HUDSON LOGISTICS CENTER

SP #12-22 & CU #07-22

December 14, 2022

Staff Report #3

(please see Staff Reports #1-10/12/22 & #2-11/9/22 for additional detail)

SITE: Map 234/Lots 005, 034 & 035; Map 239/Lot 001; aka Green Meadow Golf Club

ZONING: General-1 (G-1)

PURPOSE OF PROPOSALS:
From the Site Plan Application: Proposed redevelopment of Property for a warehouse and distribution facility, representing a reduction of the scope of the approved Hudson Logistics Center originally approved by Site Plan Decision (SP #04-20) issued on May 5, 2021 for redevelopment of three (3) buildings having a footprint collectively consisting of 2,614,984 s.f., to a single building having a footprint of approximately 1,393,822 s.f. for warehouse, distribution, and associated uses and structures on a single 375.37-acre lot, along with access driveways, parking, stormwater/drainage, and other utility infrastructure, along with lighting, landscaping and other improvements shown on the plans.

From the Conditional Use Permit Application: Proposed redevelopment of property into the Hudson Logistics Center which includes a reduction in project scope originally approved, in part, by a Wetland Conditional Use Permit Decision (#02-20), by the Planning Board in April 21, 2021, for redevelopment of a single building having a building footprint of approximately 1,393,822 s.f. for warehouse, distribution and associated uses and structures, where a redevelopment of three (3) buildings having a footprint collectively consisting of 2,614,984 s.f were formerly approved, on a single 375,37 acre lot, along with access driveways, parking, stormwater/drainage, and other utility infrastructure, along with lighting, landscaping and other improvements shown on the plans.

A complete list of submittals provided at end of this report

APPLICATION TRACKING:

- September 12, 2022: Application received.
- September 14, 2022: Application determined as have potential for regional impact pursuant to RSA 36:56.
- October 12, 2022: Application accepted, public input received, site walk scheduled, hearing continued to November 9, 2022.
- October 22, 2022: site walk conducted.
- November 9, 2022: hearing continued, waivers granted from §276-13 – underground utilities, §275-8(C)(4) – parking space dimension, §193-10.G – number of driveways, §193-10.F – driveway width.
- November 14, 2022: Conservation Commission issued recommendation.
- December 14, 2022: hearing continuance scheduled.

ATTACHMENTS TO THIS STAFF REPORT

A. Conditional Use Permit Application Recommendation, Hudson Conservation Commission, dated November 14, 2022, received November 18, 2022. *Previous CUP decision included as reference*

B. Recommendation of Lower Merrimack River Advisory Committee

C. Fiscal Impacts, prepared by Police Chief Dionne, dated November 4, 2022 received November 7, 2022.

D. Fiscal Impact Analysis Addendum, prepared for Applicant by RKG Associates, dated November 15, 2022, received November 18, 2022.

E. Peer Review of Hudson Logistics Center Fiscal Impact Analysis and Real Estate Appraisal Services Report, prepared for Planning Board by Camoin Associates, dated/received November 21, 2022.

F. Peer Review of the Hudson Logistics Center Project Air Quality Modeling Report, prepared for Planning Board by TRC Companies, dated November 18, 2022, received November 21, 2022.

G. Response to Air Quality Peer Review, prepared for Applicant by Epsilon Associates, dated November 30, 2022.

H. Sound Level Assessment Report, prepared for Applicant by Epsilon Associates, dated November 23, 2022. (revised per peer review)

I. Fire Department Comment Response, prepared for Applicant by Langan Engineering, dated November 28, 2022.

J. Re: Hudson Logistics Center Amended Site Plan & Conditional Permit, SP# 12-22 CU# 07-22 Lowell & Steele Road, Map 239/Lot 001, from BCM Environmental & Land Law, dated/received November 16, 2022.

COMMENTS:

Conservation Commission & Lower Merrimack River Advisory Committee

On November 14, 2022 the Conservation Commission issued a recommendation for the Wetlands Conservation Overlay District Conditional Use Permit (See **Attachment A**). Also included for reference in the attachment is the notice of decision for the previous approval of the conditional use permit. The conditions of the Conservation Commission's recommendation remain the same as previous, with the exception of requiring plan notes/revisions that have been completed.

Additionally, the Applicant presented the application to the Lower Merrimack River Local Advisory Committee on November 30, 2022. Their findings are contained in the letter included here as **Attachment B**. The Committee decided not to make any substantive suggestions, finding that the overall environmental impact of the new design is less than the previously approved

project, but expressed the expectation that the commitments made to NHDES and the Town would be fulfilled.

Fiscal Impacts

The Applicant and their fiscal analyst, RKG Associates, met with the Police Chief, Fire Chief and Director of Public Works to further understand the potential impacts this development may have on the resources of their departments. In the course of this meeting, the Police Department provided additional information related to the project's potential impact on their department. Chief Dionne has identified equipment and training needs precipitated by the unique size and design of the proposed building (**Attachment C**).

As a result of the meeting and Chief Dionne's assessment, RKG submitted a Fiscal Impacts Analysis Addendum, included here as **Attachment D**.

Both the Fiscal Impact reports by RKG and the Real Estate Analysis Services Report by Wesley Reeks were peer reviewed by Camoin Associates, a sub-consultant of Fuss & O'Neill. The consultant that peer reviewed these reports for the previous Hillwood application has since retired. Camoin's report is included here as **Attachment E**. Their review identifies areas that could be expanded upon or improved, but indicate such changes would not affect the results or conclusions made by the Applicant's reports.

Air Quality & Sound Studies

The Applicant's Air Quality Impacts Report was peer reviewed on behalf of the Town by TRC Companies, a sub-consultant of Fuss & O'Neill (**Attachment F**). This review identified areas in need of additional information, clarification or correction. TRC also recommended a couple conditions of approval, summarized here as:

1. Hour of operations for testing and maintenance of the emergency engine should be restricted to mid-afternoon. This is anticipated as a mitigation practice in the Applicant's report.
2. Measures to mitigate fugitive dust during construction should be incorporated in the plan set. *Note: this was condition #37 in the previous approval.*

The Applicant's consultant provided a response to each of TRC's comments in **Attachment G**. A revised Air Quality Impacts Report incorporating these comments and revisions is expected in the near future.

Attachment H is the revised Sound Study pursuant to the comments made by peer review.

Additional Correspondence

Attachment I is the Applicant's response to comments received from the Fire Department. This letter was also reviewed directly with the Fire Chief in the meeting mentioned above with the Applicant and their consultant RKG Associates.

Attachment J is a letter received from Attorney Amy Manzelli, BCM Environmental & Land Law, PLLC, with a request that this letter be part of the Planning Board's record for this proposal.

RECOMMENDATIONS:
Staff recommends the Planning Board review the recommendation made by the Conservation Commission on the Conditional Use Permit (CUP) and consider whether or not to take action on the CUP application separately from the site plan application as was done previously. A draft motion is provided below for review and consideration. The Board may also wish to review the peer reviews, and response to, fiscal impacts/real estate, air quality and sound and if the Applicant has provided sufficient information. There are a few remaining items to be addressed by the Applicant including a revised plan set in response to peer review comments.

DRAFT MOTIONS

CONTINUE the site plan & conditional use permit applications:

I move to (accept/not accept) site plan application SP #12-22 and conditional use permit application CU #07-22, Hudson Logistics Center for Map 234/Lots 005, 034 & 035; Map 239/Lot 001, to date certain, _____.

Motion by: _____Second: _____Carried/Failed: _____

APPROVE the conditional use permit application:

I move to approve CU# 07-22 Wetlands Conservation Overlay District Conditional Use Permit for the Hudson Logistics Center; prepared by: Langan Engineering & Environmental Services, Inc., 100 Cambridge Street Suite 1310, Boston, MA 02114 and Gove Environmental Services, Inc., 8 Continental Drive Building 2 Unit H, Exeter, NH 03833; prepared for: Hillwood Enterprises, L.P, 5050 W. Tilghman St., Suite 435, Allentown, PA 18104; and Greenmeadow Golf Club, Inc., 55 Marsh Road, Hudson, NH 03051.; dated September 9, 2022; subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporates into the Notice of Decision, which shall be recorded at the HCRD, together with the Plan.

