209
Sep	1,639	626	\$3,396.19	\$3,163.68	\$6,559.87	\$10.479	4,344	3,528	\$3,019.21	\$0.856	116,910	69,377	\$9,876.10	\$0.142
<b>3RD QTR</b>	<b>4,760</b>	<b>2,009</b>	<b>\$10,681.30</b>	<b>\$10,153.09</b>	<b>\$20,834.39</b>	<b>\$10.371</b>	<b>12,268</b>	<b>10,214</b>	<b>\$8,849.09</b>	<b>\$0.866</b>	<b>376,681</b>	<b>231,417</b>	<b>\$38,222.96</b>	<b>\$0.165</b>
Oct	1,369	718	\$3,778.69	\$3,628.63	\$7,407.32	\$10.317	9,050	3,139	\$3,311.90	\$1.055	90,084	54,954	\$8,388.66	\$0.153
Nov	1,780	650	\$3,545.09	\$3,284.97	\$6,830.06	\$10.508	21,966	9,165	\$7,527.26	\$0.821	74,213	57,100	\$8,952.84	\$0.157
Dec	1,457	654	\$3,562.26	\$3,305.19	\$6,867.45	\$10.501	40,968	12,515	\$9,996.74	\$0.799	80,609	76,156	\$11,054.88	\$0.145
<b>4TH QTR</b>	<b>4,606</b>	<b>2,022</b>	<b>\$10,886.04</b>	<b>\$10,218.79</b>	<b>\$21,104.83</b>	<b>\$10.438</b>	<b>71,984</b>	<b>24,819</b>	<b>\$20,835.90</b>	<b>\$0.840</b>	<b>244,906</b>	<b>188,209</b>	<b>\$28,396.38</b>	<b>\$0.151</b>
<b>TOTALS</b>	<b>18,391</b>	<b>8,361</b>	<b>\$44,407.49</b>	<b>\$42,254.86</b>	<b>\$86,662.35</b>	<b>\$10.365</b>	<b>230,456</b>	<b>104,188</b>	<b>\$77,165.83</b>	<b>\$0.741</b>	<b>1,082,113</b>	<b>853,277</b>	<b>\$135,368.73</b>	<b>\$0.159</b>

#### Stern Towers (NJ33-2)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	241	147	\$991.34	\$548.96	\$1,540.30	\$10.478	5,246	6,366	\$5,680.97	\$0.892	31,333	22,080	\$2,927.48	\$0.133
Feb	244	137	\$949.59	\$511.62	\$1,461.21	\$10.666	5,297	5,755	\$5,024.51	\$0.873	29,093	23,040	\$3,064.23	\$0.133
Mar	234	168	\$1,079.03	\$627.39	\$1,706.42	\$10.157	12,771	5,243	\$4,191.90	\$0.800	15,600	23,360	\$3,118.24	\$0.133
<b>1ST QTR</b>	<b>719</b>	<b>452</b>	<b>\$3,019.96</b>	<b>\$1,687.97</b>	<b>\$4,707.93</b>	<b>\$10.416</b>	<b>23,314</b>	<b>17,364</b>	<b>\$14,897.38</b>	<b>\$0.858</b>	<b>76,026</b>	<b>68,480</b>	<b>\$9,109.95</b>	<b>\$0.133</b>
Apr	249	133	\$932.89	\$496.68	\$1,429.57	\$10.749	4,477	4,054	\$3,425.14	\$0.845	32,587	18,880	\$2,795.07	\$0.148
May	248	127	\$907.82	\$474.28	\$1,382.10	\$10.883	1,724	2,244	\$2,104.12	\$0.937	22,400	22,000	\$3,805.35	\$0.173
Jun	225	133	\$932.88	\$496.68	\$1,429.56	\$10.749	396	381	\$687.10	\$1.803	24,720	29,440	\$4,439.88	\$0.151
<b>2ND QTR</b>	<b>722</b>	<b>393</b>	<b>\$2,773.59</b>	<b>\$1,467.64</b>	<b>\$4,241.23</b>	<b>\$10.792</b>	<b>6,597</b>	<b>6,680</b>	<b>\$6,216.36</b>	<b>\$0.931</b>	<b>79,707</b>	<b>70,320</b>	<b>\$11,040.30</b>	<b>\$0.157</b>
Jul	210	127	\$907.82	\$474.28	\$1,382.10	\$10.883	377	256	\$580.17	\$2.269	30,400	65,120	\$4,591.17	\$0.071
Aug	236	158	\$1,037.27	\$590.04	\$1,627.31	\$10.299	238	247	\$584.12	\$2.368	34,453	26,960	\$3,885.12	\$0.144
Sep	239	122	\$896.95	\$455.60	\$1,352.55	\$11.005	305	296	\$613.51	\$2.143	29,993	25,760	\$2,969.97	\$0.115
<b>3RD QTR</b>	<b>684</b>	<b>407</b>	<b>\$2,832.04</b>	<b>\$1,519.92</b>	<b>\$4,351.96</b>	<b>\$10.693</b>	<b>920</b>	<b>789</b>	<b>\$1,777.80</b>	<b>\$2.254</b>	<b>94,746</b>	<b>117,840</b>	<b>\$11,446.26</b>	<b>\$0.097</b>
Oct	230	176	\$1,119.81	\$657.26	\$1,777.07	\$10.097	1,629	1,193	\$1,297.27	\$1.087	23,973	46,400	\$2,425.72	\$0.052
Nov	242	289	\$1,618.02	\$1,079.26	\$2,697.28	\$9.333	6,086	5,484	\$4,423.56	\$0.807	23,813	23,360	\$2,870.40	\$0.123
Dec	253	137	\$965.56	\$511.62	\$1,477.18	\$10.782	7,021	6,015	\$4,966.02	\$0.826	23,813	26,240	\$3,287.31	\$0.125
<b>4TH QTR</b>	<b>725</b>	<b>602</b>	<b>\$3,703.39</b>	<b>\$2,248.14</b>	<b>\$5,951.53</b>	<b>\$9.886</b>	<b>14,736</b>	<b>12,693</b>	<b>\$10,686.85</b>	<b>\$0.842</b>	<b>71,599</b>	<b>96,000</b>	<b>\$8,583.43</b>	<b>\$0.089</b>
<b>TOTALS</b>	<b>2,850</b>	<b>1,854</b>	<b>\$12,328.98</b>	<b>\$6,923.68</b>	<b>\$19,252.66</b>	<b>\$10.384</b>	<b>45,567</b>	<b>37,525</b>	<b>\$33,578.39</b>	<b>\$0.895</b>	<b>322,078</b>	<b>352,640</b>	<b>\$40,179.94</b>	<b>\$0.114</b>

