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9 October 2015

Town of Medway
155 Village Street
Medway, MA 02053

Attention: John Foresto
Chair, Medway Board of Selectmen

Subject: Acoustical Consulting Services
Application Review for Two 100 MWe Combustion Turbine Generators
Summer Street in Medway, MA
Acentech Proposal No. 626573

References: Exelon/West Medway's petition to the Energy Facilities Siting Board (EFSB) with
Section 4.6 – Noise Impacts of Exelon-EFSB Petition
Sound Level Monitoring Report by Epsilon (3/9/2015)
Exelon Responses to First Set of EFSB IRs – EFSB-NO-1 to NO-22 (8/3/2015)
Draft Report to Town of Medway by M. Ernst, Esq. (8/9/2015)
Exelon Responses to First Set of Town of Medway IRs – Medway-NO-1 to NO-9 (9/4/2015)
Exelon Responses to Second Set of EFSB IRs – EFSB-NO-23 to NO-30 (9/18/2015)

Dear Mr. Foresto:

At your request, we are conducting a peer review of the noise documents related to Exelon/West Medway's petition to the Energy Facilities Siting Board (EFSB). Exelon is proposing to add two 100 MWe simple-cycle combustion turbine generator units and associated equipment to its existing Summer Street facility. The findings and comments from our on-going peer review of the above-referenced noise submittals developed for the proposed power project are presented below.

Exelon/West Medway Project Noise Study

Exelon's consultant, Epsilon Associates, conducted a noise study for the proposed power project. For this study, Epsilon identified applicable project noise criteria, performed baseline ambient sound measurements in the community, developed a computer sound model for both the existing equipment and the proposed future equipment, and added various noise mitigation measures into the project's design for both the existing and the future facilities. These measures, which are described in Appendix A of this letter, included purchase of reduced noise equipment, and installation of muffler, lined duct, enclosure, and lagging treatments. Figure 1 displays an aerial photograph of the project, surrounding community, and Locations R1 to R7, which were selected by Epsilon for the noise study. Figures 2 to 4 provide comparisons of the estimated existing and proposed facility sound levels with measured daytime and nighttime ambient background sound levels. These figures also show estimated sound level increases during daytime and nighttime periods with the proposed and existing facilities in operation. Results of the analysis indicated that with substantial mitigation measures, the sound of the proposed new equipment would comply with the applicable noise criteria during both daytime and nighttime hours, and that the combined sound from the existing and new equipment would comply with the applicable noise criteria during daytime hours only.

Acentech Review Comments

We believe that the approach used by Epsilon is generally valid for estimating and evaluating the noise impacts of the proposed project. Our review indicates that the baseline ambient measurements may be used to establish the background sound levels in the community and that the project noise limits address the MassDEP noise criteria. Based on our review of the computer sound model, we believe that it is useful and generally appropriate for estimating project sound levels.

We note one specific concern about the current sound model. In response to our request to Exelon for information in support of the modeled sound attenuation values for the combustion turbine exhaust system, we were provided vendor data that were substantially less than the modeled attenuation values. We will continue to seek clarity and resolution of this issue.

In addition, we have a general concern about the facility strictly meeting the MassDEP noise criteria (limits increase in broadband sound to 10 dBA over the ambient) in the community at night during expected regular operation. We understand that Epsilon's sound estimates include a 3 dBA margin, which recognizes the inherent uncertainties in modeling, vendor equipment, and final project design and construction. We judge that even with this margin, it would not be surprising for the facility sound to increase the overall sound level in the community by more than 10 dBA at times. To address tolerances in the equipment, we have requested of Exelon that they confirm whether or not the major equipment supplier (General Electric) for the project will provide a noise guarantee; in our experience, GE usually does not provide a guarantee.

