KILL VAN KULL
NEWARK BAY
ARTHUR KILL

US Army Corps of Engineers
NEW YORK DISTRICT

TASK 4 (ES):
BASELINE NOISE MONITORING REPORT
EASTERN SHORE

SITE # ES1 - CARROLL PLACE
SITE # ES2 – HAMILTON AVENUE
SITE # ES3 – HARBORVIEW TERRACE
SITE ES4 - HARBORVIEW ROOF
SITE # ES5 - RICHMOND TERRACE
SITE # ES6 - NICHOLAS STREET
SITE # ES7 – VAN BUREN STREET (FORMER KVK SITE 9)

LEQ COMPARISON TO NYC CODE CRITERIA
(ABSOLUTE LEVELS CRITERIA)

BASED ON BACKGROUND AND DREDGE SOUND LEVEL READINGS
JUNE 18, 2007 – DECEMBER 28, 2008
(WEEK OF DECEMBER 22, 2008)

MICHAEL BAKER, INC.

1.0 INTRODUCTION

The purpose of the report is to provide an update to the on-going long-term measurements at noise-sensitive locations in the project area. This update incorporates long term baseline data collection and compares it to the NYC Code Criteria for absolute sound levels. Since there are no dredge operations at this time, the substantial increase criteria of 8 dBA above baseline conditions is not applicable.

2.0 MONITOR SITE LOCATIONS, DESCRIPTIONS & EXISTING CONDITIONS

Noise monitoring locations were selected based on a survey of the project area and where landowner permission was granted. These locations are representative of noise-sensitive sites with the potential to be affected by dredge operation noise. For the Eastern Shore, six (6) new sites were added to the former KVK Site #9 that was carried over into this geographic area (Site ES-7). These sites are shown on the following regional aerial. The descriptions, existing conditions, and other monitor site photos are discussed immediately after.

Please note that all of the aerial and street views are copied from Google Earth or from Virtual Earth sources. The green dots represent the meter locations and the blue dots represent the dredge locations as provided by the Contractor, if any during the period.

3.0 LONG TERM NOISE MEASUREMENT METHODS & PROCEDURES

During these measurements, the noise monitors are programmed to calculate sound levels for one-hour intervals and provide the results in terms of the Leq, Lmax, L1, L10, L33, L90, and L99 metrics. All long-term noise measurements were performed with instruments that are in compliance with criteria for a Type 1 (Precision) Sound Level Meter as defined in the current version of ANSI Standard S1.4.

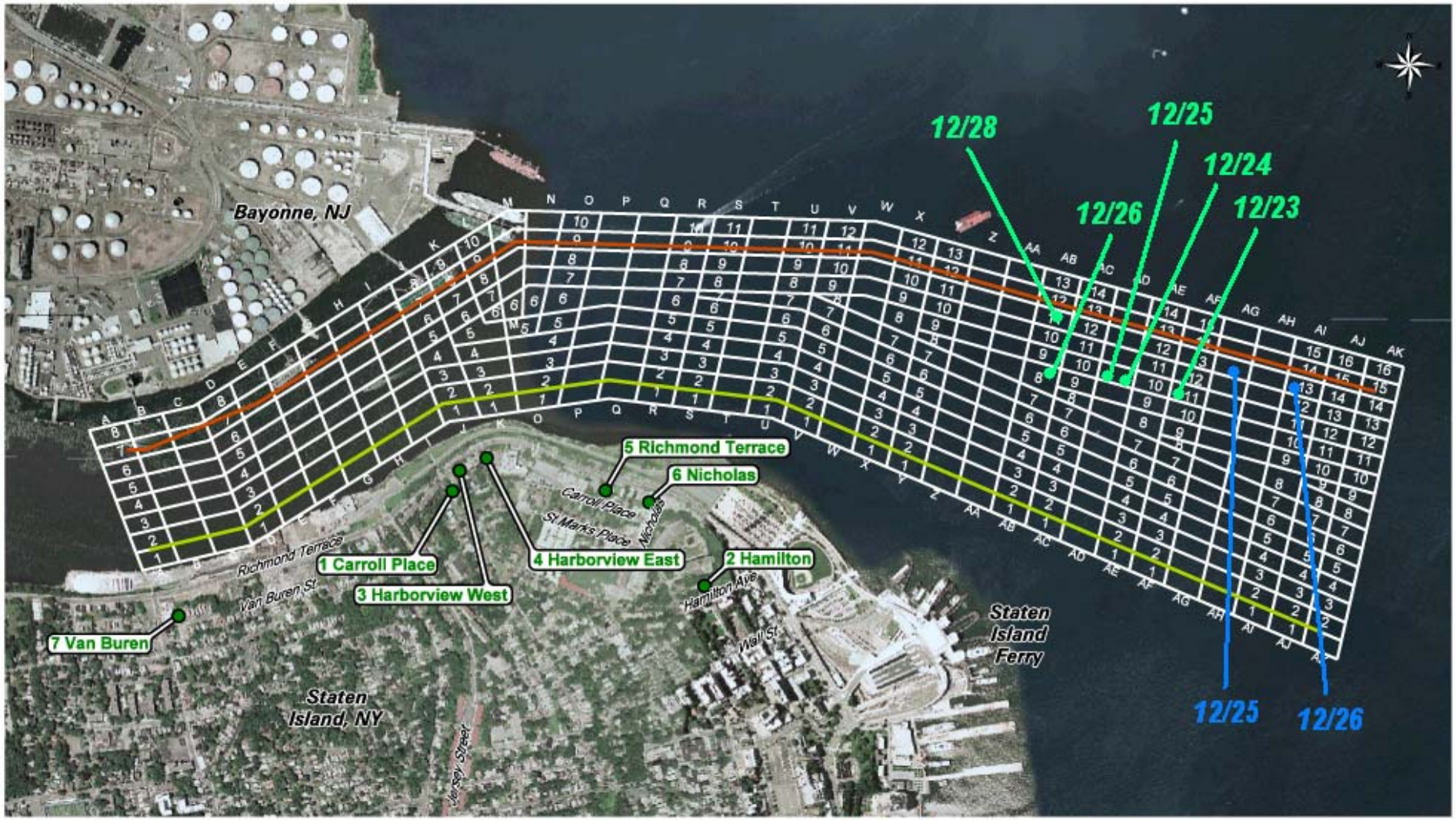
Currently, long term hourly background data collections have been tabulated into median background levels. Since the new guidance was released by NYDEP, the absolute level criteria has been replaced by the increase over existing sound level criteria. These potential criteria impacts occur when levels exceed 8 dBA over existing baseline conditions at a residence as adopted from Local Laws of the City of New York No. 113, an amendment of the administrative code.