#### Olsen Towers (NJ33-3.6)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	342	165	\$1,066.51	\$358.01	\$1,424.52	\$8.633	8,221	7,149	\$6,275.69	\$0.878	20,320	30,840	\$3,135.21	\$0.102
Feb	307	169	\$1,020.57	\$366.69	\$1,387.26	\$8.209	6,493	6,882	\$6,004.93	\$0.873	34,551	6,300	\$3,135.21	\$0.498
Mar	337	167	\$1,028.92	\$362.35	\$1,391.27	\$8.331	5,264	6,216	\$4,979.70	\$0.801	28,044	17,600	\$2,209.87	\$0.126
<b>1ST QTR</b>	<b>986</b>	<b>501</b>	<b>\$3,116.00</b>	<b>\$1,087.06</b>	<b>\$4,203.06</b>	<b>\$8.389</b>	<b>21,978</b>	<b>20,247</b>	<b>\$17,260.32</b>	<b>\$0.852</b>	<b>82,915</b>	<b>54,740</b>	<b>\$8,480.29</b>	<b>\$0.155</b>
Apr	311	181	\$1,175.07	\$392.73	\$1,567.80	\$8.662	5,721	5,213	\$4,275.55	\$0.820	30,098	27,760	\$3,616.24	\$0.130
May	330	187	\$1,133.32	\$405.75	\$1,539.07	\$8.230	1,871	3,690	\$3,224.76	\$0.874	27,493	23,840	\$3,101.69	\$0.130
Jun	340	181	\$1,212.66	\$392.73	\$1,605.39	\$8.870	590	1,523	\$1,580.37	\$1.037	31,093	35,520	\$4,707.72	\$0.133
<b>2ND QTR</b>	<b>981</b>	<b>549</b>	<b>\$3,521.05</b>	<b>\$1,191.21</b>	<b>\$4,712.26</b>	<b>\$8.583</b>	<b>8,182</b>	<b>10,426</b>	<b>\$9,080.68</b>	<b>\$0.871</b>	<b>88,684</b>	<b>87,120</b>	<b>\$11,425.65</b>	<b>\$0.131</b>
Jul	318	163	\$1,204.32	\$353.67	\$1,557.99	\$9.558	567	507	\$805.22	\$1.589	38,080	37,840	\$4,568.54	\$0.121
Aug	313	163	\$1,120.80	\$353.67	\$1,474.47	\$9.046	712	558	\$840.95	\$1.507	30,107	41,360	\$3,644.27	\$0.088
Sep	330	147	\$1,158.37	\$318.96	\$1,477.33	\$10.050	655	552	\$850.13	\$1.541	10,560	41,360	\$3,644.27	\$0.088
<b>3RD QTR</b>	<b>961</b>	<b>473</b>	<b>\$3,483.49</b>	<b>\$1,026.31</b>	<b>\$4,509.80</b>	<b>\$9.534</b>	<b>1,934</b>	<b>1,617</b>	<b>\$2,496.30</b>	<b>\$1.544</b>	<b>78,747</b>	<b>120,560</b>	<b>\$11,857.08</b>	<b>\$0.098</b>
Oct	304	170	\$1,271.12	\$368.86	\$1,639.98	\$9.647	1,779	1,131	\$1,274.49	\$1.127	70,080	29,120	\$1,650.17	\$0.057
Nov	316	222	\$1,517.92	\$481.69	\$1,999.61	\$9.007	4,998	5,379	\$4,395.69	\$0.817	20,907	35,000	\$1,983.37	\$0.057
Dec	350	245	\$1,368.51	\$531.60	\$1,900.11	\$7.756	7,350	7,207	\$5,837.46	\$0.810	49,627	30,000	\$1,700.03	\$0.057
<b>4TH QTR</b>	<b>970</b>	<b>637</b>	<b>\$4,157.55</b>	<b>\$1,382.15</b>	<b>\$5,539.70</b>	<b>\$8.697</b>	<b>14,127</b>	<b>13,717</b>	<b>\$11,507.64</b>	<b>\$0.839</b>	<b>140,614</b>	<b>94,120</b>	<b>\$5,333.57</b>	<b>\$0.057</b>
<b>TOTALS</b>	<b>3,898</b>	<b>2,160</b>	<b>\$14,278.09</b>	<b>\$4,686.73</b>	<b>\$18,964.82</b>	<b>\$8.780</b>	<b>46,221</b>	<b>46,006</b>	<b>\$40,344.94</b>	<b>\$0.877</b>	<b>390,960</b>	<b>356,540</b>	<b>\$37,096.59</b>	<b>\$0.104</b>