We recommend that any noise conditions imposed on the facility by the Town of Medway be judged realistic and clearly feasible to achieve by Exelon. The company has committed to incorporate substantial noise mitigation measures in both the proposed and existing facilities; and it has agreed to the Town reviewing and commenting on the operation noise measurement protocol and to witnessing the required operation noise measurements upon facility commissioning. In final comment, we understand that Exelon understands the new facility must comply with the MassDEP noise criteria and with project-specific conditions.

Please contact me if you have any questions or comments about our review or this letter. You may contact me at jbarnes@acentech.com and 617-499-8018 (office-direct).

Sincerely yours,
ACENTECH INCORPORATED



James D. Barnes, P.E., F. INCE

Figures 1 to 4
Appendix A

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Figure 1.
Project Area and Community Locations R1 to R7.

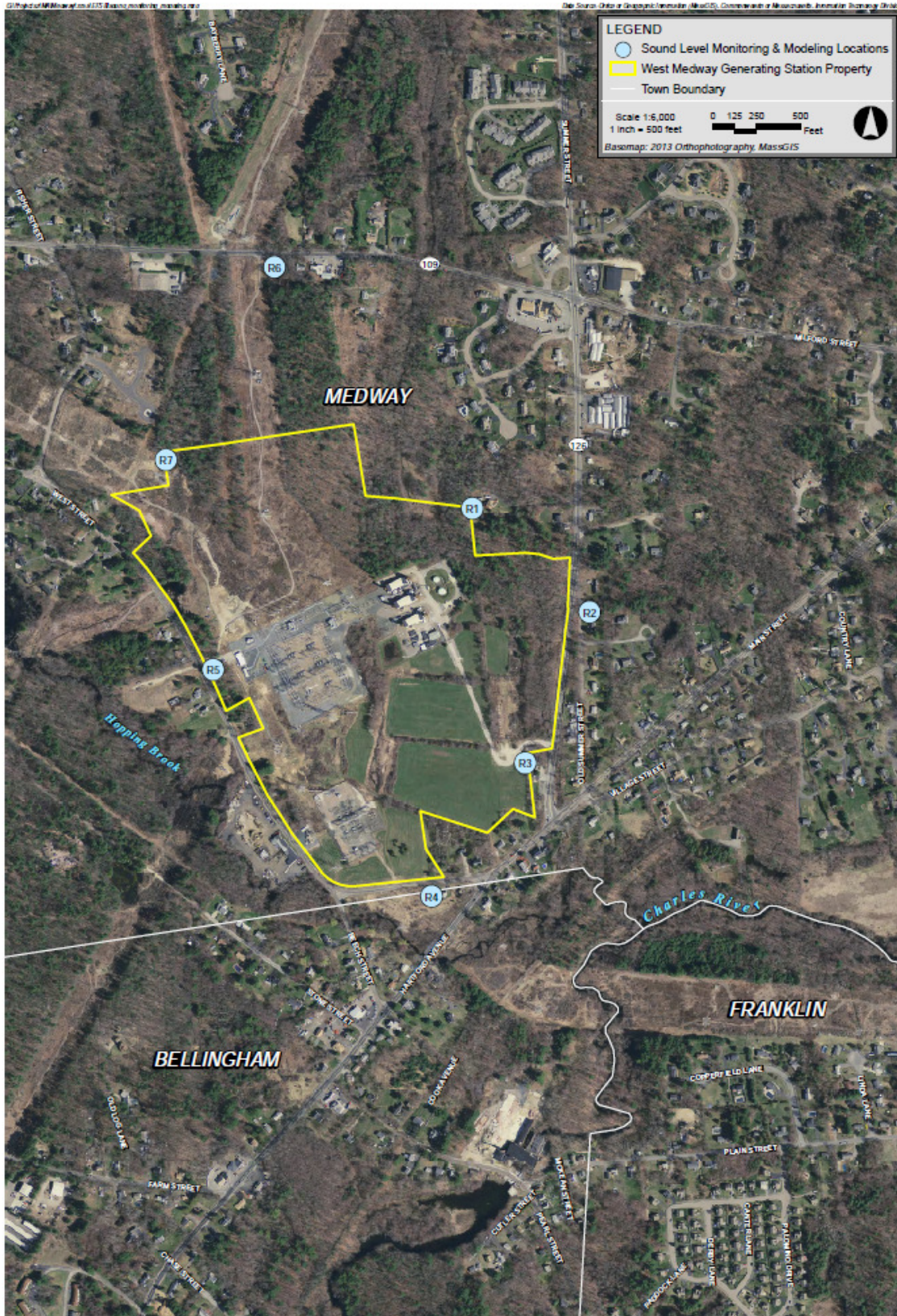


Figure 2.
Sound Levels (dBA) of Measured Daytime Ambient Background, Estimated Existing and Proposed Facilities, and Associated Increases at Community Locations.