Though not directly applicable to the dredging, the increase over existing criteria is suggested to be the best available one to assess changes in the regional sound level environment. The reason that the absolute criteria is not as good a barometer to assess potential noise impacts is because the existing sound levels are usually above the Code at several sites, especially during the nighttime hours. Therefore, a typical person will tend to notice and react to an increase above their baseline environment more than if a dredge generated noise were to reach an absolute decibel level such as 60 or 65 dBA.

4.0 LONG TERM FIELD MONITORING SUMMARY

The regional sound levels are typical of a densely developed urban area with a mix of heavy industry, commercial, marine, water transit, and single and multi-family residential land use types with a mix of parks, schools, playgrounds, and municipal buildings. Typical regional noise generators include water traffic (plus on-site area noise from the Staten Island Ferry), aircraft, local construction, local vehicular traffic (Richmond Terrace is dominant), pedestrian and neighborhood activities, and home maintenance.

A summary of the week is presented in Section 5.0. The absolute level code criteria is used to discuss the relative “loudness” of the existing environment so that there is some basis of association for the average person. For reference purposes, the Code identifies “daytime” as 7AM to 10 PM and “nighttime” as 10 PM to 7AM. Since the dredge operations have restarted, we are also examining sound levels that increase greater than 8 dBA over the existing sound levels (City of New York No. 113).



● Dredge 54 ● Dredge 55

0 200 400 800 1200
Scale in Feet

SITE ES1: 9 CARROLL PLACE (STATEN ISLAND, NY)

This site lies at the corner of Carroll and Westervelt. There are numerous single family and multi-family residences in this area. Noise sources at this location typically include Richmond Terrace and Channel traffic as well as aircraft and neighborhood activities. The microphone is located on the roof and has a direct line of sight to the water, but only a partial view because of some trees. This site is in an R3A (N-1) zone with a 60 dBA daytime/ 50 dBA nighttime criteria. The daytime Leq exceeds the 60 dBA criteria about 16% of the time. Nighttime Leq exceeds the criteria 100% of the time.

⇐ North view from microphone

Microphone in backyard ⇒

North view across KVK from Richmond Terrace ⇓

Aerial view from north looking south across the channel ⇑

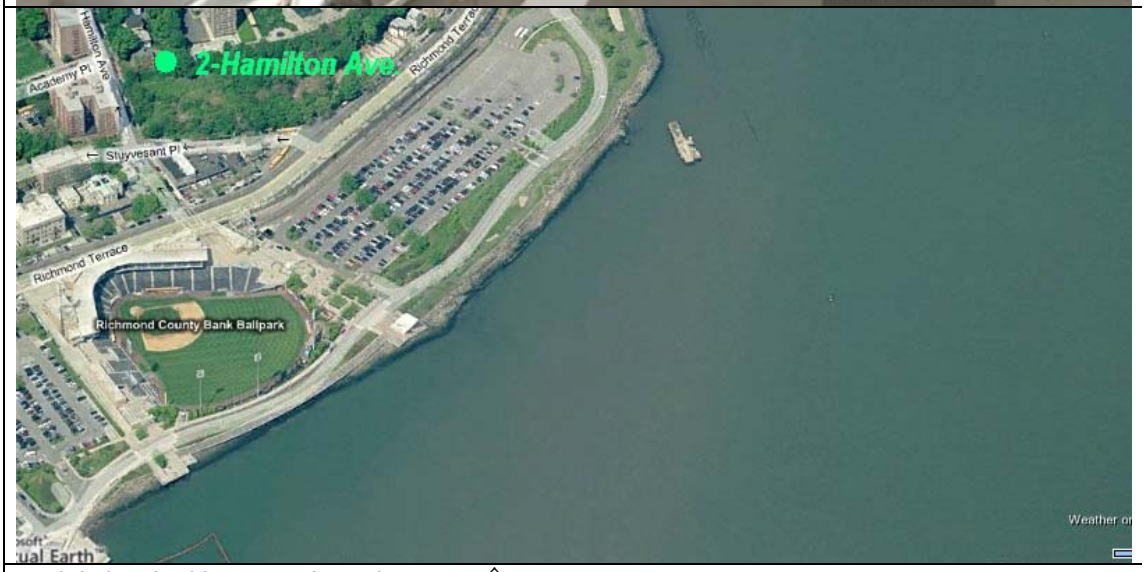
SITE ES2: 41 HAMILTON AVENUE (STATEN ISLAND, NY)

There are many single/multi-family residences in this area. This site borders the city center, the Staten Island Ferry and the RCB Ballpark. Noise sources at this location typically include Richmond Terrace and Channel traffic as well as aircraft, neighborhood, and pedestrian activities. St. Mark's Place activities were noticeable during the initial installation period. The microphone location has a direct line of sight to the water, but partial because of the trees. This site is in an R6 (N-2) zone with a 65 dBA daytime/55 dBA nighttime criteria. The daytime Leq never exceeds the 65 dBA criteria. Nighttime Leq exceeds the criteria ~2% of the time.

⇐ East view from microphone

Microphone in backyard ⇒

East view along Hamilton Avenue from Site 2 ⇓



Aerial view looking west from the east ⇑

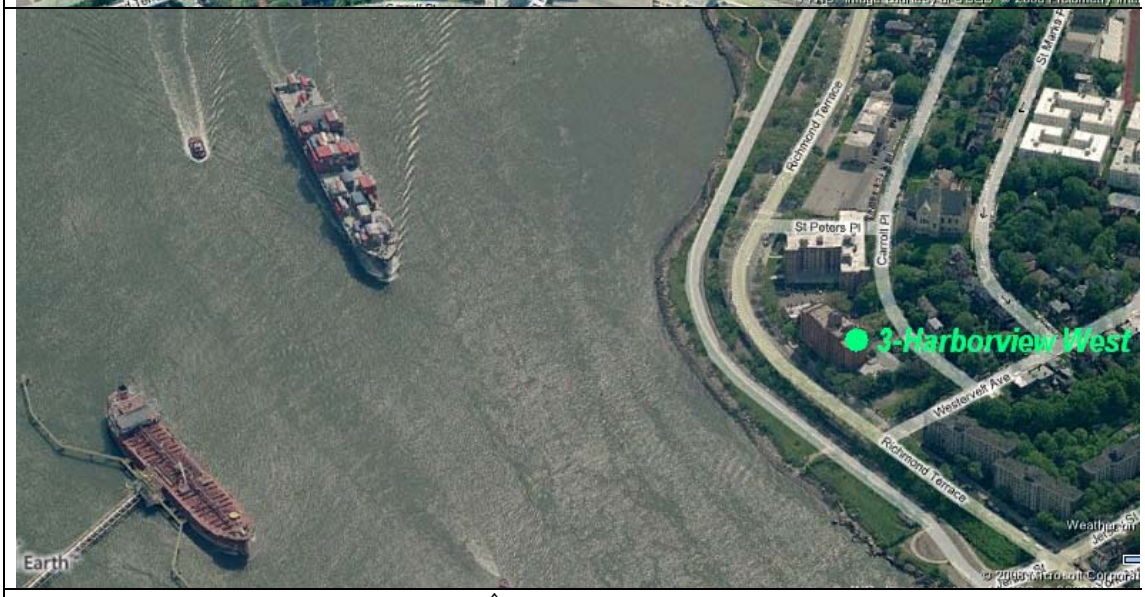
SITE ES3: HARBOR VIEW APTS. [W. TERRACE] 388 RICHMOND TERRACE (STATEN ISLAND, NY)