#### Cooper Towers (NJ33-3.9)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	426	240	\$1,379.70	\$1,179.31	\$2,559.01	\$10.663	7,382	6,011	\$5,426.56	\$0.903	25,425	32,265	\$3,862.22	\$0.120
Feb	399	241	\$1,383.86	\$1,184.23	\$2,568.09	\$10.656	5,464	6,205	\$5,403.16	\$0.871	36,795	31,320	\$3,876.20	\$0.124
Mar	373	196	\$1,195.96	\$963.10	\$2,159.06	\$11.016	5,090	5,659	\$4,505.30	\$0.796	31,830	31,455	\$3,916.91	\$0.125
1ST QTR	1,198	677	\$3,959.52	\$3,326.64	\$7,286.16	\$10.762	17,936	17,875	\$15,335.02	\$0.858	94,050	95,040	\$11,655.33	\$0.123
Apr	434	287	\$1,575.95	\$1,410.26	\$2,986.21	\$10.405	4,137	4,526	\$3,815.35	\$0.843	53,100	28,575	\$3,773.55	\$0.132
May	384	243	\$1,392.21	\$1,194.05	\$2,586.26	\$10.643	1,720	2,359	\$2,219.62	\$0.941	29,700	26,415	\$3,625.67	\$0.137
Jun	411	274	\$1,521.66	\$1,346.38	\$2,868.04	\$10.467	703	709	\$967.94	\$1.366	34,710	31,680	\$4,267.07	\$0.135
2ND QTR	1,229	804	\$4,489.82	\$3,950.69	\$8,440.51	\$10.498	6,560	7,593	\$7,002.91	\$0.922	117,510	86,670	\$11,666.29	\$0.135
Jul	412	212	\$1,262.77	\$1,041.73	\$2,304.50	\$10.870	691	444	\$470.94	\$1.735	31,275	35,347	\$4,347.49	\$0.151
Aug	379	212	\$1,262.77	\$1,041.73	\$2,304.50	\$10.870	636	486	\$797.90	\$1.643	30,735	55,305	\$6,940.14	\$0.125
Sep	296	189	\$1,166.72	\$928.71	\$2,095.43	\$11.087	709	507	\$814.51	\$1.606	17,355	32,985	\$4,894.49	\$0.148
3RD QTR	1,087	613	\$3,692.26	\$3,012.16	\$6,704.42	\$10.937	2,036	1,437	\$2,382.45	\$1.658	133,365	123,660	\$17,182.12	\$0.139
Oct	536	173	\$1,099.91	\$850.09	\$1,950.00	\$11.272	1,640	1,241	\$1,371.32	\$1.105	56,970	22,465	\$2,853.65	\$0.127
Nov	284	216	\$1,298.10	\$1,061.38	\$2,359.48	\$10.924	5,777	5,559	\$4,511.94	\$0.812	30,630	25,020	\$3,082.82	\$0.123
Dec	406	183	\$1,163.02	\$899.23	\$2,062.25	\$11.269	6,906	6,292	\$5,221.06	\$0.830	24,300	42,615	\$4,823.35	\$0.113
4TH QTR	1,226	572	\$3,561.03	\$2,810.69	\$6,371.72	\$11.139	14,323	13,091	\$11,104.32	\$0.848	111,900	90,090	\$10,759.82	\$0.119
TOTALS	4,740	2,666	\$15,702.63	\$13,100.19	\$28,802.82	\$10.804	40,855	39,996	\$35,824.70	\$0.896	456,825	395,460	\$51,263.56	\$0.130

## HATW Utility Bill Summary by Site - 2017 (continued)

### Adams Towers (NJ33-4)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	384	106	\$669.14	\$602.79	\$1,271.93	\$11.999	No Baseline: Before EPC, all appliances and heating used electricity.	321	\$344.35	\$1.074	45,725	49,520	\$4,622.00	\$0.093
Feb	397	105	\$664.96	\$597.10	\$1,262.06	\$12.020		304	\$318.99	\$1.049	51,294	40,314	\$4,088.48	\$0.101
Mar	384	100	\$644.08	\$568.67	\$1,212.75	\$12.128		279	\$276.48	\$0.991	50,149	37,482	\$3,819.56	\$0.102
<b>1ST QTR</b>	<b>1,165</b>	<b>311</b>	<b>\$1,978.18</b>	<b>\$1,768.57</b>	<b>\$3,746.75</b>	<b>\$12.047</b>		<b>904</b>	<b>\$939.82</b>	<b>\$1.040</b>	<b>147,168</b>	<b>127,316</b>	<b>\$12,530.04</b>	<b>\$0.098</b>
Apr	375	120	\$727.60	\$682.40	\$1,410.00	\$11.750		290	\$291.37	\$1.004	41,986	35,053	\$3,726.90	\$0.106
May	335	106	\$669.14	\$602.79	\$1,271.93	\$11.999		234	\$252.91	\$1.079	33,002	20,506	\$2,560.54	\$0.125
Jun	362	124	\$744.30	\$705.15	\$1,449.45	\$11.689		202	\$229.40	\$1.138	25,164	11,588	\$2,072.38	\$0.179
<b>2ND QTR</b>	<b>1,072</b>	<b>350</b>	<b>\$2,141.04</b>	<b>\$1,990.35</b>	<b>\$4,131.39</b>	<b>\$11.804</b>		<b>726</b>	<b>\$773.68</b>	<b>\$1.066</b>	<b>100,152</b>	<b>67,147</b>	<b>\$8,359.82</b>	<b>\$0.129</b>
Jul	346	116	\$710.89	\$659.66	\$1,370.55	\$11.815		160	\$199.92	\$1.250	24,574	12,289	\$2,048.08	\$0.167
Aug	353	102	\$652.43	\$580.04	\$1,232.47	\$12.083		170	\$208.72	\$1.226	25,231	15,850	\$2,488.94	\$0.157
Sep	265	131	\$773.53	\$744.96	\$1,518.49	\$11.592		187	\$220.94	\$1.184	25,353	17,407	\$2,425.60	\$0.139
<b>3RD QTR</b>	<b>964</b>	<b>349</b>	<b>\$2,136.85</b>	<b>\$1,984.66</b>	<b>\$4,121.51</b>	<b>\$11.809</b>		<b>517</b>	<b>\$629.58</b>	<b>\$1.218</b>	<b>75,158</b>	<b>45,546</b>	<b>\$6,962.62</b>	<b>\$0.153</b>
Oct	277	99	\$638.90	\$562.98	\$1,202.88	\$12.150		179	\$217.27	\$1.216	21,835	15,753	\$1,812.85	\$0.115
Nov	420	100	\$649.69	\$568.67	\$1,218.36	\$12.184		266	\$277.93	\$1.047	27,629	15,653	\$1,727.84	\$0.110
Dec	442	120	\$741.60	\$682.40	\$1,424.00	\$11.867		281	\$296.23	\$1.055	42,842	23,806	\$2,602.33	\$0.109
<b>4TH QTR</b>	<b>1,139</b>	<b>319</b>	<b>\$2,031.19</b>	<b>\$1,814.06</b>	<b>\$3,845.25</b>	<b>\$12.054</b>		<b>725</b>	<b>\$791.43</b>	<b>\$1.092</b>	<b>92,306</b>	<b>55,212</b>	<b>\$6,143.02</b>	<b>\$0.111</b>
<b>TOTALS</b>	<b>4,340</b>	<b>1,329</b>	<b>\$8,287.26</b>	<b>\$7,557.63</b>	<b>\$15,844.89</b>	<b>\$11.922</b>		<b>2,872</b>	<b>\$3,134.51</b>	<b>\$1.092</b>	<b>414,784</b>	<b>295,221</b>	<b>\$33,995.50</b>	<b>\$0.115</b>

