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Technical Memorandum

To: Michael Preziosi, P.E., Chris Kehoe, AICP – Town of Cortlandt

From: Libby Cohen

Date: March 24, 2017

Re: Montauk Bus Garage Facility – Noise Impact Study

cc: Marissa Tarallo, P.E / Daniel Abatemarco, AKRF

A. INTRODUCTION

The noise analysis considers the noise levels that would be produced by vehicle trips associated with the proposed site plan for the Montauk Bus Garage Facility (the Proposed Project), and whether that noise could result in significant adverse noise impacts on the surrounding area. The noise impact assessment examines noise generated by traffic traveling to and from the Facility. The impact assessment included noise level measurements to noise levels in the existing condition, as well as projections of future noise levels from traffic associated with the Proposed Project based on the results of a traffic study. The projected future noise levels based on the projected future levels of traffic with the Proposed Project were compared to existing-condition noise levels to determine the noise level increment that would result from the Proposed Project. Both the project-generated noise level increments and the total noise levels in the future with the Proposed Project were evaluated using applicable local and State noise regulations and impact criteria.

Noise associated with the Facility's mechanical systems (e.g., HVAC equipment, etc.) was not analyzed, as no changes are proposed to the existing building mechanical systems as part of the Proposed Project.

The noise analysis concludes the Proposed Project would result in increased noise levels at nearby receptors, but the increases would be in the range that is considered imperceptible to barely perceptible and is below the threshold that would necessitate mitigation according to NYSDEC impact evaluation guidance. Furthermore, the Proposed Project would not result in exceedances of the Town of Cortlandt noise control law's restrictions on noise. Pursuant to the New York State Department of Environmental Conservation (NYSDEC) noise guidance document, operation of the Proposed Project would not be expected to result in significant adverse noise impacts at residences in the vicinity of the project site or along routes used by vehicular traffic associated with the Facility.

B. NOISE FUNDAMENTALS AND METHODOLOGY

NOISE FUNDAMENTALS

GENERAL EFFECTS

Quantitative information on the effects of airborne noise on humans is well documented. If sufficiently loud, noise may adversely affect humans in several ways. For example, noise may interfere with human activities, such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Although it is possible to study these effects on humans on an average or statistical basis, it must be remembered that all the stated effects of noise vary greatly with the individual. Several noise scales and rating methods are used to quantify the effects of noise on humans. These scales and methods consider such factors as loudness, duration, time of occurrence, and changes in noise level with time.

"A"-WEIGHTED SOUND LEVEL (DBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on humans, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. Frequency is the rate at which sound pressures fluctuate in a cycle over a given quantity of time, and is measured in Hertz (Hz), where 1 Hz equals 1 cycle per second. Frequency defines sound in terms of pitch components. In the measurement system, one of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network—known as A-weighting—that simulates response of the human ear. For most noise assessments, the A-weighted sound pressure level in dBA units is used in view of its widespread recognition and its close correlation with perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in **Table 1**.

COMMUNITY RESPONSE TO CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well documented (see **Table 2**). Generally, changes in noise levels less than 3 dBA are barely perceptible to most listeners, whereas 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table 1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	
Busy city street, loud shout	80
Busy traffic intersection	
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas or residential areas close to industry	
Background noise in an office	50
Suburban areas with medium density transportation	
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Source: Cowan, James P. Handbook of Environmental Acoustics. Van Nostrand Reinhold. New York. 1994.
Egan, M. David. Architectural Acoustics. McGraw-Hill Book Company. 1988.

Table 2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt, Beranek and Newman, Inc. *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration. June 1973.

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment and very few noises are constant, other ways of describing noise over extended periods have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq}, can be computed. L_{eq} is the constant sound level that, in a given situation and time period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted as $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are used to indicate noise levels that are exceeded 1, 10, 50, 90 and x percent of the time, respectively. Discrete event peak levels are given as L_1 levels. L_{eq} is used in the prediction of future noise levels, by adding the contributions from new sources of noise (i.e., increases in traffic volumes) to the existing levels and in relating annoyance to increases in noise levels.

The relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, L_{eq} will approximate L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50}. The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at all receptor locations.