There are multi-family residential and single family homes in this area, as well as St. Peters School. Noise sources in this area typically include Richmond Terrace traffic, channel traffic, neighborhood activities, and aircraft noise. The microphone is located on the west terrace roof and has a direct line of sight to the water. This site is in an R5 (N-2) zone with a 65 dBA daytime/55 dBA nighttime criteria. The daytime Leq exceeds the 65 dBA criteria about 2% of the time. Nighttime Leq exceeds the criteria 100% of the time.

⇐ North view from microphone

North view zoomed in ⇒

Aerial view from south across channel ⇓



Aerial view looking east from the west ⇑

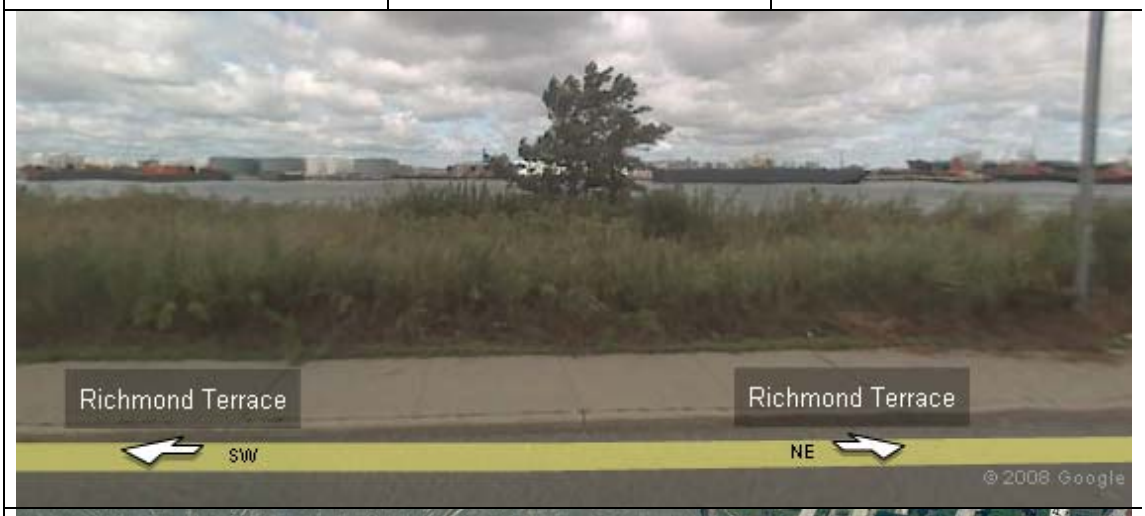
SITE ES4: HARBOR VIEW APTS. [EAST ROOF] 388 RICHMOND TERRACE (STATEN ISLAND, NY)

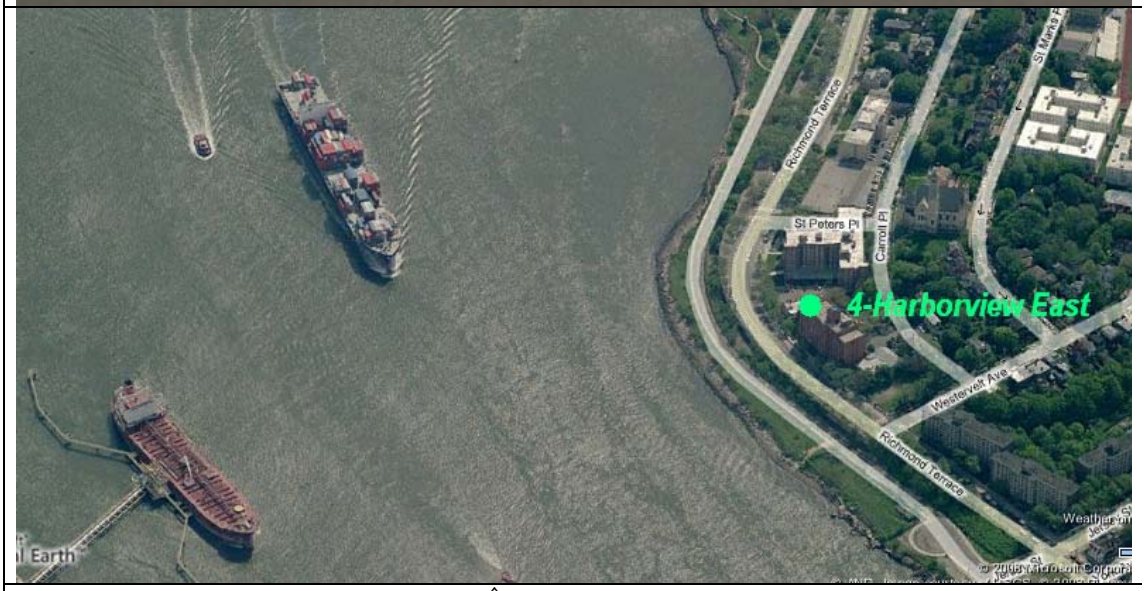
Same residential site as ES3 except that the noise monitor is installed on the east roof. Traffic from Richmond Terrace is a major contributor to the sound level environment in addition to the channel traffic, aircraft, and neighborhood activities. The microphone is located on the roof and has a direct line of sight to the water. This site is in an R5 (N-2) zone with a 65 dBA daytime/ 55 dBA nighttime criteria. The daytime Leq do not exceed the 60 dBA criteria. Nighttime Leq exceeds the criteria 100% of the time.