### Finn Towers (NJ33-5)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	246	164	\$1,062.33	\$497.62	\$1,559.95	\$9.512	No Baseline: Before EPC, all appliances and heating used electricity.	394	\$404.84	\$1.027	53,080	41,800	\$4,321.53	\$0.103
Feb	186	173	\$1,099.91	\$524.93	\$1,624.84	\$9.392		351	\$356.58	\$1.017	54,075	43,800	\$4,417.56	\$0.101
Mar	194	181	\$1,133.32	\$549.20	\$1,682.52	\$9.296		338	\$319.28	\$0.944	57,851	42,200	\$4,405.52	\$0.104
<b>1ST QTR</b>	<b>626</b>	<b>518</b>	<b>\$3,295.56</b>	<b>\$1,571.75</b>	<b>\$4,867.31</b>	<b>\$9.396</b>		<b>1,083</b>	<b>\$1,080.70</b>	<b>\$0.998</b>	<b>165,006</b>	<b>127,800</b>	<b>\$13,144.61</b>	<b>\$0.103</b>
Apr	220	173	\$1,099.91	\$524.93	\$1,624.84	\$9.392		340	\$328.51	\$0.966	47,977	22,600	\$2,767.37	\$0.122
May	217	139	\$957.94	\$421.76	\$1,379.70	\$9.926		285	\$291.61	\$1.023	35,133	19,400	\$2,967.48	\$0.153
Jun	199	156	\$1,028.92	\$473.34	\$1,502.26	\$9.630		273	\$284.27	\$1.041	28,947	19,400	\$2,774.81	\$0.143
<b>2ND QTR</b>	<b>636</b>	<b>468</b>	<b>\$3,086.77</b>	<b>\$1,420.03</b>	<b>\$4,506.80</b>	<b>\$9.630</b>		<b>898</b>	<b>\$904.39</b>	<b>\$1.007</b>	<b>112,057</b>	<b>61,400</b>	<b>\$8,509.66</b>	<b>\$0.139</b>
Jul	214	147	\$991.34	\$446.04	\$1,437.38	\$9.778		221	\$245.60	\$1.122	26,600	23,200	\$3,082.07	\$0.133
Aug	220	129	\$916.18	\$391.42	\$1,307.60	\$10.136		218	\$243.65	\$1.120	26,400	22,000	\$2,955.42	\$0.134
Sep	211	159	\$1,041.44	\$482.45	\$1,523.89	\$9.584		235	\$256.72	\$1.092	26,800	96,400	\$1,555.88	\$0.016
<b>3RD QTR</b>	<b>645</b>	<b>435</b>	<b>\$2,948.96</b>	<b>\$1,319.90</b>	<b>\$4,268.86</b>	<b>\$9.813</b>		<b>674</b>	<b>\$745.97</b>	<b>\$1.107</b>	<b>79,800</b>	<b>141,600</b>	<b>\$7,593.37</b>	<b>\$0.054</b>
Oct	243	131	\$924.43	\$397.49	\$1,321.92	\$10.091		231	\$256.74	\$1.110	24,467	96,400	\$1,555.88	\$0.016
Nov	236	131	\$932.52	\$397.49	\$1,330.01	\$10.153		312	\$312.04	\$1.000	29,910	17,200	\$1,945.35	\$0.113
Dec	197	175	\$1,128.68	\$531.00	\$1,659.68	\$9.484		341	\$341.66	\$1.003	46,813	27,600	\$2,961.98	\$0.107
<b>4TH QTR</b>	<b>676</b>	<b>437</b>	<b>\$2,985.63</b>	<b>\$1,325.97</b>	<b>\$4,311.60</b>	<b>\$9.866</b>		<b>884</b>	<b>\$910.44</b>	<b>\$1.030</b>	<b>101,190</b>	<b>141,200</b>	<b>\$6,463.21</b>	<b>\$0.046</b>
<b>TOTALS</b>	<b>2,583</b>	<b>1,858</b>	<b>\$12,316.92</b>	<b>\$5,637.65</b>	<b>\$17,954.57</b>	<b>\$9.663</b>		<b>3,538</b>	<b>\$3,641.50</b>	<b>\$1.029</b>	<b>458,053</b>	<b>472,000</b>	<b>\$35,710.85</b>	<b>\$0.076</b>