For the purposes of this analysis, the maximum one-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor used by most governmental agencies, including the New York State Department of Environmental Conservation (NYSDEC) for noise impact evaluation, and is used to provide an indication of highest expected sound levels.

NOISE STANDARDS AND IMPACT CRITERIA

TOWN OF CORTLANDT NOISE CONTROL LAW

The Town of Cortlandt noise control law, Chapter 197 of the Town Code of Cortlandt, prohibits "unnecessary noise," which is defined as "any excessive or unusually loud sound or any sound which either annoys, disturbs, injures, or endangers the comfort, repose, health, peace or safety of a person or which causes injury to animal life or damage to property or business." The law puts forth specific noise level limits for residential and commercial districts, which are shown in **Table 3**.

Table 3
Cortlandt Town Code Specified Noise Level Limits (in dBA)

Time of Day	Noise Level Limit for Residential Districts	Noise Level Limit for Commercial Districts
8AM to 6PM	65	65
6PM to 8AM	55	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NYSDEC has published a policy and guidance document, *Assessing and Mitigating Noise Impacts* (DEP-00-1, February 2, 2001), which presents noise impact assessment methods, identifies thresholds for significant impacts, and discusses potential avoidance and mitigative measures to reduce or eliminate noise impacts.[1]

NYSDEC's guidance document sets forth thresholds that can be used in determining whether a noise increase due to a project may constitute a significant adverse impact, noting that these thresholds should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances. According to DEP-00-1:

- Increases in noise ranging from 0 to 3 dBA should have no appreciable effect on receptors;
- Increases of 3 to 6 dBA may have the potential for adverse impacts only in cases where the most sensitive of receptors (e.g., hospital or school) are present;
- Increases of more than 6 dBA may require a closer analysis of impact potential depending on existing noise levels and the character of surrounding land use and receptors; and
- Increases of 10 dBA or greater deserve consideration of avoidance and mitigation measures in most cases.

[1] http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf.

The guidance document also sets forth noise thresholds that can be used in identifying whether a noise level due to a project should be considered a significant adverse impact. According to the guidance, the addition of any noise source in a non-industrial setting should not raise the ambient noise level above a maximum of 65 dBA, and ambient noise levels in industrial or commercial areas may exceed 65 dBA with a high end of approximately 79 dBA. As set forth in the guidance, projects that exceed these levels should explore the feasibility of implementing mitigation.

PROJECT IMPACT CRITERIA

For purposes of this impact assessment, operations that would result in an increase of more than 6 dBA in ambient $L_{eq(1)}$ noise levels at receptor sites and produce ambient noise levels of more than 65 dBA between the hours of 8AM and 6PM or 55 dBA between the hours of 6PM and 8AM at residences will be considered to be a significant adverse noise impact resulting from the Proposed Project. These criteria are consistent with the Town of Cortlandt noise control law and the NYSDEC guidance document.

METHODOLOGY

This assessment examines noise associated with the Proposed Project due to vehicular traffic.

Mobile sources constitute vehicles arriving at and departing from the project site. Proportional modeling was used to determine locations that had the potential for having significant noise impacts and to quantify the magnitude of those potential impacts.

Using this technique, the prediction of future noise levels, where traffic is the dominant noise source, is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine Future without the Proposed Project (No Build) and future with the Proposed Project (Build) levels. Vehicular traffic volumes are converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$\text{FB NL} - \text{EX NL} = 10 * \log_{10} (\text{FB PCE} / \text{EX PCE})$$

where:

FB NL = Future Build Noise Level

EX NL = Existing Noise Level

FB PCE = Future Build PCEs

EX PCE = Existing PCEs

Sound levels are measured in decibels. They increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE, and the future traffic volume increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

The analysis of vehicular traffic noise focused on the hours of peak traffic generation as identified in the traffic analysis. These included the AM peak hour (6:30 to 9:30 AM) and PM peak period (2 to 6 PM).

C. EXISTING CONDITIONS

SITE DESCRIPTION

The project site is located at 301 6th Street in the Hamlet of Verplanck (Town of Cortlandt), New York.

SELECTION OF NOISE RECEPTOR LOCATIONS

Noise from operation of the Proposed Project was analyzed at two locations near the project site (shown in **Figure 1**):

- Site 1: Along 6th Street between Highland Avenue to the east and the project site to the west. Existing noise measurements were conducted here on February 13 and 14, 2017.
- Site 2: At the corner of 11th Street and Broadway. Existing noise measurements were conducted here on February 14, 2017.