⇐ North view from microphone

Northeast from microphone ⇒

North/northeast view along Richmond Terrace ⇓





Aerial view looking east from the west ⇑

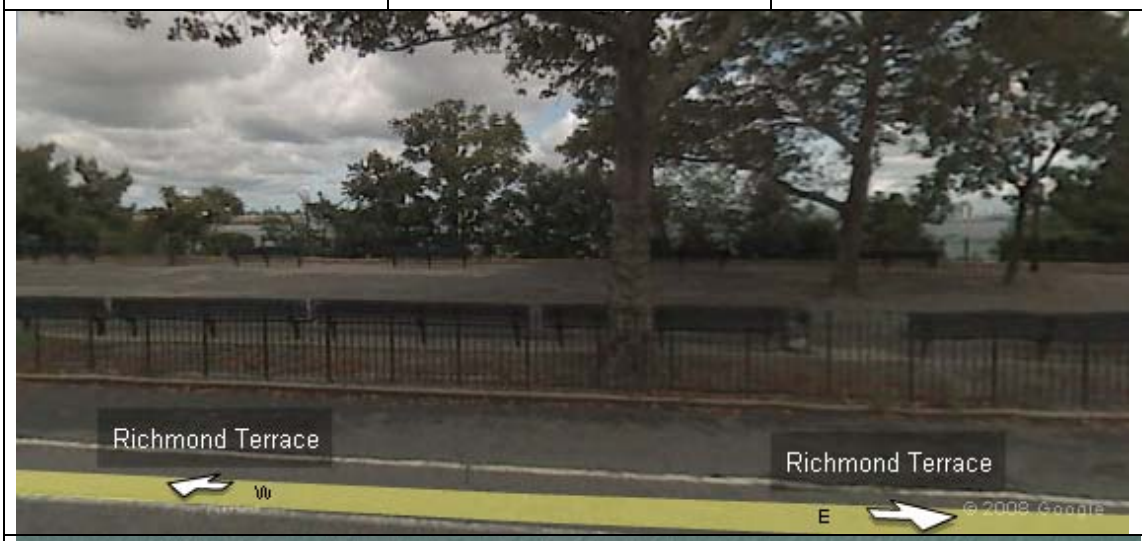
SITE ES5: 288 RICHMOND TERRACE (STATEN ISLAND, NY)

There are single and multi-family homes and St. Peters School in this area. Traffic from Richmond Terrace is the major noise contributor in addition to the channel traffic and neighborhood activities. The microphone has a direct line of sight to the water, partially obstructed because of trees and other structures. This site is in an R3A (N-1) zone with a 60 dBA daytime/50 dBA nighttime criteria. The Leq does not exceed the 60 dBA daytime criteria. Nighttime Leq exceeds the criteria about 30% of the time.

⇐ Northeast view from microphone

Microphone in backyard ⇒

Northerly view from Site #5 residence ⇓



Aerial view looking north across the channel ⇑

SITE ES6: 6 NICHOLAS STREET (STATEN ISLAND, NY)

This site is represented by Crown Heights Realty with single/multi-family units in the area. The building is on the corner of Nicholas & Richmond Terrace, immediately across from Staten Island Ferry parking and the RCB Minor League Ballpark. The microphone is located on the roof and has a direct line of sight to the water. Traffic from Richmond Terrace is a major contributor to the overall sound level environment, in addition to the Channel traffic, aircraft, and neighborhood activities. This site is in an R3A (N-1) zone with a 60 dBA daytime/50 dBA nighttime criteria. The daytime Leq exceeds the 60 dBA criteria about 69% of the time. Nighttime Leq exceeds the criteria 100% of the time.

⇐ North view from microphone

Microphone on roof ⇒

View of Site #6 residence on Nicholas Street ⇓

Aerial view looking north across the channel ⇑

SITE ES7: VAN BUREN STREET, EAST OF LAFAYETTE AVE (KVK 9 - STATEN ISLAND, NY)

This area includes single family residences that have an unobstructed view of the Kill Van Kull. Though residential, the area is zoned as Manufacturing (M3-1) and is surrounded by other manufacturing zones (M1-1). This site was retained in case of dredge activities in the western area of the project grid. The location is within the first block of residences, slightly set back from Richmond Terrace. This site is in an M3-1 (N-3) zone with a 70 dBA day/night criteria. Richmond Terrace, Channel traffic, and commercial activities are dominant. The Leq does not exceed the day or night criteria. However, had a more stringent 60/50 dBA residential criteria been applicable, then the Leq would exceed the daytime criteria about 24% of the time and would exceed the night criteria 100% or the time.

⇐ Microphone on roof

Microphone case on ground ⇒

Northerly view from Site #7 residence ⇓

Aerial view looking south across the channel ⇑

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7.0 WEEK PERIOD SUMMARY

Weather:

Day	Date	Average Wind Speed (mph)	Average High Wind Speed (mph)	Gust Speed (mph)	General Wind Direction	Meteorological Event/Amount
Monday	12-22	18	39	48	W	None
Tuesday	12-23	9	17	21	SW	None
Wednesday	12-24	7	24	30	SW	Rain/0.50 inches
Thursday	12-25	15	31	41	W	Rain/0.11 inches
Friday	12-26	4	9	13	NE	Rain/Trace
Saturday	12-27	3	9	12	SW	Rain/0.01 inches
Sunday	12-28	16	32	43	SW	Rain-Fog/0.07 inches

Source: Newark Airport Weather Data [Weather Underground]

Dredge Operating Locations: Dredge #55 was working in this area only on Thursday and Friday. Dredge #54 was in operation everyday except Monday and Saturday. All of the operations were generally located in the eastern and northeastern work grid area, approximately ¾ - 1¼ + miles minimum from the nearest sound level monitor locations.

Other Information: Possible identification of regional and local noise producers is provided by our field operative, police and emergency reports, newspapers, and road construction schedules. Our field operative lives in the area and goes through the region every day. During this week, he did not report the intermittent grinding noises from the HESS, IMTT and/or other industrial demolition activity operations across the water in Bayonne, nor the large jackhammer-type machine on a barge located directly in front of Site ES-7, which appear to be the construction/expansion/reinforcing of a docking station for barges/small ships.

There were no emergency conditions that generated noise that appeared in the Staten Island local newspapers.

There were several days where the winds and/or rain were heavy.

The field operative has also noted that the background urban sounds in the area tend to overshadow the clamshell dredge. Relatively speaking, they are “fairly quiet” as observed from the shore and the observer must usually focus on the operation to distinguish it from other sound generators in the region [subjective opinion].