2. Construction and restoration shall comply with NHDES Best Management Practices set forth in New Hampshire Storm Water Manual Volume 3: Erosion and Sediment Control for construction and restoration, and erosion control measures that meet the Town Engineer's approval.

3. During construction and restoration, erosion control barriers shall be installed in accordance with the approved plans and maintained to the satisfaction of the Town Engineer and Conservation Commission.

4. The Town Engineer, or the Town's Civil Engineer, shall inspect the boundaries of the wetland and wetland buffer areas during construction and report any issues or violations to the applicant and the Conservation Commission for immediate remediation.

5. Installation Monitoring and Reporting: Installation of plantings within the 40.04-acre restoration area, as identified on the approved Amended Project Plans within the proposed conservation easement areas (the "Restoration Plantings" or "Restoration Area"), shall be inspected by an independent third-party monitor (i.e., Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant and in accordance with the construction and planting sequencing schedule, and the independent third-party monitor shall submit their findings to the Town Engineer and the Conservation Commission. Post-installation monitoring of the Restoration Plantings shall take place in accordance with Stipulation #5.

6. Post-Installation Monitoring and Reporting: Under the supervision of an independent third party monitor (i.e., Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant, the Restoration Plantings shall be monitored for five (5) years post installation (during the height of the growing season) and reports shall be submitted to the Town Engineer no later than November 18th of each year. At minimum, the annual reports shall address the 75% cover success standard, the presence, species and relative cover of invasive species anywhere in the Restoration Area, and include photographs from predetermined photo stations. If necessary, the reports shall also detail any recommended remedial actions, such as replanting underperforming areas in order to meet success standards, invasive species control, and stabilization of soils. Any such remedial actions shall be performed by the Applicant, at their expense.

7. Any vegetation associated with post-construction BMP's shall be suitably established to withstand erosion.

8. Any proposed landscaping within jurisdictional resource areas shall consist of species native to northeastern USA region.

9. The final landscaping plan shall be adjusted as may be required by the NHDES under the Alteration of Terrain or Wetlands Permits for the project. Prior to implementation, a final landscaping plan with plant schedule shall be submitted to the Town Planner and the Town Engineer.

10. Invoices for the purchase of native New England seed mixes/plantings shall be provided to the Town Engineer upon availability and before installation.

11. Prior to final seeding, an invasive species inventory shall be performed by the Applicant, at their expense, and shall be delivered to the Town Engineer to provide baseline documentation of invasive species that are either within the Restoration Areas or adjacent thereto.

11. If necessary, during the monitoring timeline discussed in Stipulations 4, 5 and 10, methods for more involved management of invasive species within the Restoration Area

(such as root barriers for Phragmites or herbicide application) shall be discussed with the Engineering Department. Implementation of any proposed non-manual methods shall be reviewed and approved by the Town Engineer and implemented, if at all, by the Town of Hudson.

12. Upon beginning work in resource areas, the applicant shall submit written progress reports to the Town Engineer every month detailing work performed in or near resource areas, and work that is anticipated to be done over the next period. To the extent applicable, these reports shall update the construction sequence and be incorporated into the weekly erosion control reports.

13. Fertilizers utilized for landscaping and lawn care shall be slow release, low-nitrogen types (<5%), and shall not be used within 25 feet of a wetland resource area. Pesticides and herbicides shall not be used within 25 feet of a wetland resource area, and between 25 and 50 feet from a wetland resource area, a state-approved aquatic-friendly herbicide can be used to remove invasive species. A list of the products to be used shall be provided to the Town Engineer prior to application

14. In addition to the existing landscaping and restoration plans showing planting and restorations in the upland and easement areas additional shrub and tree varieties should be planted with the planned meadow mix grasses along the two proposed roadways to aide in slope stabilization along these roadways.

Motion by: _____Second: _____Carried/Failed: _____

APPENDIX: LIST OF SUBMITTALS AND ATTACHMENTS

PLAN UNDER REVIEW:
Hudson Logistics Center, Site Plan & Wetlands Conditional Use Applications; dated September 9, 2022; consisting of 164 sheets including cover, and notes on Sheet CS003; prepared by: Langan Engineering & Environmental Services, Inc., 888 Boylston St., Boston, MA 02116, with surveying by: Hayner/Swanson, Inc., 3 Congress St., Nashua, NH 03062, and wetlands & natural resources by: Gove Environmental Services, 8 Continental Drive Bldg. 2, Unit H, Exeter, NH 03833; prepared for Applicant, Hillwood Enterprises, L.P. 5050 W. Tilghman St., Suite 435, Allentown, PA 18104 and Owner, Greenmeadow Golf Club, Inc., 55 Marsh Rd., Hudson, NH 03051.

Additional site plan submittals under review:

1. Hudson Logistics Center – Site Plan Narrative, prepared by Smolak & Vaughan, LLP & Donahue, Tucker & Ciandella, PLLC, dated September 12, 2022.
2. Traffic Impact Study for Hudson Logistics Center, prepared by Langan Engineering, dated September, 2022, and Executive Summaries.
3. Stormwater Management Report, prepared by Langan Engineering, dated September 2022, and Executive Summaries.
4. Geotechnical Engineering Study for Hudson Logistics Center, prepared by Langan Engineering, dated September 9, 2022, and Executive Summaries.
5. Air Quality Impacts Report, prepared by Epsilon Associates, Inc., dated September 7, 2022.
6. Sound Level Assessment Report, prepared by Epsilon Associates, Inc., dated September 7, 2022.
7. Real Estate Appraisal Services Report, Proposed Hudson Logistics Center, dated September 7, 2022, prepared by Wesley G. Reeks, MAI.
8. Letter from John D. Krebs, dated September 7, 2022.
9. Fiscal Impact Analysis –Hudson Logistics Center, prepared by RKG Associates, Inc., dated September 9, 2022.
10. Waiver Requests, prepared by Langan Engineering.

Additional Conditional Use Permit Application Submittals Under Review:

11. Revised Hudson Logistics Center, Application for Amended Conditional Use Permit, prepared by prepared by Smolak & Vaughan, LLP & Donahue, Tucker & Ciandella, PLLC, dated September 12, 2022
12. Wetland Natural Resources Report for Revised Hudson Logistics Center Project, prepared by Gove Environmental Services, Inc., dated September 9, 2022.
13. Wildlife Habitat Evaluation: 2022 Update, prepared by Lucas Environmental, LLC, dated September 9, 2022.

**PDF copies of application materials can be found here:*
https://www.hudsonnh.gov/planning/page/hudson-logistics-center-2022

OCT 12 REPORT #1 ATTACHMENTS

A. Town Department Review Comments as of 10/8/22
B. Peer Review, Land Use Regulations, prepared by Fuss & O'Neill, dated September 28, 2022.
C. Peer Review, Traffic Study, prepared by Fuss & O'Neill, dated September 28, 2022.
D. Peer Review, Sound Study, prepared by HMMH, dated September 29, 2022.

NOV 9 REPORT #2 ATTACHMENTS

A. Response to Peer Review of Site Plan, received October 13, 2022
B. Response to Peer Review of Traffic, received October 13, 2022
C. Response to Peer Review of Sound Study, received October 13, 2022
D. Supplemental Information, received October 26, 2022
    a. Response to Town Engineer Comments
    b. Response to comments received at October 12, 2022 Planning Board hearing.
    c. Revised Infiltration Feasibility for Stormwater Report
    d. Addendum to Appraisal Service Report
E. Written Public Input Received, as of November 1, 2022

DEC 14 REPORT #3 ATTACHMENTS

A. Conditional Use Permit Application Recommendation, Hudson Conservation Commission, dated November 14, 2022, received November 18, 2022. *Previous CUP decision included as reference*
B. Recommendation of Lower Merrimack River Advisory Committee
C. Fiscal Impacts, prepared by Police Chief Dionne, dated November 4, 2022 received November 7, 2022.
D. Fiscal Impact Analysis Addendum, prepared for Applicant by RKG Associates, dated November 15, 2022, received November 18, 2022.
E. Peer Review of Hudson Logistics Center Fiscal Impact Analysis and Real Estate Appraisal Services Report, prepared for Planning Board by Camoin Associates, dated/received November 21, 2022.
F. Peer Review of the Hudson Logistics Center Project Air Quality Modeling Report, prepared for Planning Board by TRC Companies, dated November 18, 2022, received November 21, 2022.
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I. Fire Department Comment Response, prepared for Applicant by Langan Engineering, dated November 28, 2022.
J. Correspondence from BCM Environmental & Land Law dated/received November 16, 2022.