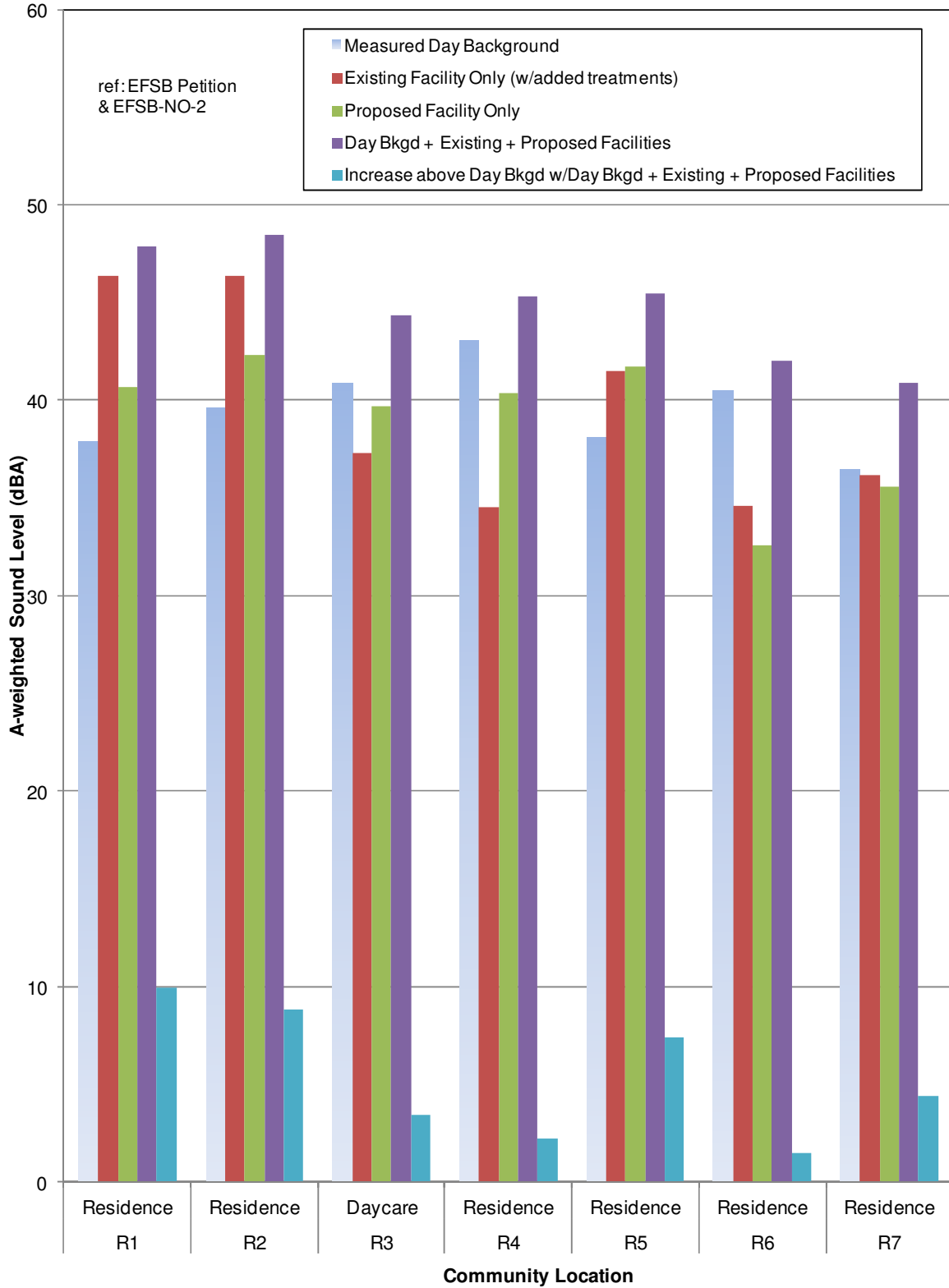


Figure 3.
Sound Levels (dBA) of Measured Nighttime Ambient Background, Estimated Proposed Facility, and Associated Increases at Community Locations.