### Greiner Towers (NJ33-7)

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	249	194	\$1,187.60	\$777.13	\$1,964.73	\$10.127	6,343	5,643	\$4,733.03	\$0.839	12,955	16,200	\$1,868.50	\$0.115
Feb	230	189	\$1,166.72	\$757.10	\$1,923.82	\$10.179	7,204	5,815	\$5,255.04	\$0.904	12,769	15,200	\$1,759.86	\$0.116
Mar	187	148	\$935.52	\$592.86	\$1,528.38	\$10.732	6,783	5,687	\$4,951.16	\$0.871	18,161	15,000	\$1,812.94	\$0.121
<b>1ST QTR</b>	<b>666</b>	<b>531</b>	<b>\$3,349.84</b>	<b>\$2,127.10</b>	<b>\$5,476.94</b>	<b>\$10.314</b>	<b>20,331</b>	<b>17,145</b>	<b>\$14,939.23</b>	<b>\$0.871</b>	<b>43,885</b>	<b>46,400</b>	<b>\$5,441.30</b>	<b>\$0.117</b>
Apr	168	176	\$1,112.44	\$705.03	\$1,817.47	\$10.327	5,529	5,624	\$4,434.08	\$0.788	18,104	14,800	\$1,813.67	\$0.123
May	173	150	\$1,003.88	\$600.88	\$1,604.76	\$10.698	1,969	3,692	\$3,184.55	\$0.863	17,076	10,400	\$1,351.44	\$0.130
Jun	157	167	\$1,074.85	\$668.97	\$1,743.82	\$10.442	610	2,244	\$2,421.16	\$1.079	19,766	12,600	\$1,883.32	\$0.149
<b>2ND QTR</b>	<b>498</b>	<b>493</b>	<b>\$3,191.17</b>	<b>\$1,974.88</b>	<b>\$5,166.05</b>	<b>\$10.479</b>	<b>8,109</b>	<b>11,559</b>	<b>\$10,039.79</b>	<b>\$0.869</b>	<b>54,946</b>	<b>37,800</b>	<b>\$5,048.43</b>	<b>\$0.134</b>
Jul	404	149	\$999.69	\$596.87	\$1,596.56	\$10.715	898	682	\$1,085.13	\$1.216	15,267	13,600	\$1,547.06	\$0.143
Aug	146	159	\$1,041.45	\$636.93	\$1,678.38	\$10.556	868	367	\$688.73	\$1.875	15,276	12,600	\$1,921.47	\$0.152
Sep	166	147	\$991.34	\$588.86	\$1,580.20	\$10.750	693	415	\$721.11	\$1.740	16,163	12,000	\$3,395.25	\$0.283
<b>3RD QTR</b>	<b>716</b>	<b>455</b>	<b>\$3,032.48</b>	<b>\$1,822.66</b>	<b>\$4,855.14</b>	<b>\$10.671</b>	<b>2,459</b>	<b>1,674</b>	<b>\$2,494.97</b>	<b>\$1.490</b>	<b>46,706</b>	<b>38,200</b>	<b>\$7,263.78</b>	<b>\$0.190</b>
Oct	213	179	\$1,124.97	\$717.04	\$1,842.01	\$10.291	2,037	439	\$740.09	\$1.685	15,830	12,200	\$1,305.38	\$0.107
Nov	231	234	\$1,374.31	\$937.37	\$2,311.68	\$9.879	6,680	2,274	\$2,123.76	\$0.934	17,869	15,600	\$1,615.29	\$0.104
Dec	216	197	\$1,223.10	\$789.15	\$2,012.25	\$10.214	5,435	5,592	\$4,507.71	\$0.806	12,464	17,000	\$1,891.79	\$0.111
<b>4TH QTR</b>	<b>660</b>	<b>610</b>	<b>\$3,722.38</b>	<b>\$2,443.56</b>	<b>\$6,165.94</b>	<b>\$10.108</b>	<b>14,151</b>	<b>8,305</b>	<b>\$7,371.56</b>	<b>\$0.888</b>	<b>46,163</b>	<b>44,800</b>	<b>\$4,812.46</b>	<b>\$0.107</b>
<b>TOTALS</b>	<b>2,540</b>	<b>2,089</b>	<b>\$13,295.87</b>	<b>\$8,368.19</b>	<b>\$21,664.06</b>	<b>\$10.371</b>	<b>45,050</b>	<b>38,683</b>	<b>\$34,845.55</b>	<b>\$0.901</b>	<b>191,700</b>	<b>167,200</b>	<b>\$22,565.97</b>	<b>\$0.135</b>

### TOTALS

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	3,429	1,798	\$10,377.09	\$7,915.91	\$21,929.74	\$12.197	64,751	43,507	\$34,914.78	\$0.803	268,758	265,767	\$31,313.13	\$0.118
Feb	3,371	1,698	\$10,123.34	\$7,398.47	\$21,158.55	\$12.461	66,670	43,150	\$34,138.34	\$0.791	309,933	228,266	\$30,532.05	\$0.134
Mar	3,114	1,697	\$9,911.88	\$7,388.24	\$20,936.86	\$12.338	62,893	37,500	\$28,591.24	\$0.762	257,473	230,928	\$29,261.70	\$0.127
1ST QTR	9,914	5,193	\$30,412.31	\$22,702.62	\$64,025.15	\$12.329	194,315	124,157	\$97,644.36	\$0.786	836,164	724,961	\$91,106.88	\$0.126
Apr	3,211	1,738	\$10,168.29	\$7,587.97	\$21,393.00	\$12.309	43,152	29,801	\$23,285.70	\$0.781	299,800	204,562	\$27,970.39	\$0.137
May	3,244	1,736	\$10,093.13	\$7,661.69	\$21,391.56	\$12.322	15,260	18,253	\$15,580.19	\$0.854	237,068	187,057	\$30,146.69	\$0.161
Jun	3,154	1,710	\$10,088.92	\$7,494.58	\$21,220.24	\$12.409	6,483	9,443	\$9,440.87	\$1.000	249,600	247,304	\$35,937.10	\$0.145
2ND QTR	9,609	5,184	\$30,350.34	\$22,744.24	\$64,004.80	\$12.347	64,896	57,497	\$48,306.76	\$0.840	786,468	638,922	\$94,054.18	\$0.147
Jul	3,450	1,611	\$9,742.35	\$7,094.74	\$20,473.83	\$12.709	6,562	5,973	\$6,631.96	\$1.110	289,090	286,434	\$36,768.93	\$0.128
Aug	3,222	1,609	\$9,650.49	\$7,060.74	\$20,347.97	\$12.646	6,349	5,238	\$6,248.07	\$1.193	299,079	237,100	\$34,997.70	\$0.148
Sep	3,145	1,521	\$9,414.54	\$6,683.21	\$19,738.66	\$12.977	6,706	5,709	\$6,496.13	\$1.138	297,034	259,289	\$28,761.56	\$0.097
3RD QTR	9,817	4,741	\$28,807.38	\$20,838.70	\$60,560.47	\$12.774	19,617	16,920	\$19,376.16	\$1.145	885,203	818,823	\$100,528.19	\$0.123
Oct	3,172	1,646	\$9,958.83	\$7,182.36	\$20,782.17	\$12.626	16,135	7,554	\$8,469.08	\$1.121	303,239	277,282	\$19,992.31	\$0.072
Nov	3,359	1,842	\$10,935.65	\$7,810.83	\$22,406.25	\$12.164	45,507	28,439	\$23,572.18	\$0.829	224,971	188,933	\$22,177.91	\$0.117
Dec	3,021	1,711	\$10,152.73	\$7,250.18	\$21,048.16	\$12.302	67,680	38,242	\$31,166.88	\$0.815	280,468	243,417	\$28,321.67	\$0.116
4TH QTR	10,002	5,199	\$31,047.21	\$22,243.37	\$64,236.58	\$12.356	129,321	74,234	\$63,208.14	\$0.851	806,673	709,631	\$70,491.89	\$0.099
TOTALS	39,342	20,317	\$120,617.24	\$88,528.93	\$252,827.00	\$12.444	408,149	272,809	\$228,535.42	\$0.838	3,116,513	2,892,338	\$356,181.14	\$0.123

## HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

### Utility Bill Summary by AMP - 2017

#### NOTES:

- 1) Woodbridge Gardens Apts data includes the Community Center.
- 2) Adams Tower electrical data excludes Fire Pump and Rahway Ave Outside Lights
- 3) Greiner Towers gas baseline value is from Energy Audit. Billing errors in 2009 and 2010 resulted in a greatly reduced EPC baseline.
- 4) Monthly Sprinkler Costs are fixed costs and thus not included in rates used for savings calculations.

#### AMP 1 - Woodbridge Garden Apts

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	1,541	782	\$4,020.47	\$3,952.08	\$7,972.55	\$10.195	37,559	17,623	\$12,049.34	\$0.684	79,920	73,062	\$10,576.19	\$0.145
Feb	1,608	684	\$3,837.73	\$3,456.80	\$7,294.53	\$10.665	40,212	17,838	\$11,775.13	\$0.660	91,356	68,292	\$10,190.51	\$0.149
Mar	1,405	737	\$3,835.05	\$3,724.65	\$7,559.70	\$10.257	32,985	14,079	\$9,367.42	\$0.665	55,838	63,831	\$9,978.66	\$0.156
1ST QTR	4,554	2,203	\$11,693.25	\$11,133.53	\$22,826.78	\$10.362	110,756	49,540	\$33,191.89	\$0.670	227,114	205,185	\$30,745.36	\$0.150
Apr	1,454	668	\$3,544.43	\$3,375.94	\$6,920.37	\$10.360	23,288	9,755	\$6,715.70	\$0.688	75,948	56,894	\$9,477.59	\$0.167
May	1,557	784	\$4,028.82	\$3,962.18	\$7,991.00	\$10.193	7,976	5,750	\$4,302.62	\$0.748	72,264	64,496	\$12,734.52	\$0.197
Jun	1,460	675	\$3,573.85	\$3,411.32	\$6,984.97	\$10.348	4,164	4,111	\$3,270.63	\$0.796	85,200	107,076	\$15,791.92	\$0.147
2ND QTR	4,471	2,127	\$11,146.90	\$10,749.44	\$21,896.34	\$10.294	35,448	19,615	\$14,288.95	\$0.728	233,412	228,465	\$38,004.03	\$0.166
Jul	1,546	697	\$3,665.52	\$3,522.50	\$7,188.02	\$10.313	4,029	3,493	\$2,945.88	\$0.843	122,894	99,015	\$15,184.52	\$0.153
Aug	1,575	686	\$3,619.59	\$3,466.91	\$7,086.50	\$10.330	3,895	3,192	\$2,884.00	\$0.903	136,877	63,025	\$13,162.34	\$0.209
Sep	1,639	626	\$3,396.19	\$3,163.68	\$6,559.87	\$10.479	4,344	3,528	\$3,019.21	\$0.856	116,910	69,377	\$9,876.10	\$0.142
3RD QTR	4,760	2,009	\$10,681.30	\$10,153.09	\$20,834.39	\$10.371	12,268	10,214	\$8,849.09	\$0.866	376,681	231,417	\$36,222.96	\$0.165
Oct	1,369	718	\$3,778.69	\$3,628.63	\$7,407.32	\$10.317	9,050	3,139	\$3,311.90	\$1.055	90,084	54,954	\$8,388.66	\$0.153
Nov	1,780	650	\$3,545.09	\$3,284.97	\$6,830.06	\$10.508	7,966	9,165	\$7,527.26	\$0.821	74,213	57,100	\$8,952.84	\$0.157
Dec	1,457	654	\$3,662.26	\$3,305.19	\$6,967.45	\$10.501	40,968	12,515	\$9,996.74	\$0.799	80,609	76,156	\$11,054.88	\$0.145
4TH QTR	4,606	2,022	\$10,886.04	\$10,218.79	\$21,104.83	\$10.438	71,984	24,819	\$20,835.90	\$0.840	244,906	188,209	\$28,396.38	\$0.151
TOTALS	18,391	8,361	\$44,407.49	\$42,254.86	\$86,662.35	\$10.365	230,456	104,188	\$77,165.83	\$0.741	1,082,113	853,277	\$135,368.73	\$0.159