RECEIVED AT MEETING

Sight Line Study dated Septemnber 23, 2022, received at meeting October 12, 2022

TOWN OF HUDSON

Conservation Commission

William Collins, Chairman Dave Morin, Selectmen Liaison

12 School Street • Hudson, New Hampshire 03051 • Tel: 603-886-6008 • Fax: 603-816-1291

Motion to Recommend Conditional Use Permit Application

Date: November 14, 2022

Case: Hudson Logistics Center-Amended Site Plan and Conditional Use Permit Application
Hudson, New Hampshire
Map 234, Lots 5, 34, and 35, Map 228 Lot 4 and Map 239, Lot 1
Zone: General (G1) and Business (B)

Description of work to be performed: The project proposes construction of two new access roadways, the first, proposed Green Meadows Drive which extends from Lowell Road and the second, proposed Northern Access Road extending from Walmart Boulevard. One warehouse building, driveways and parking areas surrounding the facility and numerous retention ponds to manage storm-water runoff. The site plan if built will have a permanent wetland impact of 47,719 square feet a permanent wetland buffer impact of 146,249 square feet a temporary wetland impact of 2,613 square feet and a temporary wetland buffer impact of 6,486. As stated by the applicant a majority of these impacts will occur along the two proposed access driveways.

Note: Prior to tonight's meeting representatives of Hillwood Development have presented information on wetland and wetland buffer impacts, roadway design and storm water management design. Two site walks of the property have been completed by commission members along with residents of the community. The applicant has responded to numerous comments and input from conservation commission and through multiple meetings and public input sessions has redesigned the roadway and other parts of the project to reduced overall wetland and buffer impacts.

Members Present: William Collins, Ken Dickinson, Sandra Rumbaugh, Brian Pinsonneault

Conservation Members Stepping Down: William Kallgren

Alternates Seated: Linda Kriscuinas

Motion to "Recommend"

Mr. Dickinson moved to recommend a favorable acceptance of the Conditional Use Permit application by the Hudson Planning Board for the application filed by representatives of Hillwood Logistic Center reference Tax Map 234, Lots 5, 34 & 35; Map 228, Lot 4 and Map 239, Lot 1 dated September 12, 2022, After application review the Hudson Conservation Commission finds that the uses presented by the applicant for access to the upland portion of the property and for storm water management comply with Town of Hudson Zoning Ordinance 334, Article IX- Wetland Conservation Overlay District, paragraphs 334-36(C) 2, through 4 and 334-37. This favorable acceptance is contingent upon Planning Board approval of the proposed plan and with the recommended actions listed below.

1. Construction and restoration shall comply with NHDES Best Management Practices set forth in New Hampshire Storm Water Manual Volume 3: Erosion and Sediment Control for construction and restoration, and erosion control measures that meet the Town Engineer's approval.

2. During construction and restoration, erosion control barriers shall be installed in accordance with the approved plans and maintained to the satisfaction of the Town Engineer and Conservation Commission.

3. The Town Engineer, or the Town's Civil Engineer, shall inspect the boundaries of the wetland and wetland buffer areas during construction and report any issues or violations to the applicant and the Conservation Commission for immediate remediation.

4. Installation Monitoring and Reporting: Installation of plantings within the 40.04-acre restoration area, as identified on the approved Amended Project Plans within the proposed conservation easement areas (the "Restoration Plantings" or "Restoration Area"), shall be inspected by an independent third-party monitor (i.e., Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant and in accordance with the construction and planting sequencing schedule, and the independent third-party monitor shall submit their findings to the Town Engineer and the Conservation Commission. Post-installation monitoring of the Restoration Plantings shall take place in accordance with Stipulation #5.

5. Post-Installation Monitoring and Reporting: Under the supervision of an independent third party monitor (i.e., Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant, the Restoration Plantings shall be monitored for five (5) years post installation (during the height of the growing season) and reports shall be submitted to the Town Engineer no later than November 18th of each year. At minimum, the annual reports shall address the 75% cover success standard, the presence, species and relative cover of invasive species anywhere in the Restoration Area, and

include photographs from predetermined photo stations. If necessary, the reports shall also detail any recommended remedial actions, such as replanting underperforming areas in order to meet success standards, invasive species control, and stabilization of soils. Any such remedial actions shall be performed by the Applicant, at their expense.

6. Any vegetation associated with post-construction BMP's shall be suitably established to withstand erosion.

7. Any proposed landscaping within jurisdictional resource areas shall consist of species native to northeastern USA region.

8. The final landscaping plan shall be adjusted as may be required by the NHDES under the Alteration of Terrain or Wetlands Permits for the project. Prior to implementation, a final landscaping plan with plant schedule shall be submitted to the Town Planner and the Town Engineer.

9. Invoices for the purchase of native New England seed mixes/plantings shall be provided to the Town Engineer upon availability and before installation.

10. Prior to final seeding, an invasive species inventory shall be performed by the Applicant, at their expense, and shall be delivered to the Town Engineer to provide baseline documentation of invasive species that are either within the Restoration Areas or adjacent thereto.

11. If necessary, during the monitoring timeline discussed in Stipulations 4, 5 and 10, methods for more involved management of invasive species within the Restoration Area (such as root barriers for Phragmites or herbicide application) shall be discussed with the Engineering Department. Implementation of any proposed non-manual methods shall be reviewed and approved by the Town Engineer and implemented, if at all, by the Town of Hudson.

12. Upon beginning work in resource areas, the applicant shall submit written progress reports to the Town Engineer every month detailing work performed in or near resource areas, and work that is anticipated to be done over the next period. To the extent applicable, these reports shall update the construction sequence and be incorporated into the weekly erosion control reports.

13. Fertilizers utilized for landscaping and lawn care shall be slow release, low-nitrogen types (<5%), and shall not be used within 25 feet of a wetland resource area. Pesticides and herbicides shall not be used within 25 feet of a wetland resource area, and between 25 and 50 feet from a wetland resource area, a state-approved aquatic-friendly herbicide can be used to remove invasive species. A list of the products to be used shall be provided to the Town Engineer prior to application

14. In addition to the existing landscaping and restoration plans showing planting and restorations in the upland and easement areas additional shrub and tree varieties should be planted with the planned meadow mix grasses along the two proposed roadways to aide in slope stabilization along these roadways.

Motion second Mr. Pinsonneault

This motion is based on the plan(s) submitted by the applicant. It is recommended that if additional impacts are made the plan be returned to the Conservation Commission for further review.

Roll Call Vote: Mrs. Kriscuinas __Yes_ , Mr. Dickinson __Yes_ Mr. Pinsonneault _Yes_
Mr. Collins _Yes Mrs. Rumbaugh _Yes_

William G Collins

_____
William Collins
HCC Chairman

A copy of this recommendation shall be stapled to the CUP application and forward it to the Town Planning Office for inclusion in the Planning Board Member Packets.

NOTICE OF APPROVAL

May 13, 2021

Owner or Applicant: HILLWOOD ENTERPRISES, L.P.
5050 W. TILGHMAN ST., SUITE 435
ALLENSTOWN, PA 18104

On Wednesday, April 21, 2021, the Hudson Planning Board heard subject case **CU# 02-20** "**Hudson Logistics Center Conditional Use Permit**".

LOCATION: LOWELL & STEELE ROAD, MAP 234/LOTS 5 & 34, & MAP 239/LOT 1

The Planning Board moved to approve the Wetlands Conservation Overlay District Conditional Use Permit for the Hudson Logistics Center; prepared by: Langan Engineering & Environmental Services, Inc., 888 Boylston St., Boston, MA 02116; prepared for: Hillwood Enterprises, L.P, 5050 W. Tilghman St., Suite 435, Allentown, PA 18104; and, Greenmeadow Golf Club, Inc., C/O Thomas Friel, 55 Marsh Rd., Hudson, NH 03501; dated April 21, 2020; last revised March 10, 2021; subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporated into the Notice of Decision, which shall be recorded at the HCRD, together with the Plan.