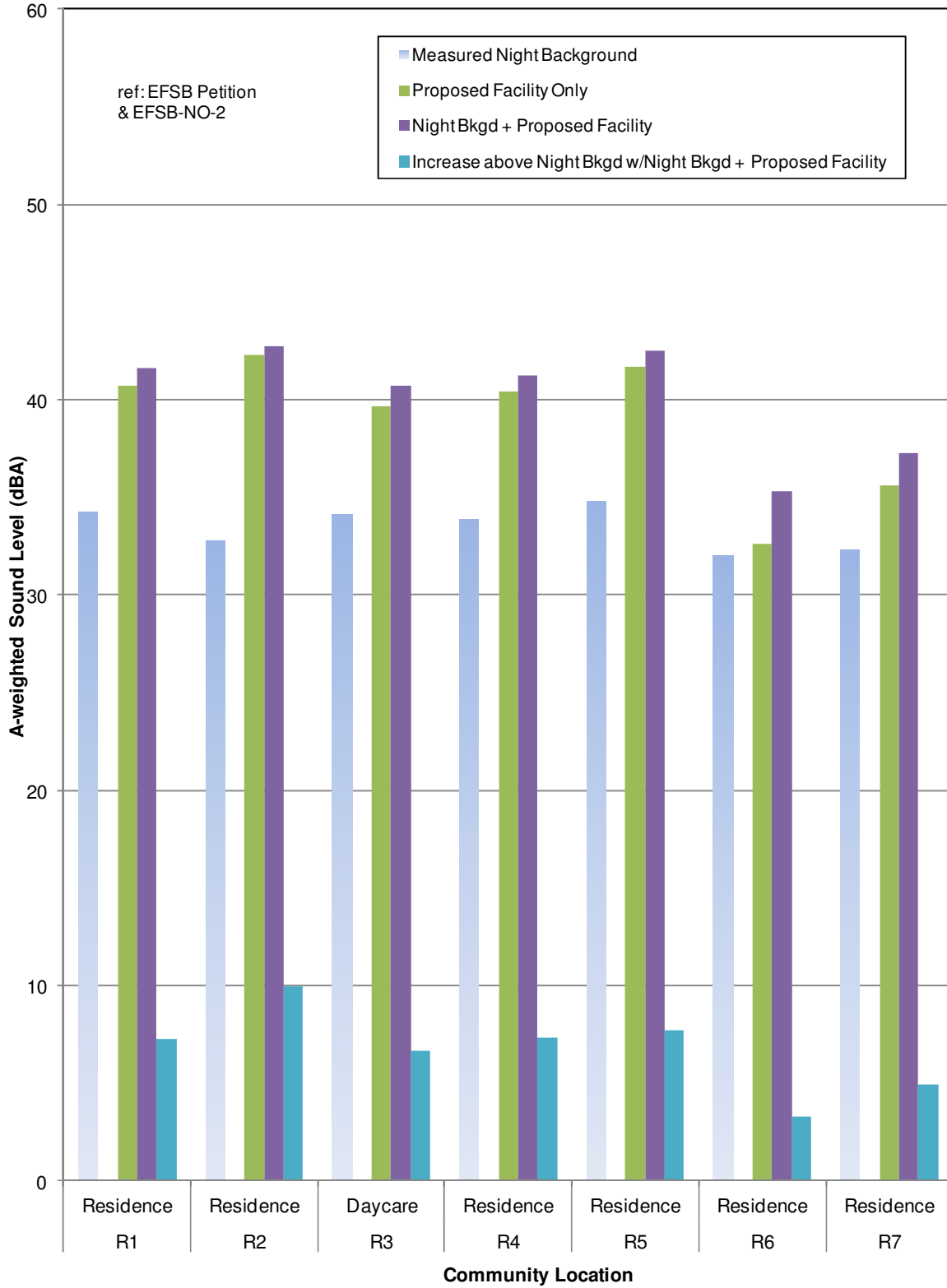