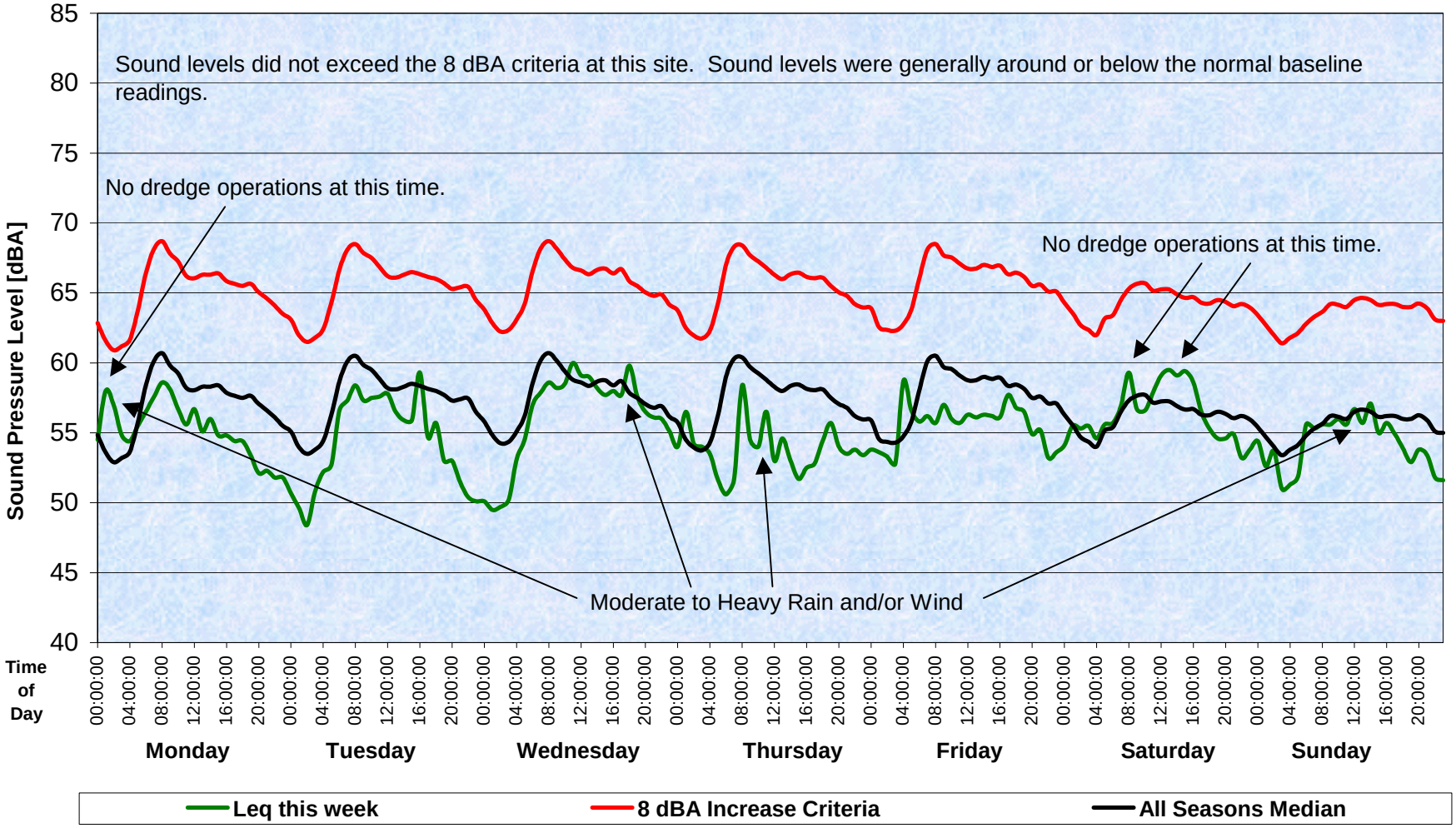
General Overview During the Week:

There were few exceedances of the 8 decibels (dBA) over existing criteria according to the NYC Code throughout the region. Sound level criteria exceedances that coincided with dredge operating times were not dredge related. Either the dredge was too far away from a monitoring site on any particular day, the monitored sound levels at the sites were louder than sites that were closer to the dredge during the same times, or the increases were weather related. The sound level graphs identify various specific sound level increase incidents and their probable/possible causes.