2. Construction and restoration shall comply with NHDES Best Management Practices set forth in New Hampshire Storm Water Manual Volume 3: Erosion and Sediment Control for construction and restoration, and erosion control measures that meet the Town Engineer's approval.

3. During construction and restoration, erosion control barriers shall be installed in accordance with the approved plans and maintained to the satisfaction of the Town Engineer and Conservation Commission.

4. The Town Engineer, or the Town's Civil Engineer, shall inspect the boundaries of the wetland and wetland buffer areas during construction and report any issues or violations to the applicant and the Conservation Commission for immediate remediation.

5. A stipulation and or note shall be added to the plan that states "Construction vehicles (non-refueling vehicles) shall not be parked within 25 feet of any wetland or wetland buffer boundaries overnight".

6. A stipulation and or note shall be added to the plan that states, "Refueling vehicles shall not be parked overnight or left unattended within 50 feet of any wetland or wetland buffer boundaries".

7. A stipulation and or note shall be added to the plan that states, "Stockpiling of construction materials is not allowed in the wetland or wetland buffer areas of the site or in areas designated for permanent conservation".

8. A stipulation and or note shall be added to the plan that states, "Storage sheds for chemicals used to manage snow and ice at the site shall not be placed within 50 feet of the wetland or wetland buffer areas and such storage areas shall be shown on the final plan set.

9. Members of the Conservation Commission shall be allowed to witness the draw down and relocation of wildlife of the manmade ponds listed as impact areas. At least two weeks notice shall be provided to the Town of Hudson Engineering Department to facilitate this request. To the extent that a potential quorum will occur during this observation, the applicant shall notice the Engineering Department with sufficient time to provide proper public notification, as necessary.

10. An independent third party monitor for plantings (i.e. Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant, shall inspect the installation of the restoration areas and submit their findings to the Town Engineer and the Conservation Commission. Timing and scheduling of these inspections and reports shall be set by the Town Engineer. The post installation monitoring of the restoration areas shall take place in accordance with Stipulation #11.

11. Under the supervision of an independent third party monitor (i.e. Professional Landscape Architect and/or Professional Wetland Scientist), at the expense of the Applicant, the restoration areas shall be monitored for five (5) years post installation (during the height of the growing season) and reports shall be submitted to the Town Engineer no later than November 18th of each year. At minimum, the annual reports shall address the 75% cover success standard, the presence, species and relative cover of invasive species anywhere in the restoration areas, and include photographs from predetermined photo stations. If necessary, the reports shall also detail any recommended remedial actions, such as replanting underperforming areas in order to meet success standards, invasive species control, and stabilization of soils. Any such remedial actions shall be performed by the Applicant, at their expense.

12. Any vegetation associated with post-construction BMP's shall be suitably established to withstand erosion.

13. Any proposed landscaping within jurisdictional resource areas shall consist of species native to northeastern USA region.

14. The final landscaping plan shall be subject to any adjustments as may be required by the NHDES under the Alteration of Terrain or Wetlands Permits for the project. Prior to implementation, a final landscaping plan with plant schedule shall be submitted to the Town Planner and the Town Engineer.

15. Invoices for the purchase of native New England seed mixes/plantings shall be provided to the Town Engineer upon availability and before installation.

16. Prior to final seeding, an invasive species inventory shall be performed by the Applicant, at their expense, and shall be delivered to the Town Engineer to provide baseline documentation of invasive species that are either within restored areas or adjacent thereto.

17. If necessary, methods for more involved management of invasive species (such as root barriers for Phragmites or herbicide application) shall be discussed with the Engineering Department. Implementation of any proposed non-manual methods shall be reviewed and approved by the Town Engineer.

18. Upon beginning work in resource areas, the applicant shall submit written progress reports to the Town Engineer every month detailing work performed in or near resource areas, and work that is anticipated to be done over the next period. To the extent applicable, these reports shall update the construction sequence and be incorporated into the weekly erosion control reports.

19. Fertilizers utilized for landscaping and lawn care shall be slow release, low-nitrogen types (<5%), and shall not be used within 25 feet of a wetland resource area. Pesticides and herbicides shall not be used within 25 feet of a wetland resource area, and between 25 and 50 feet from a wetland resource area, a state-approved aquatic-friendly herbicide can be used to remove invasive species. A list of the products to be used shall be provided to the Town Engineer prior to application.

20. A note shall be added to the plan that states: Conservation Wetland Overlay District Markers shall be placed at 100-foot intervals along the conservation easement areas, post construction, as approved by the Town Engineer, to clearly identify the conservation easement areas.

Signed: _____ Date: _____
Brian Groth
Town Planner

cc: Langan Engineering & Environmental Services, Inc.
Greenmeadow Gold Club, Inc.
John T. Smolak, Smolak & Vaughan LLP

LOWER MERRIMACK RIVER LOCAL ADVISORY COMMITTEE

Hudson • Litchfield • Merrimack • Nashua

Ridge Mauk
NHDES

December 1, 2022

RE: Alteration of Terrain (AoT) Bureau Permit Application (RSA 485-A:17);
NHDES File Number: 221104-198 Project Name: Hudson Logistics Center
Subject Property: Tax Map# 234; 239, Lot# 5, 34, 35; 1

Dear Mr. Mauck,

This Project was the subject of a presentation before the LMRLAC at our last meeting, on November 30, 2022, by Frank Holmes and Brendan Quigley.

The presenters reviewed the site plan documents and answered questions posed to them by Committee members.

A prior iteration of the applications for this site was presented to this Committee in 2020. At the time, it was expected that the site would be occupied by Amazon. Subsequently, all permits for that prior Project were approved subject to certain conditions. Since then, Amazon decided not to occupy the premises, and the owner, Hillwood Enterprises, L.P., created amended applications (that were the subject of last night's presentation). The new applications, we were told, incorporate the prior commitments made to NHDES while substantially reducing the footprint of the previously approved Project.

In the circumstances, where the over-all environmental impact of the new design is less than the previously approved Project, the Committee decided not to make any substantive suggestions with the hope and expectation that the commitments made to NHDES and the Town of Hudson (including conservations easements and an increased building set back from the Merrimack River) would be fulfilled.

Thank you for your consideration of these comments.

Sincerely,

Francis G. Murphy, Chair
LMRLAC

cc: Brendan Quigley
Frank Holmes

TOWN OF HUDSON

Police Department

Partners with the Community

1 Constitution Drive, Hudson, New Hampshire 03051
Voice/TTY (603) 886-6011/Crime Line (603) 594-1150/Fax (603) 594-1162

Tad K. Dionne
Chief of Police

Captain David A. Cayot
Special Investigations Bureau

Captain David A. Bianchi
Administrative Bureau

Captain Michael Davis
Operations Bureau

November 4, 2022
Brian Groth
Town Planner
12 School Street
Hudson, NH 03051

RE: Fiscal Impacts, Hudson Logistics Center

Dear Mr. Groth,

Enclosed please, please find a brief summary of impact costs for the Police Department with regards to the Hudson Logistics Center. The costs are associated with potential needs to respond to a critical incident at a facility as large as the one proposed. As discussed before, I do not agree with the impact assessment conducted previously by Chief Avery. I believe his assessment is based on a routine day. An assessment for this type of building must take into consideration critical incidents.

A few examples of the type of incidents I am referring to would be an active shooter, any mass casualty event, and a serious vehicle crash on site, or off site with vehicles traveling to and from the building. Most of the impact costs are for equipment we would find essential. I only included training costs for the equipment that needs initial training. Subsequent training costs, or training costs conducted that could be incorporated with existing training I do not consider to be an impact cost.

Please let me know if you have any questions.