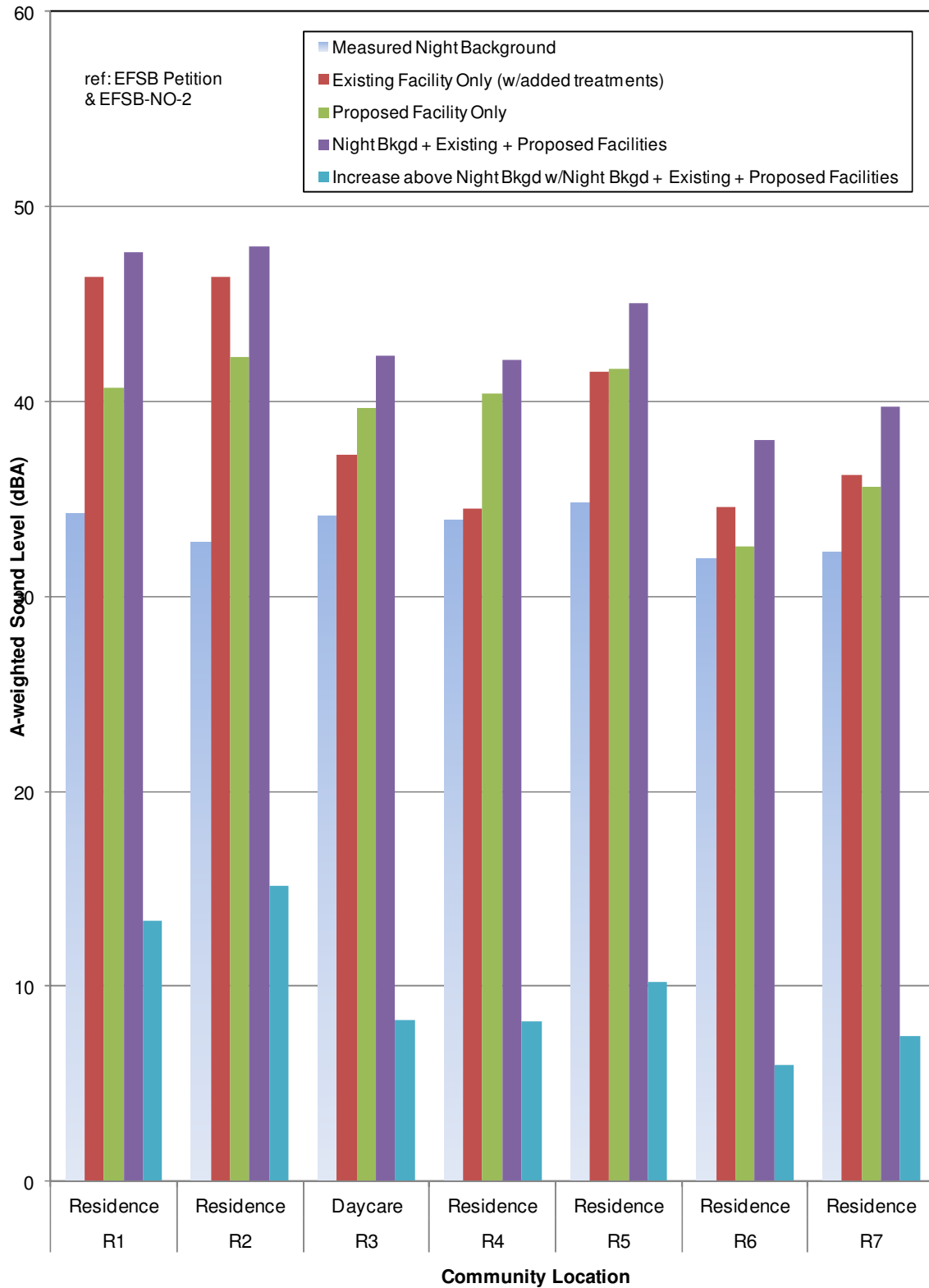