#### AMP 2 - Stern, Olsen, Cooper, Adams, Finn, Greiner Towers

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	1,888	1,016	\$6,356.62	\$3,963.83	\$10,320.45	\$10.158	27,192	25,884	\$22,865.44	\$0.883	188,838	192,705	\$20,736.94	\$0.108
Feb	1,763	1,014	\$6,285.61	\$3,941.67	\$10,227.28	\$10.086	26,458	25,312	\$22,363.21	\$0.884	218,577	159,974	\$20,341.54	\$0.127
Mar	1,709	960	\$6,076.83	\$3,863.58	\$9,940.41	\$10.146	29,908	23,422	\$19,223.82	\$0.821	201,635	167,097	\$19,283.04	\$0.115
1ST QTR	5,360	2,990	\$18,719.06	\$11,569.09	\$30,288.15	\$10.130	83,559	74,617	\$64,452.47	\$0.864	609,050	519,776	\$60,361.52	\$0.116
Apr	1,757	1,070	\$6,623.86	\$4,212.03	\$10,835.89	\$10.127	19,864	20,047	\$16,570.00	\$0.827	223,852	147,668	\$18,492.80	\$0.125
May	1,687	952	\$6,064.31	\$3,699.51	\$9,763.82	\$10.256	7,284	12,504	\$11,277.57	\$0.902	164,804	122,561	\$17,412.17	\$0.142
Jun	1,694	1,035	\$6,515.27	\$4,083.26	\$10,598.53	\$10.240	2,299	5,332	\$6,170.24	\$1.157	164,400	140,228	\$20,145.18	\$0.144
2ND QTR	5,138	3,057	\$19,203.44	\$11,994.80	\$31,198.24	\$10.206	29,448	37,882	\$34,017.81	\$0.898	553,056	410,457	\$56,050.15	\$0.137
Jul	1,904	914	\$6,076.83	\$3,572.24	\$9,649.07	\$10.557	2,533	2,479	\$3,686.08	\$1.467	166,196	187,419	\$21,584.41	\$0.115
Aug	1,847	923	\$6,030.90	\$3,593.83	\$9,624.73	\$10.428	2,454	2,046	\$3,364.07	\$1.645	162,202	174,075	\$21,835.36	\$0.125
Sep	1,506	895	\$6,018.35	\$3,519.53	\$9,537.88	\$10.657	2,362	2,181	\$3,476.92	\$1.594	180,124	225,912	\$18,885.46	\$0.084
3RD QTR	5,057	2,732	\$18,126.08	\$10,685.61	\$28,811.69	\$10.546	7,349	6,706	\$10,527.07	\$1.570	508,522	587,406	\$62,305.23	\$0.106
Oct	1,803	928	\$6,180.14	\$3,553.73	\$9,733.87	\$10.489	7,085	4,414	\$5,157.18	\$1.168	213,155	222,328	\$11,603.65	\$0.052
Nov	1,729	1,192	\$7,390.56	\$4,525.85	\$11,916.41	\$9.997	23,541	19,273	\$16,044.92	\$0.832	150,758	131,833	\$13,225.07	\$0.100
Dec	1,864	1,057	\$6,590.47	\$3,944.99	\$10,535.46	\$9.967	26,712	25,727	\$21,170.14	\$0.823	199,859	167,261	\$17,266.79	\$0.103
4TH QTR	5,396	3,177	\$20,161.17	\$12,024.58	\$32,185.75	\$10.131	57,337	49,415	\$42,372.24	\$0.857	563,772	621,422	\$42,095.51	\$0.081
TOTALS	20,951	11,956	\$76,209.75	\$46,274.07	\$122,483.82	\$10.245	177,693	168,621	\$151,369.59	\$0.898	2,234,400	2,039,061	\$220,812.41	\$0.108

#### TOTALS

	WATER (CCF)						GAS (Therms)				ELECTRICITY (kWh)			
	Base Consumption	Actual Consumption	Water Cost	Sewer Cost	Total Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate	Base Consumption	Actual Consumption	Cost	Rate
Jan	3,429	1,798	\$10,377.09	\$7,915.91	\$21,929.74	\$12.197	64,751	43,507	\$34,914.78	\$0.803	268,758	265,767	\$31,313.13	\$0.118
Feb	3,371	1,698	\$10,123.34	\$7,398.47	\$21,158.55	\$12.461	66,670	43,150	\$34,138.34	\$0.791	309,933	228,266	\$30,532.05	\$0.134
Mar	3,114	1,697	\$9,911.88	\$7,388.24	\$20,936.86	\$12.338	62,893	37,500	\$28,591.24	\$0.762	257,473	230,928	\$29,261.70	\$0.127
1ST QTR	9,914	5,193	\$30,412.31	\$22,702.62	\$64,025.15	\$12.329	194,315	124,157	\$97,644.36	\$0.786	836,164	724,961	\$91,106.88	\$0.126
Apr	3,211	1,738	\$10,168.29	\$7,587.97	\$21,393.00	\$12.309	43,152	29,801	\$23,285.70	\$0.781	299,800	204,562	\$27,970.39	\$0.137
May	3,244	1,736	\$10,093.13	\$7,861.69	\$21,391.56	\$12.322	15,280	18,253	\$15,580.19	\$0.854	237,068	187,057	\$30,148.69	\$0.161
Jun	3,154	1,710	\$10,088.92	\$7,494.58	\$21,220.24	\$12.409	6,483	9,443	\$9,440.87	\$1.000	249,600	247,304	\$35,937.10	\$0.145
2ND QTR	9,609	5,184	\$30,350.34	\$22,744.24	\$64,004.80	\$12.347	64,896	57,497	\$48,306.76	\$0.840	786,468	638,922	\$94,054.18	\$0.147
Jul	3,450	1,611	\$9,742.35	\$7,094.74	\$20,473.83	\$12.709	6,562	5,973	\$6,631.96	\$1.110	289,090	286,434	\$36,768.93	\$0.128
Aug	3,222	1,609	\$9,650.49	\$7,060.74	\$20,347.97	\$12.646	6,349	5,236	\$6,248.07	\$1.193	299,079	237,100	\$34,997.70	\$0.148
Sep	3,145	1,521	\$9,414.54	\$6,683.21	\$19,735.66	\$12.977	6,706	5,709	\$6,496.13	\$1.138	297,034	295,289	\$36,761.56	\$0.097
3RD QTR	9,817	4,741	\$28,807.38	\$20,838.70	\$60,560.47	\$12.774	19,617	16,920	\$19,376.16	\$1.145	885,203	818,823	\$100,528.19	\$0.123
Oct	3,172	1,646	\$9,958.83	\$7,182.36	\$20,782.17	\$12.626	16,135	7,554	\$8,469.08	\$1.121	303,239	277,282	\$19,992.31	\$0.072
Nov	3,509	1,842	\$10,935.65	\$7,810.83	\$22,406.25	\$12.164	45,507	28,439	\$23,572.18	\$0.829	224,971	188,933	\$22,177.91	\$0.117
Dec	3,321	1,711	\$10,152.73	\$7,250.18	\$21,048.16	\$12.302	67,680	38,242	\$31,166.88	\$0.815	280,468	243,417	\$28,321.67	\$0.116
4TH QTR	10,002	5,199	\$31,047.21	\$22,243.37	\$64,236.58	\$12.356	129,321	74,234	\$63,208.14	\$0.851	808,678	709,631	\$70,491.89	\$0.099
TOTALS	39,342	20,317	\$120,617.24	\$88,528.93	\$252,827.00	\$12.444	408,149	272,809	\$228,535.42	\$0.838	3,316,513	2,892,338	\$356,181.14	\$0.123

# HOUSING AUTHORITY OF THE TOWNSHIP OF WOODBRIDGE

## Daily Per Resident Water Consumption (Gal/Resident/Day)

**NOTES:**

- 1) Target consumption level should be less than 50 gal/resident/day.
- 2) Water systems should be analyzed if average consumption exceeds 50 gal/resident/day.
- 3) Averages for UY2007 to UY2011 included for comparison purposes.
- 4) HUD Utility Year (UY) is July to June. Baseline is from UY2007 to UY2009.