These locations represent the noise-sensitive land uses that would be most likely to experience noise level increases due to the Proposed Project because they are located along routes that would be used by vehicular traffic (including buses) accessing the Facility. Other sensitive land uses (i.e., residences, schools, open spaces) in the area would be expected to experience less noise resulting from the Proposed Project than these sites.

NOISE MONITORING

The locations of the measurements are shown below in **Figure 1.** A 24-hour continuous noise level measurement, which logged data every 15 minutes, was performed at site 1 starting at 4 PM on Monday, February 13, 2017. A simultaneous 1-hour spot measurement was performed at site 2 starting at 04 PM on Tuesday, February 14, 2017.

EQUIPMENT USED FOR NOISE MONITORING

Measurements were performed using Brüel & Kjær Sound Level Meter (SLM) Types 2270 (S/N 2449975) and 2260 (S/N 2001692), Brüel & Kjær Type 4189 ½-inch microphones (S/Ns 2453498 and 2919919), and a Brüel & Kjær Sound Level Calibrator Type 4231 (S/N 2688762). The SLMs have laboratory calibration dates within one year of the measurement, as is standard practice. The Brüel & Kjær SLMs are a Type 1 instrument according to American National Standards Institute (ANSI) Standard S1.4-1983 (R2006). At each receptor site, the instrument was mounted at least 5 feet above grade. The microphone was mounted at least 6 feet away from any large reflecting surfaces. The SLM was field checked before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements were made on the A-scale (dBA). The data were digitally recorded by the SLM. Measured quantities included the $L_{eq(1)}$ values. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

RESULTS OF MEASUREMENTS

Noise levels at receptor sites 1 and 2 were measured as described above. Hourly L_{eq} noise levels at site 1 were used in conjunction with the simultaneous 1-hour spot measurement at site 2 to establish a 24-hour sound level profile at site 2.The results of the existing L_{eq} noise level measurements are summarized in **Table 4.** Existing noise levels for both sites including L_1, L_{10}, L_{50}, L_{90}, instantaneous minimum (L_{min}), and instantaneous maximum (L_{max}) noise levels are included as an attachment to this memorandum.

Table 4
Existing Noise Levels at Sites 1 and 2 (in dBA)

Start Time	Site 1 $L_{eq(1)}$	Site 2 $L_{eq(1)}$[1]
5 PM	56.9	70.8
6 PM	52.8	66.6
7 PM	49.1	63.0
8 PM	50.0	63.8
9 PM	48.6	62.5
10 PM	53.2	67.1
11 PM	47.7	61.6
12 AM	42.1	55.9
1 AM	41.4	55.3
2 AM	49.8	63.7
3 AM	46.1	60.0
4 AM	36.6	50.5
5 AM	511	65.0
6 AM	58.3	72.2
7 AM	58.7	72.6
8 AM	54.0	67.9
9 AM	57.8	71.7
10 AM	55.9	69.8
11 AM	53.7	67.6
12 PM	54.4	68.3
1 PM	59.0	72.9
2 PM	57.5	71.4
3 PM	55.8	69.7
4 PM	53.0	66.9

Notes: [1]Noise levels at Site 2 were measured for 1 hour starting at 4 PM on February 14, 2017. The hourly noise levels at other times were established by prorating the measured level from the spot measurement based on the simultaneously measured 24-hour noise level measurement at site 1.
[2]Field measurements were performed by AKRF, Inc. on February 13 through February 14, 2017.

As shown in **Table 4**, $L_{eq(1)}$, noise levels at site 1 ranged from relatively low to moderately high depending on the time of day. Existing noise levels at sites 1 and 2 exceeded the Town of Cortlandt noise control law limit during the night-time hours (i.e., between 6 PM and 8 AM), while noise levels at site 2 exceeded the Town of Cortlandt noise control law limit during the day-time hours (i.e., between 8 AM and 6 PM). The dominant noise source at both measurement locations was vehicular traffic on the adjacent roadways, and noise levels reflect the level of traffic on these roadways. Because the measured existing noise levels at both sites exceed the Town of Cortlandt noise control law limits during hours outside of the operation of the existing depot, the exceedances are attributable to general vehicular traffic rather than bus traffic associated with the existing depot.