Respectfully,

Tad Dionne
Chief of Police

Critical Incident/Active Shooter Equipment/Search and rescue for large industrial spaces

DJI AVATA Pro – Indoor Drone system allowing interior search of buildings		$1500
Training/licenses associated		500
RED DOT Conversion and holsters -	$27000	
Training instructors (one time cost)	1200	
Training Officers (one time cost)	25,000	
Ammo and supplies (one time cost)	10000	
	$63,200	$63,200
DJI Matrice 30T- Outdoor drone w/thermal imaging allowing standoff for target identification capabilities/search and rescue operations.	$13,000	
Training/licenses associated		500

Active shooter response tools for each officer – to include:

Rifles with appropriate optics/illumination systems/cases for Special Investigations Unit	
$1999 plus optics Eotech, $609 weapon light $135/Rifle bag $50 = $2793 X 6 =	$16,758
Ballistic plates - lightweight rifle rated plates fit our current outer carriers? $634 X 51 =	$32,334
Individual First Aid Kits – for officers to address any injuries they might sustain $89 X 51=	$4539
Training – will incorporate it with First Aid Training	$0
Mass casualty response kits – address injuries an officer will have to triage of others	
$500 X 2 =	$1000
Training – will incorporate it with First Aid Training	$0
Lightweight Shields	$37,500
Shield training – will incorporate with yearly shield training	$0
TOTAL	**$170,831**

Above are impact costs we foresee in the event of a critical incident at a facility such as proposed. Initial training costs are accounted for with regards to the RED DOT pistol Conversion and the drones. All other training will be incorporated with similar training we would normally conduct and therefore would not be considered additional.

RKG ASSOCIATES INC

76 Canal Street, Suite 401
Boston, MA 02114
Tel: 617-847-8912
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ADDENDUM MEMORANDUM

TO: Brian Kutz
Vice President of Development
Hillwood Enterprises, LP
5050 W. Tilghman Steet – Suite 435
Allentown PA 18104

DATE: November 15, 2022

SUBJECT: Fiscal Impact Analysis Addendum – Hudson Logistics Center

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Following the presentation and hearing before the Hudson Town Planning Board (October 12, 2022) concerning the Amended Project proposal for the Hudson Logistics Center, RKG has been requested to offer responses to staff inquiries and/or additional information for our report (dated September 9, 2022). As such, this memorandum supplements RKG's "*Technical Memorandum – Fiscal Impacts Analysis, Hudson Logistics Center*," dated September 9, 2022 (hereinafter the RKG Report).

A. Tax Revenue Clarifications

Per the Town and the Town Assessor, a question was raised concerning a distinction on the interpretation of tax revenue, and the discrepancy between additional revenue versus a new source of revenue.

In response, RKG offers that the estimated property tax revenues, realized from the completed and stabilized Hudson Logistics Center, reflect its estimated assessed valuation and contributory taxes (in FY 2022 dollars). Technically, this may be considered as new revenue but only insomuch as it represents the revenue generated specifically from the Hudson Logistics Center. In the RKG analysis, the components of this estimated tax revenue have been presented to reflect the following:

- Gross tax revenue to the Town of Hudson - $1,298,936
- Gross tax revenue to Schools (State) - $406,416
- Gross tax revenue to Schools (Local) - $2,372,749
- Gross tax revenues to the County - $239,068

With specific respect to the Town of Hudson, the gross property taxes have been adjusted to account for the estimated costs of providing Town services and the estimated loss in tax revenues from the property as it currently exists:

- Net Town taxes only are derived from taking the gross projected taxes of $1,298,936, and subtracting both Town costs of $335,143, and the current local property taxes of $40,672 = **$923,121**

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In RKG's assessment, the relevant question is not whether these represent new tax revenues, but instead, whether the estimated tax revenues are sufficient to cover the costs to the Town such that the Hudson Logistics Center does not represent a net fiscal burden to the Town.

As indicated in the preceding discussion, the estimated net property tax revenues associated with the Amended Project clearly meet this criteria. As also indicated in the RKG Report, while the assessed valuation estimates and resulting property tax estimates are reasonable, they are nonetheless subject to revision from the Town Assessor once the Amended Project is fully built and stabilized and as an income-based approach to valuation is utilized rather than a cost approach to valuation.

B. Comments on Additional Versus Re-Allocated Tax Revenues

The Town Assessor also offered a discussion of new versus re-allocated tax revenues, indicating that *"it is important to note that this is NOT additional property tax revenue. This is a new geographic source of that revenue, but, unless the municipal budget increases, this would not be additional property tax revenue".*

In response, RKG offers that the Town's municipal budget has recently increased, and is projected (FY 2024)[1] to increase (proposed but not yet approved), noting the following:

- Actual FY 2022 - $36,704,151
- Approved FY 2023 - $38,500,285 (a 4.9% increase over FY 2022)
- Board of Selectmen Proposed FY 2024 - $39,783,956 (a 3.3% increase over FY 2023)

C. Summary of Comments from Department Heads on the Amended Project

Prior to summarizing the comments from various Town Departments, it is worth noting that with respect to the Amended Project, the developer (Hillwood) has committed to a total amount of $7.75 million in exactions as well as the funding of other matters which were included as a part of the Approved Project Site Plan Decision and which we anticipate will be incorporated into an Amended Project Site Plan Decision, including but not limited to the following:

- $1,000,000 – to provide funding for Fire and Police Department costs associated with training and other equipment as may be necessitated by the Project.
- $1,400,000 – specifically for the Fire Department to procure a platform truck.
- $200,000 – to provide funding for the Hudson Planning Board and Planning Department to conduct master planning activities and outreach.
- Up to $1,000,000 - Condition #68 - the Applicant agrees to fund the following potential future improvements at the town intersection of Lowell Road/Wason

[1] Memorandum to the Board of Selectmen, regarding FY 2024 Town Operating Budget, dated 7 October 2022.

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Road/Flagstone Drive as identified in the Traffic Impact Study, dated September of 2020. The Applicant shall fund the physical improvements in the form of an escrow account with $100,000 increments (with the Applicant's total obligation not to exceed $1,000,000), as needed and requested by the Engineering Department.

These above referenced items are in addition to the Project Impact Fees (or CAP Fees), which are projected to be approximately $1.67 million.[2] On October 27, 2022, RKG Associates attended an in-person meeting with selected Town Department Heads and the development team to further discuss any issues or concerns with the Amended Project as it relates to fiscal impacts, including service costs. The following summarizes input from that meeting with respect to the Amended Project:

- **Jess Forrence – Public Works Director** - Mr. Forrence indicated that most all of his prior concerns have been sufficiently addressed with the Amended Project, as now proposed and in light of the *Impact Mitigation and Exactions* (as offered by Hillwood) and additional site plan conditions (*SP#4-20*) – both as summarized in the RKG memorandum of September 9, 2022. *Director Forrence also commented that as on-site maintenance and expense of the development would be privately maintained, and that roadways accessing the development were state-maintained – neither result in impacts to his department*. Lastly, Director Forrence commented that the fees associated with all these changes and inspections covers the time and effort, so from a fiscal impact standpoint suggesting a net neutral impact of the Amended Project.

- **Tad Dionne – Chief of Police** - Chief Dionne noted that his department is equipped to address traffic and that he does not see any major concerns with the Amended Project from that standpoint. The infrastructure improvements and limited access in and out of the site help to mitigate potential congestion and safety issues. While in general, Mr. Dionne did not indicate that the Amended Project would necessarily have an impact on his department's capacity to provide typical day-to-day response and call activity for the development, he did indicate some level of additional equipment for his department would be required, as would proper training of Police personnel to respond effectively and safely to such a critical incident. In a memorandum from Chief Dionne (dated November 4, 2022), he indicated estimated costs associated with such equipment, training, and preparedness to be approximately $170,831.

  RKG notes that the mitigation items addressed by Hillwood includes a $1.0 million allocation for Fire and Police Department costs associated with training and other equipment as may be necessitated by the Project. As RKG understands, there will be internal discussions between the Fire Chief and the Police Chief regarding the departmental allocation of these funds.

  Chief Dionne further noted that such additional costs (equipment and training) would likely be a one-time up-front expense. Required training for new officers would be addressed within the Police Department's normal budget and operations thereafter.

[2] Please refer to the RKG Report for a further description of these fees and exactions.

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If the Police Department could train personnel in the actual building itself, as opposed to off-site, this would be helpful.

Other questions were raised regarding the building and property's external and internal security measures, and that as construction of the Project progresses, Hillwood Team personnel would meet with Police and other emergency services personnel to go over safety procedures and protocol. RKG understands these issues will be addressed by Hillwood and/or the eventual tenant (Target).