Sites ES1 through ES7 – Leq Measurements vs. NYC Code Absolute Criteria

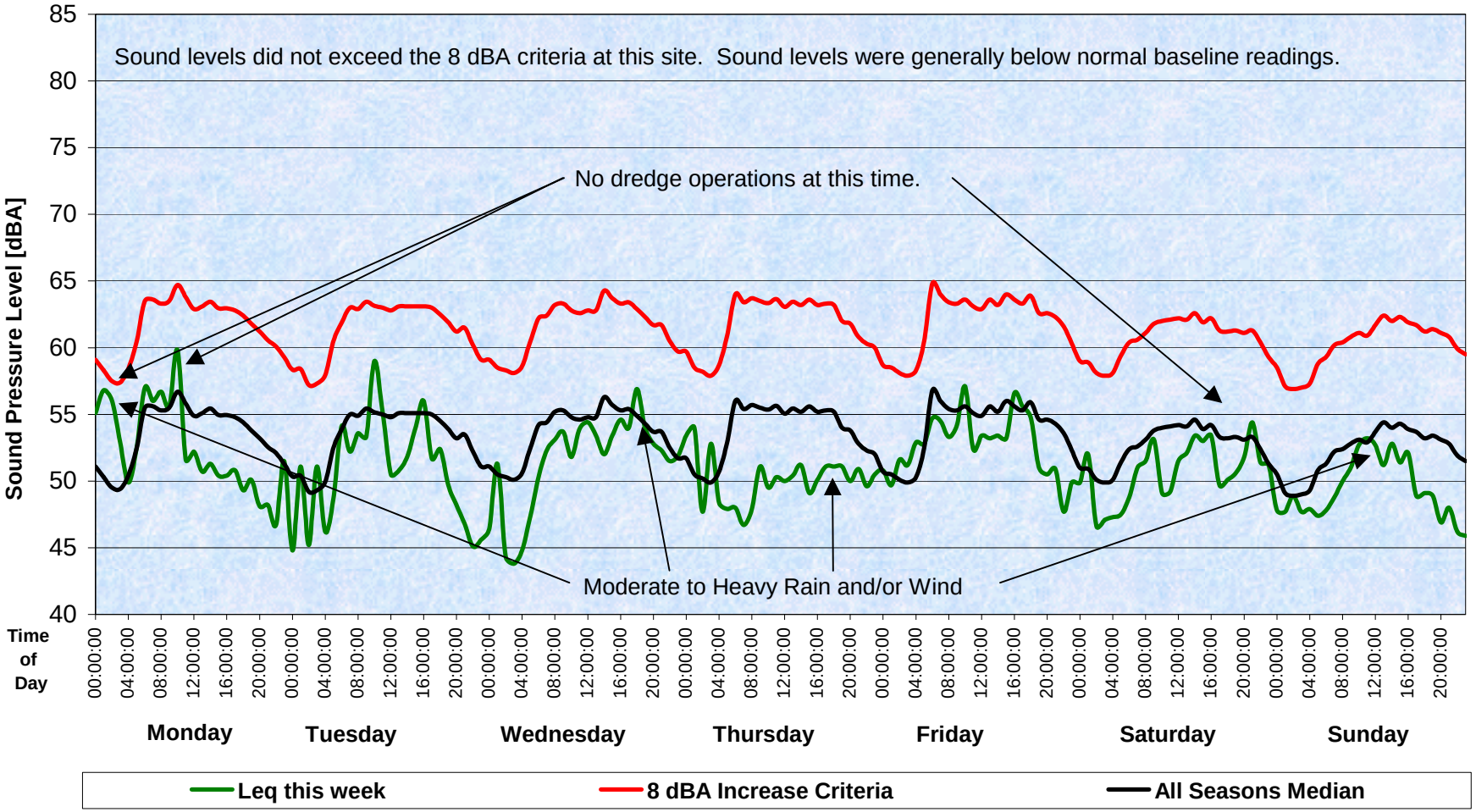
Kill Van Kull - Site ES-1 Carroll Place

12/22/08 - 12/28/08



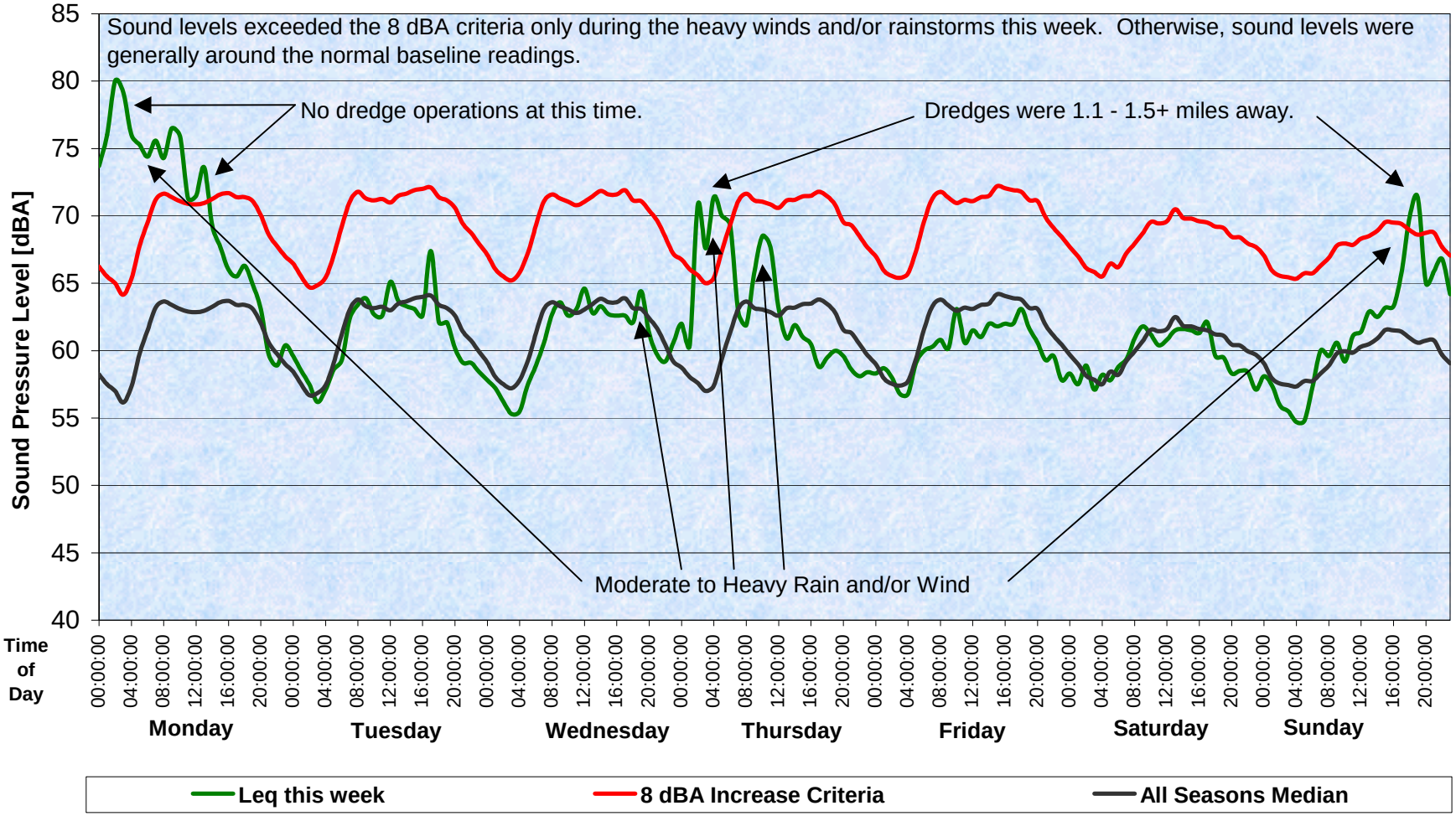
Kill Van Kull - Site ES-2 Hamilton

12/22/08 - 12/28/08



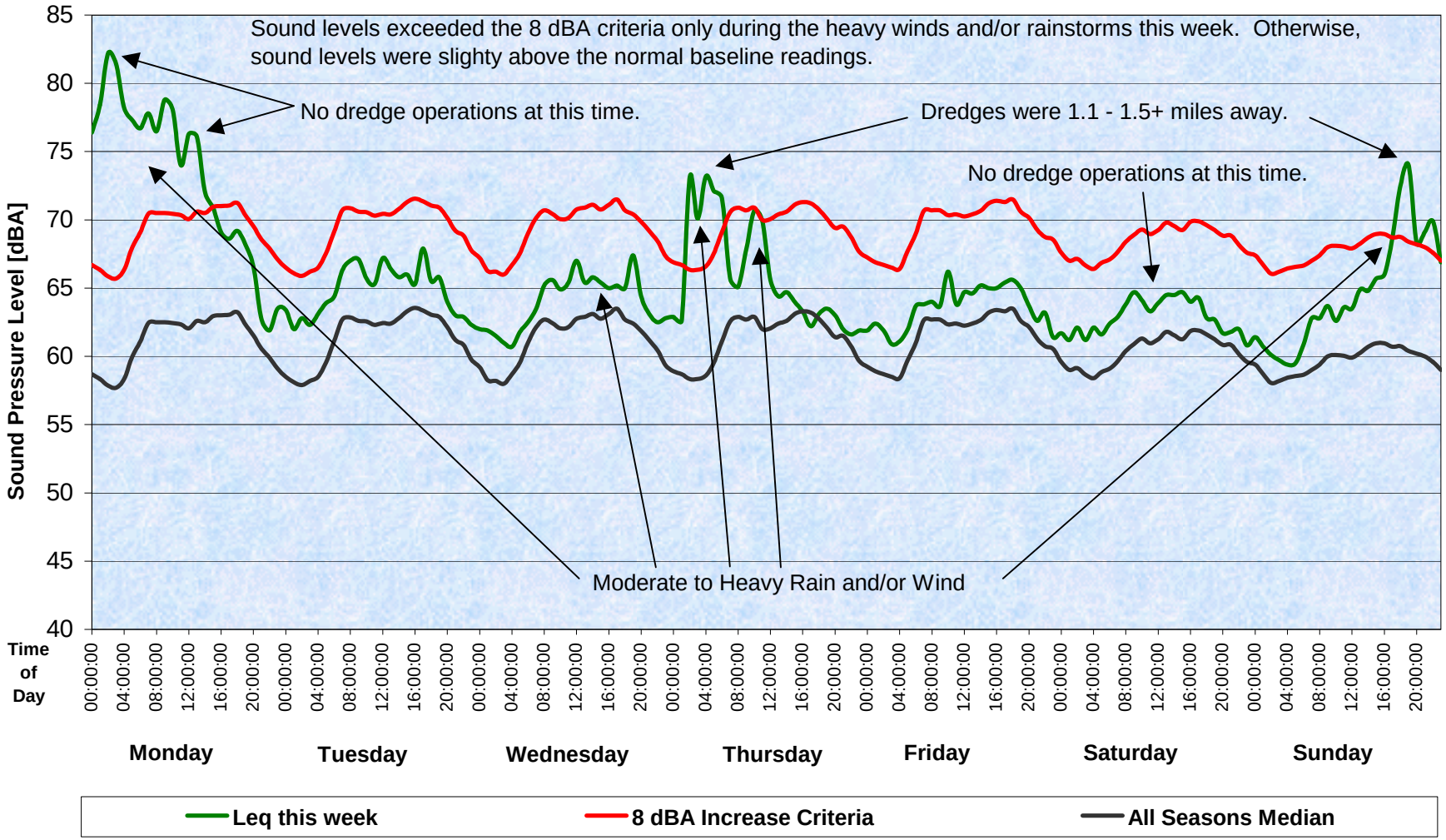
Kill Van Kull - Site ES-3 Harbor View Terrace