Figure 4.
Sound Levels (dBA) of Measured Nighttime Ambient Background, Estimated Existing and Proposed Facilities, and Associated Increases at Community Locations.



APPENDIX A
Noise Mitigation Measures Proposed by Exelon
(Ref: EFSB Petition and EFSB-NO-8 & 16)

As stated in submittals to the EFSB, Exelon proposes substantial noise mitigation treatments for both the proposed new units and the existing six units.

Proposed New Units

Exelon intends to purchase every noise control enhancement available from General Electric (GE) at a cost of approximately \$6 million dollars. These enhancements include:

- GE 'Low Noise' Configuration
 - Single-entry, louvered combustion air inlets with filters
 - Turbine and generator acoustical enclosures
 - Close-fitting noise barrier walls around turbine & generator enclosures
 - Turbine roof skid barriers
 - Turbine vent fan silencers
 - Acoustic enclosures for the VBV stack, water skid, and intercooler pipes
 - Lube oil sump pump barriers
- Combustion Exhaust Noise Control
 - Stack silencers
 - CO/SCR catalyst insertion losses
 - Fully-lined 90° bends
 - Perforated exhaust stacks
 - 5 dBA of additional noise reduction per stack

To provide additional mitigation for the GE equipment and other new equipment, Exelon is planning to expend \$10 million dollars for treatments that include:

- Gas Compressor Enclosure;
- Gas Compressor Yard Noise Barrier Wall (25 ft tall);
- Power Block Noise Barrier Wall (55 ft tall); and
- L-shaped Property-Line Noise Barrier Wall near #5 Summer St (R3, daycare center) (20 ft tall).

The noise barrier wall systems proposed for the gas compressor yard and power block area would be constructed of materials with adequate thickness and density to provide significant noise reduction in the lower octave-bands, normally achieved with solid, nonporous material (i.e., steel) or specially designed, commercially available, pre-cast concrete blocks. Louvered openings and other egress areas in the noise wall will be designed to achieve adequate transmission loss approximately equivalent to the wall itself. As a general design guideline, the interior faces of the barrier wall will be covered with sound absorbing material to avoid reflection from the barrier surface, which would increase sound levels at other locations.

Existing Units

Exelon identified a noise control plan to attenuate the sound levels from the six existing CTG's, which are expected to operate during infrequent daytime periods (6 AM – 11 PM) simultaneously with the proposed equipment. The current design consists of an 'L-shaped' noise barrier wall, approximately 25 feet high around the existing J2 lube oil cooler, acoustical louvers on the upper ventilation strips along the northern façades of the J2 and J3 buildings, and close-in 'L-shaped' barrier walls near the J1 and J3 generator inlets. Other noise control options may include a combination of acoustical louvers, enclosures, silencers, local barriers, and wing walls to be designed. Exelon has noted that the operation of all six existing CTGs alongside the two proposed units can be thought of as a "worst case" condition.