- **Scott Tice – Fire Chief** – Chief Tice commented that since the time of the Approved Project, certain costs have increased, and the Fire Department is reviewing the same. RKG understands this is an ongoing discussion between the developer (Hillwood) and the Town. The Fire Chief also commented that the Fire Department budget costs, cited in the RKG September 9, 2022, report appeared to be low in his opinion. However, RKG noted that these reflect an estimate of variable costs for the Fire Department and not total department costs.

- **Other General Government Departments/Functions** - As with the analysis completed for Approved Project, RKG has also included an allowance of potential Town costs as may be related to the Town Clerk, planning and other town hall functions. RKG reiterated the estimated one-time building permit fees of approximately $888,993 to cover building permit and inspectional service costs as would arise from the Amended Project.

D. Conclusions

Following RKG's meeting with the Hudson Fire Chief, Police Chief and the Director of Public Works on October 27, 2022, it is RKG's opinion that although the size and scope of the Amended Project is less than the previously Approved Project, there are no substantial or material changes in the projected service costs to the Town of Hudson which are necessitated by the Amended Project. Moreover, the level of projected service costs described in RKG Report, as supplemented by this Addendum, remain generally consist with service cost range as projected in the Barrett Report (as revised and dated September 2020).[3]

[3] Indicating municipal service costs ranging from $322,700 to $503,700.

Camoin Associates
PO Box 3547
Saratoga Springs, NY 12866
Phone: 518.899.2608

MEMORANDUM

To: Steven Reichert, Fuss & O'Neill, Inc.
From: Camoin Associates
Date: 11/21/2022
Re: Peer Review of Hudson Logistics Center Fiscal Impact Analysis and Real Estate Appraisal Services Report

Fuss & O'Neill requested Camoin Associates to conduct a peer review of RKG Associates Inc.'s Fiscal Impact Analysis ("RKG Report") and the related November 15, 2022 Addendum Memorandum, and Wesley G. Reeks' Real Estate Appraisal Services Report ("Wesley G. Reeks" report) and his October 23, 2022 addendum letter related to the proposed Hudson Logistics Center at Lowell and Steele Roads in the Town of Hudson, NH. Camoin Associates was not commissioned to complete a separate fiscal impact analysis or real estate appraisal, but rather the intent of the peer review is to confirm that the methodology, assumptions, and tools used for this analysis conform to industry standards.

The following memo outlines our peer review findings. The results are based on our experience and professional opinions.

Key Findings

Key findings from Camoin Associates' peer review are provided below with a more detailed review of each provided on the following pages:

RKG Associates, Inc.: Fiscal Impact Analysis – Hudson Logistics Center

Overall the majority of the assumptions used are reasonable and the analysis is consistent with industry standard tools and methodology. The review identified a few areas where information presented or data used could be improved upon, however most of the adjustments would not result in a material change to the results.

Wesley G. Reeks: Real Estate Appraisal Report and Addendum Letter – Proposed Hudson Logistics Center

Mr. Reeks employs standard methods and provides a sound, thorough analysis given data and other constraints. The review identified some minor adjustments that could be made, but these would not affect his conclusions.

RKG Associates Inc. Fiscal Impact Analysis (September 9, 2022) and Addendum Memorandum (November 15, 2022)

The analysis conducted by RKG Associates Inc. provides a current estimate of the fiscal impacts of the proposed project. The RKG Report utilizes information and findings from a previously completed study by Barrett (in June 2020 and revised in September 2020) on an earlier version of the project plan. Though the RKG Report considers findings from the previous Barrett study, RKG conducted reasonable additional research to develop independent assumptions. Overall, the RKG Report follows a reasonable and standard methodology.

- The RKG Report uses industry standard fiscal impact analysis assumptions, including the consideration of current local costs and revenues, calculation of the fiscal impact at full buildout, and use of only local public costs and expenditures.
- The FY21 tax rate is used to calculate property tax revenue in this analysis. RKG appropriately states that this tax rate is used because the FY22 tax rate was not available at the time of analysis. This is an acceptable, conservative approach to calculating new revenue; however, if the project is expected to be developed over a multi-year time period, using a tax rate escalator based on historic trends may be more appropriate to accurately reflect new revenue at full buildout. It is unclear what the development timeline for this project is expected to be.
- RKG conducted a review of other properties and applicable data before using valuation estimates from the Barrett Report. The conclusions drawn from this research and the decision to use the estimates from the Barrett Report are reasonable and well supported. Typically, construction costs are taken into account when determining an estimated future valuation of a project; however, RKG appropriately notes that this data was not available at the time of analysis. RKG also notes that the Town Assessor will have input on final valuation, although it is unclear if the Town Assessor provided any input for the report. It is best practice to obtain the Town Assessor's input on valuation for a fiscal impact analysis, however Camoin Associates recognizes that this is not always possible.
- The RKG Report follows a standard methodology in its approach to other sources of new revenue. The impacts of building permit fees are clearly explained to be one-time benefits and the report does not overstate the potential benefit of fees that are unknown at this time. Additionally, the RKG Report discusses potential new vehicle excise tax revenue but does not make unreasonable assumptions to estimate a specific dollar value attributable to the project. The RKG Report appropriately discusses these potential new revenue sources but is reasonably conservative in its approach.
- The RKG Report uses a proportional valuation methodology to calculate municipal service costs. This is a standard accepted practice for determining the new municipal costs expected to result from a new commercial or industrial development, by using the change in a community's property value.
- The impacted departments and associated costs used in the analysis are reasonable. While not needed for the model, the "fixed" municipal budget costs were not included in this analysis. These costs are often included in fiscal impact analyses for illustrative purposes, but the exclusion of them from the RKG Report has no impact on the final results.

- The analysis excludes the possibility of additional education costs due to the non-residential nature of the development. While this is likely the case and a reasonable assumption, a brief narrative about why it is assumed that the new jobs will not result in new residents/school children would be helpful in supporting this conclusion.
- In the November 15, 2022 addendum letter, RKG concludes that "there are no substantial or material changes in the projected service costs to the Town of Hudson which are necessitated by the Amended Project." This conclusion was made following discussions with service provider leaders and is reasonable and appropriate based on the information that they provided, as well as RKG's analysis.
- The November 15, 2022 addendum letter appropriately addresses questions from the Town and the Town assessor regarding the interpretation of tax revenue.

Wesley G. Reeks Real Estate Appraisal Report (September 7, 2022) and Addendum Letter (October 23, 2022)

The analysis conducted by Mr. Reeks follows a reasonable and standard methodology. He compares residential sale prices per square foot for homes immediately adjacent to the proposed logistics center site with those in the same subdivision but more distant. Reeks also examines residential sale prices near existing distribution and warehouse/industrial sites to assess the effects of operating sites versus potential sites. In addition to a residential analysis, Reeks also evaluates the effects of new industrial sites on other industrial or commercial sites.

- Reeks follows best practices and compares sales of Green Meadow subdivision residential properties abutting the proposed Hudson Logistics Center site with sales of similar, nonadjacent properties in the same development. He notes that "dwellings that do not share a boundary with the golf course sell for similar amounts per square foot as those 18 sites along Fairway and Eagle which do abut the golf course. These data indicate the market does not perceive a benefit in the form of increased market value from living on a lot which directly abuts the golf course."
- Reeks also evaluates three pairs of same-property sales in Green Meadow that happened before and after announcement of the logistics center proposal, one abutting the site and two not abutting. He compares average annual rates of price growth between the "before" and "after" sales and finds the price growth for the adjacent property falls between the growth rates of the other two. This is an appropriate analytical technique that strengthens Reeks' conclusions.
- Reeks evaluates home sales in the nearby, but nonadjacent, Ridgecrest development. He states that "the average sales price per square foot for 2013–14 is $156.50 and the average for 2019–20 is $251.26, an increase of 60%" (p. 7) In fact, according to the data in the table on page 7 of Reeks' analysis, the average sale price in 2019–20 was $239.59 per square foot, representing a still-significant increase of 53%. The application for the originally proposed Hudson Logistics Center was submitted to the Hudson Planning Board on April 21, 2020, and the first public meeting was held on May 27, 2020. While there were no sales in Ridgecrest in 2015 through 2017, a more appropriate comparison period would be 2020–21, after the project became public knowledge, instead of 2019–20 as used by Reeks. The average sale price in 2020–21 was $240.62 per square foot, a 54% increase from the 2013–14 average. Given the minor calculation error noted above and

a change in comparison periods, Reeks' conclusion that "the high likelihood of redevelopment of Green Meadow Golf Course with an industrial use has had no impact on the prices paid for dwellings in Ridgecrest" is still applicable. Importantly, Reeks also notes that "price increases coincide with the overall Hudson market," providing a sound external point of reference.