12/22/08 - 12/28/08



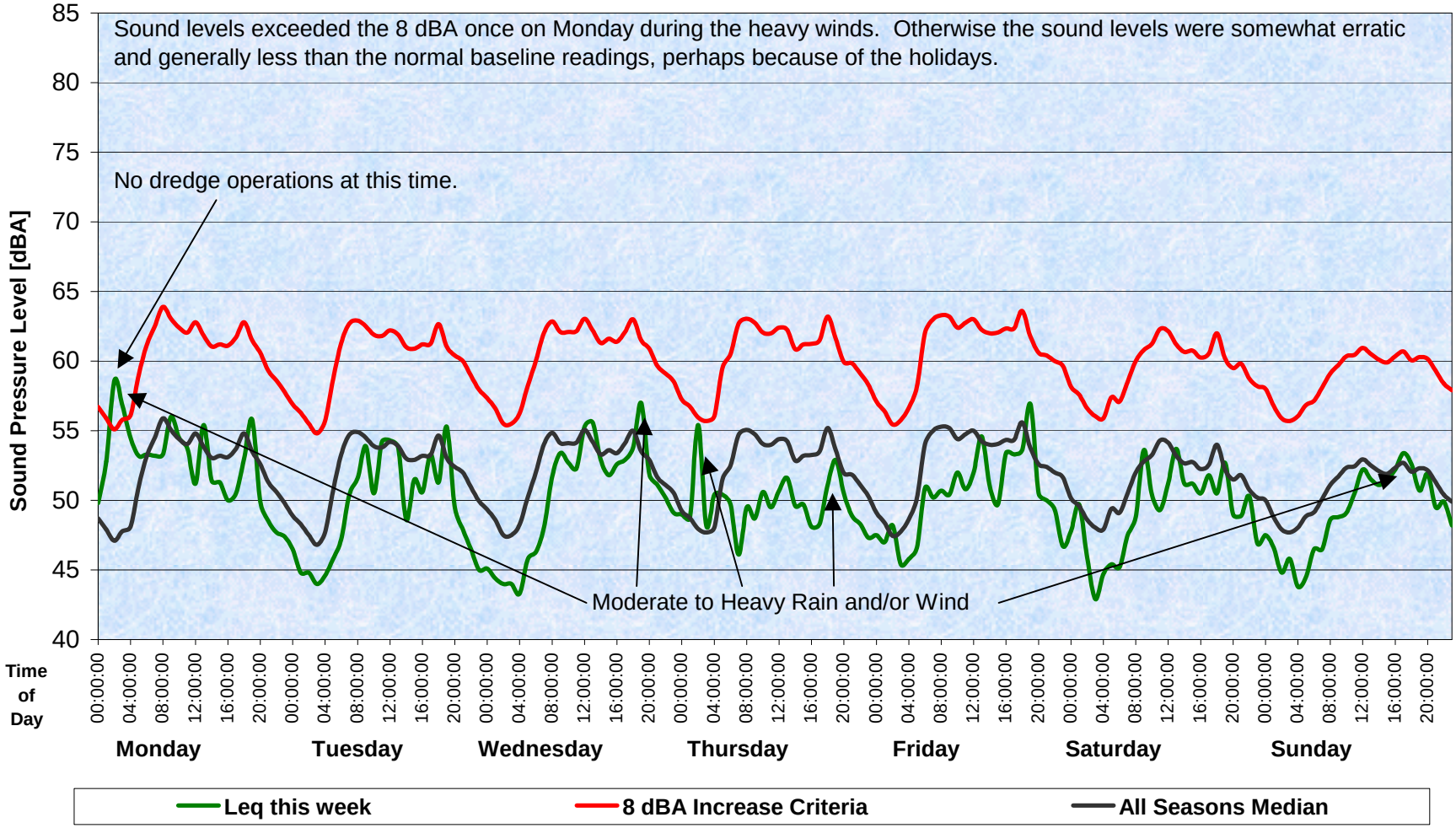
Kill Van Kull - Site ES-4 Harbor View Terrace Roof