< 25 gal/resident/day	too low
61-75 gal/resident/day	moderately high
76-90 gal/resident/day	high
> 90 gal/resident/day	very high

Baseline								
Site #	AMP #	Site Name	Total Number of Residents (Audit 9/2011)	1st Quarter (Jan-Mar 07-09)	2nd Quarter (Apr-Jun 07-09)	3rd Quarter (Jul-Sep 06-08)	4th Quarter (Oct-Dec 06-08)	Annual (UY07-UY09)
NJ33-01.0	001	Woodbridge Garden Apts	364	104	101	106	103	103
NJ33-02.0	002	Stern Towers	69	86	86	81	85	85
NJ33-03.6	002	Olsen Towers	83	98	97	94	95	96
NJ33-03.9	002	Cooper Towers	94	106	107	94	106	103
NJ33-04.0	002	Adams Towers	65	139	134	120	153	137
NJ33-05.0	002	Finn Towers	74	70	71	71	74	71
NJ33-07.0	002	Greiner Towers	88	63	46	66	61	59
TOTAL / OVERALL AVERAGES			837	97	94	95	98	96

2013								
Site #	AMP #	Site Name	Total Number of Residents (Audit 9/2011)	1st Quarter (Jan-Mar)	2nd Quarter (Apr-Jun)	3rd Quarter (Jul-Sep)	4th Quarter (Oct-Dec)	Annual Average
NJ33-01.0	001	Woodbridge Garden Apts	364	53	56	56	51	54
NJ33-02.0	002	Stern Towers	69	50	44	47	54	49
NJ33-03.6	002	Olsen Towers	83	51	54	46	62	53
NJ33-03.9	002	Cooper Towers	94	107	100	83	73	90
NJ33-04.0	002	Adams Towers	65	42	55	49	44	47
NJ33-05.0	002	Finn Towers	74	44	44	40	42	42
NJ33-07.0	002	Greiner Towers	88	46	45	44	46	45
TOTAL / OVERALL AVERAGES			837	56	57	54	53	55

2014								
Site #	AMP #	Site Name	Total Number of Residents (2/2015)	1st Quarter (Jan-Mar)	2nd Quarter (Apr-Jun)	3rd Quarter (Jul-Sep)	4th Quarter (Oct-Dec)	Annual Average
NJ33-01.0	001	Woodbridge Garden Apts	393	48	50	48	49	49
NJ33-02.0	002	Stern Towers	69	42	41	43	57	46
NJ33-03.6	002	Olsen Towers	85	57	53	45	61	54
NJ33-03.9	002	Cooper Towers	99	92	86	63	64	76
NJ33-04.0	002	Adams Towers	66	44	53	67	44	52
NJ33-05.0	002	Finn Towers	75	42	41	42	47	43
NJ33-07.0	002	Greiner Towers	87	56	46	44	43	47
TOTAL / OVERALL AVERAGES			874	53	53	50	51	52

2015								
Site #	AMP #	Site Name	Total Number of Residents (2/2015)	1st Quarter (Jan-Mar)	2nd Quarter (Apr-Jun)	3rd Quarter (Jul-Sep)	4th Quarter (Oct-Dec)	Annual Average
NJ33-01.0	001	Woodbridge Garden Apts	393	53	51	52	57	53
NJ33-02.0	002	Stern Towers	69	46	43	44	45	44
NJ33-03.6	002	Olsen Towers	85	42	53	45	61	50
NJ33-03.9	002	Cooper Towers	99	59	69	53	58	60
NJ33-04.0	002	Adams Towers	66	42	38	38	36	39
NJ33-05.0	002	Finn Towers	75	48	43	47	45	46
NJ33-07.0	002	Greiner Towers	87	45	44	45	41	43
TOTAL / OVERALL AVERAGES			874	49	50	48	52	50

2016								
Site #	AMP #	Site Name	Total Number of Residents (2/2015)	1st Quarter (Jan-Mar)	2nd Quarter (Apr-Jun)	3rd Quarter (Jul-Sep)	4th Quarter (Oct-Dec)	Annual Average
NJ33-01.0	001	Woodbridge Garden Apts	393	54	50	50	48	50
NJ33-02.0	002	Stern Towers	69	46	44	50	53	48
NJ33-03.6	002	Olsen Towers	85	49	53	45	61	52
NJ33-03.9	002	Cooper Towers	99	76	71	55	61	65
NJ33-04.0	002	Adams Towers	66	37	39	41	36	38
NJ33-05.0	002	Finn Towers	75	48	47	47	45	47
NJ33-07.0	002	Greiner Towers	87	40	42	43	42	42
TOTAL / OVERALL AVERAGES			874	51	50	48	49	50

2017								
Site #	AMP #	Site Name	Total Number of Residents (2/2015)	1st Quarter (Jan-Mar)	2nd Quarter (Apr-Jun)	3rd Quarter (Jul-Sep)	4th Quarter (Oct-Dec)	Annual Average
NJ33-01.0	001	Woodbridge Garden Apts	393	47	44	42	42	43
NJ33-02.0	002	Stern Towers	69	54	47	48	71	55
NJ33-03.6	002	Olsen Towers	85	49	53	45	61	52
NJ33-03.9	002	Cooper Towers	99	57	67	50	47	55
NJ33-04.0	002	Adams Towers	66	39	44	43	39	41
NJ33-05.0	002	Finn Towers	75	57	51	47	47	51
NJ33-07.0	002	Greiner Towers	87	51	47	43	57	49
TOTAL / OVERALL AVERAGES			874	49	49	44	48	48