- In his October 23, 2022, addendum letter, Reeks analyzes home sales in a third subdivision adjacent to the proposed HLC development. While he does not distinguish between abutting and non-abutting properties (only two of the properties sold abut the site), his finding that "these sales follow similar trend lines as the sales in Green Meadow and Ridgecrest with increases in line with the general Hudson market" (p. 2) further supports his conclusion of no discernible impact.
- One concern with this type of analysis is the fact that the warehouse proposal has been publicly announced does not mean that all residential real estate buyers have knowledge of it. Nor does the *prospect* of a new distribution facility necessarily have the same impacts as the *existence* of such a facility, with its attendant noise, lights, and increased traffic. To address this, Mr. Reeks analyzes similar, completed developments elsewhere in southern New Hampshire to assess the effects of the existence of such a facility on neighboring residential property values. He looks at Pettengill Commerce Park in Londonderry/Manchester, a Walmart distribution facility in Raymond, and a new industrial/warehouse facility in Sagamore Industrial Park in Hudson.
- Reeks' analysis of Pettengill Commerce Park provides a sound point of comparison. The neighboring residential properties examined are closer to the industrial park's existing 773,000-square-foot Webb distribution facility than Green Meadow properties will be to the revised Hudson Logistics Center. Analyzing home sales over a period that includes the construction of the Webb facility, Reeks finds that not only did properties adjacent to the facility see the same value increases as did those two or three blocks away in the same subdivision, but they also grew faster than citywide prices over the same period. This provides good support for his conclusion that the proximity of Pettengill Commerce Park, including the Webb distribution facility, does not adversely affect neighboring residential property values.
- Russ Thibeault of Applied Economic Research reviewed Mr. Weeks' previous (2020) analysis of the potential impacts of the proposed Hudson Logistics Center. He criticized Reeks' Walmart Raymond analysis because the home sales used for comparison were not in comparable neighborhoods to those sited adjacent to the Walmart distribution center. While Thibeault does raise valid methodological points, the analysis may be "good enough" in the face of an unobtainable perfection, limited cases for comparison, and finite budgets.
- Site preparation and construction had not yet begun on the industrial/warehouse facility in Sagamore Industrial Park at the time of Mr. Reeks' analysis. His evaluation of the limited available sales data (the project was publicly announced in mid-2021) in the adjacent Birchcroft subdivision and Fox Hollow condominiums follows appropriate practices, comparing annual price growth for abutting properties with those two to three blocks away. Based on a difference in average price growth rates of +1.8% and +2.8% for nonadjacent properties compared with adjacent properties in the two neighborhoods respectively, Reeks concludes that "there is no definitive trend indicating a significant diminution in value created by the proposed Friars Drive warehouse…. On the contrary, the data support the conclusion that property values are increasing notwithstanding the development." While the data might indicate that abutting properties are gaining value more slowly

than non-abutting properties, the short time frame, limited sales data, and small differences would make it difficult to claim this was due to the announced facility.

- Mr. Reeks acknowledges that the facility's impact to the Ridgecrest subdivision "is the potential for increased traffic in the area and at this entrance point." With respect to other potential impacts arising from the operation of the Hudson Logistics Center, Mr. Reeks defers to the "opinions and conclusions of qualified professionals" in the air quality, traffic, noise, and other similar reports. In addition, his analyses of the Pettengill/Webb facility and the Walmart Raymond facility implicitly account for these and any other effects arising from the operation of large distribution facilities.
- Mr. Reeks also considers the proposed Hudson Logistics Center's potential impact on nearby industrial properties. Although relevant transaction data are much more limited, his analysis uses available comparable sales. Within these constraints, his conclusion that "the proposed Hudson Logistics Center will have no negative impact on market values of commercial/industrial properties in the immediate area" appears defensible.

Mr. Reeks' conclusion that the proposed Hudson Logistics Center would not adversely affect neighboring or nearby property values appears defensible.

TRC
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November 18, 2022

Mr. Steve Reichert, P.E.
Senior Project Director
Fuss & O'Neill, Inc.
50 Commercial Street
Manchester, NH 03101

Subject: Review of the Hudson Logistics Center Project Air Quality Modeling Report (TRC Project No. 513416.0000)

Dear Mr. Reichert:

The purpose of this letter is to document a review of the subject Modeling Report dated September 22, 2022, prepared by Epsilon Associates, Inc. The Modeling Report provides a review of the anticipated air quality impacts of the construction and operation of the proposed Hudson Logistics Center Project in Hudson, New Hampshire. The enclosed table provides comments on the Modeling Report section-by-section.

The review is based on reports, surveys, and plans prepared by others and assumes this information is correct and valid as submitted. Should you have any questions, please call (or email) me at 860-298-6268 (pfennell@trccompanies.com).

Yours truly,

TRC Environmental Corporation

Patrick J. Fennell Digitally signed by Patrick J. Fennell
Date: 2022.11.18 16:07:40 -05'00'

Patrick J. Fennell, P.E.
Consulting Engineer

cc: David Fox (TRC)
Al Wilder (TRC)

Enclosure: As Stated

Table 1: Comments on Hudson Logistics Center Project Air Quality Modeling Report Dated September 22, 2022

<table>
<tr><th>Modeling Report Section</th><th>Comment</th></tr>
<tr><td>1.0 Introduction</td><td>None</td></tr>
<tr><td>2.1 National Ambient Air Quality Standards</td><td>The summary of the NAAQS is accurate.</td></tr>
<tr><td>2.2 Background Air Quality</td><td>The concentration data summarized in Table 2-2 were obtained from the EPA AirData website for monitoring station 33-015-0018 (Londonderry, New Hampshire). Data from this station are representative of the background concentrations at the Project site. The annual NO_2 background concentration should be the highest of the annual concentrations for the past three years, i.e., 5.9 µg/m^3. Table 2-2 lists 3.8 µg/m^3.
<table>
<tr><th>Year</th><th>ppb</th><th>µg/m^3</th></tr>
<tr><td>2019</td><td>2.64</td><td>4.97</td></tr>
<tr><td>2020</td><td>2.46</td><td>4.63</td></tr>
<tr><td>2021</td><td>3.13</td><td>5.90</td></tr>
</table></td></tr>
<tr><td>2.3 Hazardous Air Pollutants</td><td>1. Table 1450-1 in New Hampshire Code of Administrative Rules, Section Env-A 1400 is the correct source for regulated toxic air pollutant (RTAP) ambient air limits (AALs). The Report states that diesel particulate matter (DPM) is not regulated in New Hampshire as a Hazardous Air Pollutant (HAP). The Report lists a DPM reference concentration (developed to protect against non-cancer chronic health effects) of 5 µg/m^3 (annual basis). That value is correct. [See EPA Regional Screening Levels (RSLs) Resident Air (TR=1E-06, THQ=1.0) inhalation reference concentration (RfC_i) https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.]

2. Delete the following sentence, which is found on page 2-4:

There is generally very little data on ambient concentrations of HAPs that can be used as background concentrations like there are for criteria pollutants,

Monitoring station 33-015-0018 (Londonderry, New Hampshire) is nearby and the source of the background concentration data for criteria pollutants shown in Table 2-2. It also contains ambient concentration data for numerous HAPS and RTAPs.