12/22/08 - 12/28/08



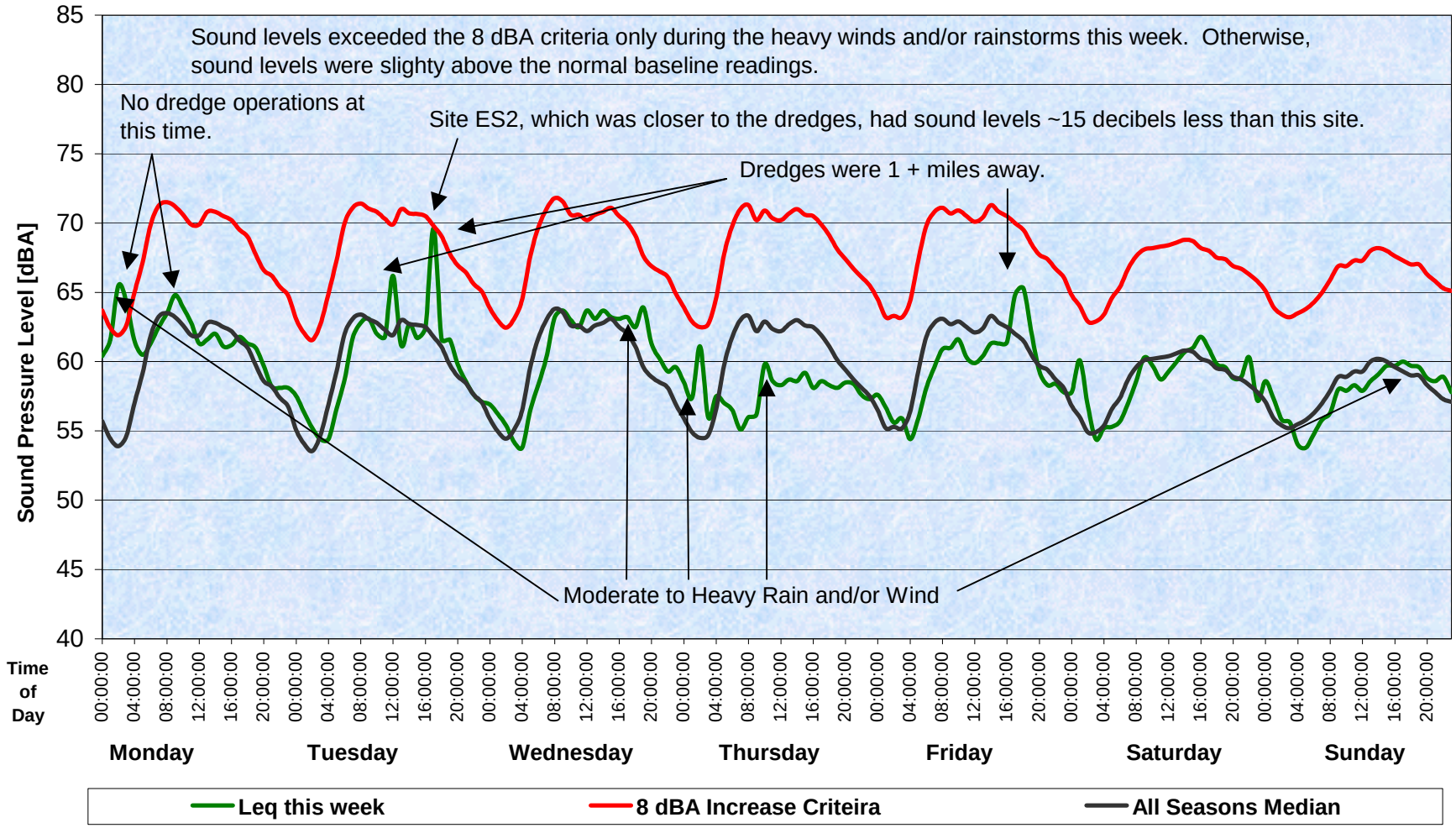
Kill Van Kull - Site ES-5 Richmond Terrace

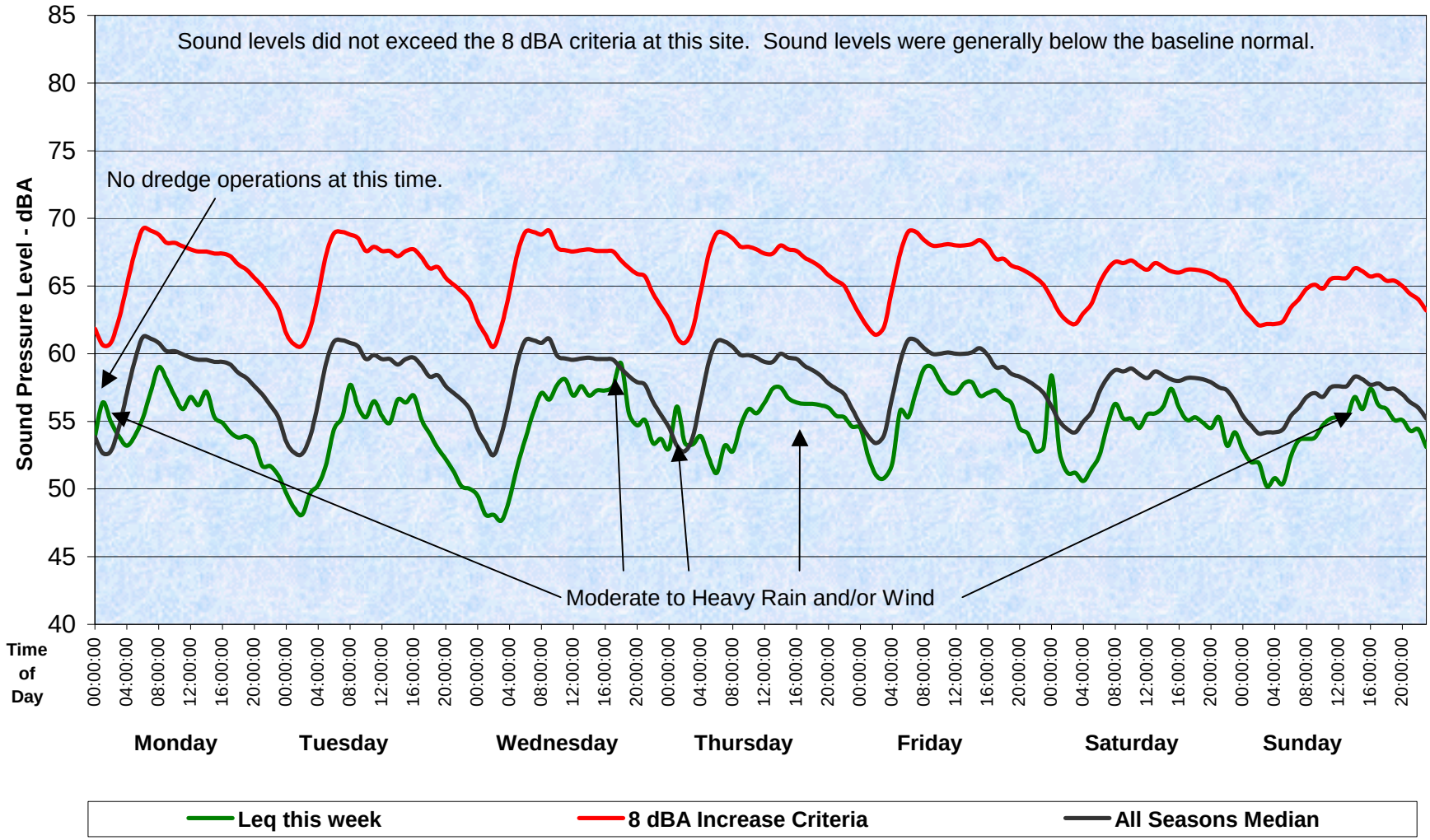
12/22/08 - 12/28/08



Kill Van Kull - Site ES-6 Nicholas

12/22/08 - 12/28/08



Kill Van Kull - Site ES-7 Van Buren

12/22/08 - 12/28/08