The maximum measured existing one-hour $L_{eq(1h)}$ at each receptor during each traffic peak period was used to represent existing noise levels at that receptor during that period.

D. THE FUTURE WITHOUT THE PROPOSED PROJECT

Using the methodology described earlier, noise levels in the Future without the Proposed Project were calculated for the two noise receptor sites. These future No Build noise levels are shown in **Table 6**.

Table 6
Future No Build Noise Levels (in dBA)

Site	Time	Existing $L_{eq(1)}$	Future No Build $L_{eq(1)}$	No Build Increment
1	AM	58.7	58.8	0.1
	PM	57.5	57.5	0.0
2	AM	72.6	72.6	0.0
	PM	71.4	71.4	0.0

Without the Proposed Project, noise levels in the vicinity of the project site would be similar to existing conditions. There would be no appreciable change in noise levels. Future noise levels would be expected to be within 1 dBA of existing noise levels.

E. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Using the methodology described earlier, future noise levels in the Future with the Proposed Project were calculated for the two noise receptor sites. These future noise levels are shown in **Table 7**.

Table 7
Future Build Noise Levels (in dBA)

Site	Time	Existing $L_{eq(1)}$	Future Build $L_{eq(1)}$	Project Increment
1	AM	58.7	60.3	1.6
	PM	57.5	58.9	1.4
2	AM	72.6	73.7	1.1
	PM	71.4	72.3	0.9

Comparing future with the Proposed Project noise levels with existing noise levels, at both sites, the maximum increase in $L_{eq(1)}$ noise level would not exceed NYSDEC's threshold for a significant noise level increase of 6.0 dBA. In the future with the Proposed Project, the absolute levels at site 2 would exceed NYSDEC's recommended level for residential use of 65 dBA, but the existing noise levels at this location already exceeds that level. The reason for the exceedance in the existing condition is the existing level of general vehicular traffic on Broadway. The exceedance is not associated with existing bus depot operations. Noise levels in the future with the Proposed Project would continue to be above the 65 dBA recommended threshold, but not as a result of bus depot operations. Consequently, the future noise levels would not be considered an impact.

F. CONCLUSIONS

Based on the analysis performed, vehicular traffic including buses traveling to and from the Facility as a result of the Proposed Project is projected to result in increased noise levels at nearby receptors, but the increases would be in the range that is considered imperceptible to barely perceptible and is below the threshold that would necessitate mitigation according to NYSDEC impact evaluation guidance. During the peak traffic hours, absolute noise levels at site 2 would exceed NYSDEC's recommended noise level for residential use and the Town of Cortlandt noise control law noise level limit, but the existing noise levels at this location exceed that level as well and the Proposed Project is not the cause of the exceedance. Consequently, the Proposed Project would not have the potential to result in any significant adverse noise impacts. *

Appendix

Montauk Bus Depot
40565
2/13/2017
Site 1: 6th Street

Date	Start Time	dBA						
		L_{eq}	L_1	L_{10}	L_{50}	L_{90}	L_{min}	L_{max}
2/13/2017	5:00 PM	56.9	67.6	60.0	53.2	49.6	44.8	80.3
2/13/2017	6:00 PM	52.8	65.2	54.2	47.8	43.9	36.2	75.4
2/13/2017	7:00 PM	49.1	58.5	49.2	44.5	41.0	36.2	75.1
2/13/2017	8:00 PM	50.0	61.1	51.4	46.3	43.3	38.9	75.4
2/13/2017	9:00 PM	48.6	57.6	48.1	44.8	42.3	36.7	83.6
2/13/2017	10:00 PM	53.2	65.4	55.3	49.1	42.1	37.4	75.8
2/13/2017	11:00 PM	47.7	59.5	48.3	44.7	40.7	34.8	75.3
2/14/2017	12:00 AM	42.1	49.0	45.1	40.6	37.3	32.2	56.7
2/14/2017	1:00 AM	41.4	48.2	44.2	39.8	37.1	32.1	56.5
2/14/2017	2:00 AM	49.8	61.4	50.8	43.8	40.2	35.3	76.6
2/14/2017	3:00 AM	46.1	59.3	45.5	41.1	37.9	30.9	72.9
2/14/2017	4:00 AM	36.6	41.6	38.7	36.0	34.1	30.5	48.2
2/14/2017	5:00 AM	51.1	64.9	49.5	43.0	38.4	34.0	74.1
2/14/2017	6:00 AM	58.3	70.1	61.3	51.6	48.7	44.4	78.0
2/14/2017	7:00 AM	58.7	71.7	60.5	49.9	47.2	36.1	80.8
2/14/2017	8:00 AM	54.0	67.4	55.1	42.9	39.3	36.0	78.2
2/14/2017	9:00 AM	57.8	69.3	60.4	47.0	41.0	35.1	90.6
2/14/2017	10:00 AM	55.9	68.9	58.0	44.0	38.6	34.8	75.9
2/14/2017	11:00 AM	53.7	67.2	55.4	43.6	39.5	35.3	74.0
2/14/2017	12:00 PM	54.4	67.5	54.7	41.4	35.9	31.1	77.9
2/14/2017	1:00 PM	59.0	70.6	62.9	51.1	45.4	36.0	82.2
2/14/2017	2:00 PM	57.5	70.6	59.5	46.2	41.3	33.8	81.6
2/14/2017	3:00 PM	55.8	68.6	58.3	45.7	40.7	35.7	80.0
2/14/2017	4:00 PM	53.0	66.8	53.9	41.8	38.8	36.2	76.0

Montauk Bus Depot
40565
2/13/2017
Site 2: Broadway

Date	Start Time	dBA						
		L_{eq}	L_1	L_{10}	L_{50}	L_{90}	L_{min}	L_{max}
2/13/2017	5:00 PM	70.8	76.8	77.0	68.5	55.6	45.9	95.7
2/13/2017	6:00 PM	66.6	74.4	71.2	63.0	49.9	37.4	90.8
2/13/2017	7:00 PM	63.0	67.6	66.2	59.7	46.9	37.3	90.5
2/13/2017	8:00 PM	63.8	70.3	68.4	61.5	49.3	40.0	90.8
2/13/2017	9:00 PM	62.5	66.8	65.1	60.0	48.2	37.8	99.0
2/13/2017	10:00 PM	67.1	74.5	72.3	64.3	48.0	38.5	91.2
2/13/2017	11:00 PM	61.6	68.7	65.4	59.9	46.6	35.9	90.7
2/14/2017	12:00 AM	55.9	58.2	62.1	55.9	43.2	33.3	72.1
2/14/2017	1:00 AM	55.3	57.4	61.3	55.1	43.1	33.2	71.9
2/14/2017	2:00 AM	63.7	70.6	67.8	59.0	46.1	36.5	92.0
2/14/2017	3:00 AM	60.0	68.4	62.6	56.3	43.8	32.1	88.3
2/14/2017	4:00 AM	50.5	50.7	55.8	51.2	40.0	31.6	63.6
2/14/2017	5:00 AM	65.0	74.0	66.5	58.2	44.4	35.1	89.4
2/14/2017	6:00 AM	72.2	79.3	78.3	66.8	54.7	45.6	93.4
2/14/2017	7:00 AM	72.6	80.8	77.5	65.1	53.2	37.2	96.2
2/14/2017	8:00 AM	67.9	76.5	72.1	58.1	45.3	37.1	93.6
2/14/2017	9:00 AM	71.7	78.5	77.4	62.2	47.0	36.2	106.0
2/14/2017	10:00 AM	69.8	78.1	75.0	59.2	44.5	35.9	91.3
2/14/2017	11:00 AM	67.6	76.4	72.4	58.8	45.4	36.4	89.3
2/14/2017	12:00 PM	68.3	76.7	71.8	56.6	41.9	32.2	93.3
2/14/2017	1:00 PM	72.9	79.8	80.0	66.4	51.3	37.1	97.5
2/14/2017	2:00 PM	71.4	79.7	76.5	61.4	47.2	34.9	96.9
2/14/2017	3:00 PM	69.7	77.7	75.3	60.9	46.6	36.9	95.4
2/14/2017	4:00 PM	66.9	76.0	71.0	57.0	44.8	37.4	91.3