3. The last paragraph on page 2.4 states the following:

Also, in general, compliance with the other air quality standards, namely NO_2 and $PM_{2.5}$ indicates acceptable levels of DPM from a public health, safety and environmental perspective.</td></tr>
</table>

Table 1: Comments on Hudson Logistics Center Project Air Quality Modeling Report Dated September 22, 2022

Modeling Report Section	Comment
	Provide a reference or rationale to substantiate this assertion. 4. The last paragraph on page 2.4 also states the following: *Compliance with the PM NAAQS and levels below the RfC are also indicative that no significant odor or visual impacts would be noticed by residents.* The DPM RfC is an annual average concentration, and the PM NAAQS are 24-hour and annual average concentrations. Neither is based on visual impact or odor considerations. Adverse visual impact and odor incidents are often episodic and occur for durations shorter than one year or one day. Provide a reference or rationale to substantiate this assertion regarding relevance of the NAAQS and RfC to adverse odor or visual impacts.
3.0 Air Quality Analysis	
3.1 Selected Pollutants	The pollutants selected are appropriate. Nevertheless, for clarity this section should refer to the tables which list the pollutants selected for the analysis.
3.2 General Methodology	The general methodology is appropriate.
3.2.1 Air Quality Model Selection	The use of AERMOD Version 22122 and the Lakes Environmental interface for the analysis are appropriate.
3.2.2 Modeling Options	The options used are appropriate.
3.2.3 NO_x to NO_2 Conversion	The use of the ARM2 algorithm is appropriate.
3.2.4 Urban/Rural Determination	The use of rural coefficients is appropriate.
3.2.5 Meteorological Data	Given the proximity of the site to the Concord Airport and the Merrimack River, the use of Concord surface data and Gray, Maine upper air data are appropriate.
3.2.6	Terrain Effects
3.2.6 Receptors (sic)	The receptor network used is adequate to define worst case predicted impacts. Note that Section number 3.2.6 is used twice in the Modeling Report)
3.2.7 RTAP Methodology	The use of a Lakes Environmental AERMOD interface procedures to calculate predicted impacts for multiple pollutants using single model runs is appropriate.

Table 1: Comments on Hudson Logistics Center Project Air Quality Modeling Report Dated September 22, 2022

Modeling Report Section	Comment
3.3 Source Specific Data	
3.3.1 Stationary Sources	The Modeling Report states an emergency generator is the only stationary source for the project. No mention is made of fuel-burning equipment for building heating or cooling. If such equipment will be used, its emissions should be estimated and these emissions accounted included in the modeling.
3.3.1.1 Emissions and Source Parameters	1. Emergency generator emissions are based on a Cummins 300 kWe Tier 3 diesel engine. This engine model or an equivalent unit should be installed. 2. Emergency diesel generator DPM emissions ($PM_{2.5}$ is used as surrogate) are calculated but emergency diesel generator emissions are not included in the AERMOD input file for the Project's annual DPM impacts.
3.3.1.2 Building downwash	Use of the BPIP Prime algorithm for determining wind direction dependent building dimensions is appropriate.
3.3.2 Mobile Sources	Although MOVES 2014b is not the latest version of the MOVES model, its use along with the 2020 vehicle emissions fleets is appropriate.
3.3.2.1 Emission and Source Parameters	Emissions from vehicles on roadways are modeled as volume sources. The model input for these volume sources defines vertical and horizontal plume dispersion factors, respectively termed sigma-z and sigma-y. Page 3-12 pf the Modeling Report states the following: *For the roadway links, initial lateral plume spread is determined by the roadway width and varies by roadway. Road widths were measured in Google Earth and initial lateral spread values were calculated using width / 2.15 as described* in the U.S. EPA Hot-Spots analyses guidance referenced above. The AERMOD input files appear to show the sigma-y values used to model Project-related vehicle emissions are the roadway widths without the (1/2.15) adjustment. This could cause the air quality inputs to be underpredicted. Please clarify.
4.1 Criteria Pollutant Results	1. The results presented show Project's air quality impacts plus the background concentration do not exceed the NAAQS. 2. The background concentration for annual nitrogen dioxide should be corrected to 5.9 $\mu g/m^3$ 3. If the AERMOD sigma-y input model inputs are incorrect (see the comments for Section 3.3.2.1) the Project's predicted impacts could be larger.

Table 1: Comments on Hudson Logistics Center Project Air Quality Modeling Report Dated September 22, 2022

Modeling Report Section	Comment
	4. If the emissions from any building heating sources were included (see the comments for Section 3.3.2.1) the Project's predicted impacts could be larger.
4.2 RTAP Results	The analysis of DPM impacts must account for emissions all Project-related mobile and stationary sources that use diesel fuel.
4.3 Mitigation	1. Section 4.3 states, "To mitigate impacts from the emergency engine, operations for testing and maintenance should be performed during times when the atmosphere is more unstable and has better mixing, leading to better dispersion of pollutants. These hours are typically mid-afternoon when the ground has been effectively heated by the midday sun." It is recommended that measures to mitigate emergency diesel engine impacts by restricting the hours of operations for testing and maintenance be a condition of any Project approval. 2. See comment 2 for Section 4.5.
4.4 Air Quality Permits	The conclusion that the Project requires no air quality permits is appropriate.
4.5 Construction	1. It is not necessary to model Project construction emissions. However, estimated Project construction emission calculations (i.e., equipment exhaust and fugitive dust) should be provided, and the estimated duration of construction discussed. 2. Several measures to mitigate fugitive dust generation are described, including the following: • Using wetting agents on area of exposed soil on a scheduled basis. • Using covered trucks. • Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized. • Minimizing storage of debris on the site. • Periodic street and sidewalk cleaning with water to minimize dust accumulations. • Limit maximum travel speeds on unpaved areas. • Provide wheel wash stations to limit track-out of soil during the excavation phase It is recommended that measures to mitigate fugitive dust during construction be a condition of any Project approval and incorporated into the Project Plan Set.

Table 1: Comments on Hudson Logistics Center Project Air Quality Modeling Report Dated September 22, 2022

Modeling Report Section	Comment
4.6 Other Potential Impacts	The discussion of other potential impacts is appropriate.
4.7 Conclusions	The Modeling Report concludes that, "Since all predicted concentrations are below their applicable NAAQS and/or RTAP standards, it can be concluded that the proposed Project will not cause or contribute to a condition of air pollution in the area." TRC's review noted the following items: • The annual NO_2 background concentration should be, 5.9 µg/m^3. • The DPM modeling did not accounted for the diesel emergency generator emissions. • It is not clear if there are combustion sources for building heat which should have been accounted for. • It appears the "sigma-y" AERMOD inputs for roadway links are not consistent with guidance and not as described in the Modeling Report. • Estimated Project estimated construction emission calculations (i.e., equipment exhaust and fugitive dust) should be provided, and the estimated duration of construction discussed. Addressing these items may affect the predicted air quality impacts. It is anticipated that the effects would be small to moderate and not alter the Modeling Report's conclusions.

Epsilon ASSOCIATES INC.

November 30th, 2022

Langan Engineering
100 Cambridge Street, Suite 1300
Boston, MA 02114
Attn: Frank Holmes

Subject: Comment Response for Air Modeling Analysis Prepared for Hudson Logistics Center

Dear Frank:

Epsilon is providing the following response to comments based on TRC's review of the Air Modeling Analysis prepared for the Hudson Logistics Center Project. Changes to the model as described in responses are not anticipated to have a significant impact

Epsilon is in the process of refining the air quality modeling analysis and report to address TRC's comments. Epsilon agrees with TRC's conclusion that addressing their comments may result in a modest increase in concentrations but will not alter the modeling report's conclusion that the Project will meet the requirements laid out in Chapter 275 of the Town of Hudson's Site Plan Review regulations. As part of the revised report, Epsilon has prepared a detailed breakdown of the TRC comments, and responses appears below:

No.	Modeling Report Section	TRC Comment	Response
1	1.0 Introduction	None.	None.
2	2.1 National Ambient Air Quality Standards	The summary of the NAAQS is accurate.	None.
3	2.2 Background Air Quality	The concentration data summarized in Table 2-2 were obtained from the EPA AirData website for monitoring station 33-015-0018 (Londonderry, New Hampshire). Data from this station are representative of the background concentrations at the Project site. The annual NO2 background concentration should be the highest of the annual concentrations for the past three years, i.e., 5.9 µg/m3. Table 2-2 lists 3.8 µg/m^3.	This correction will be made in the revised modeling report. Note that the 2021 annual NO_2 concentration data did not meet the minimum completeness criteria, therefore the maximum concentration from 2018-2020 period of 4.96 ug/m^3 will be used. The change will not have a significant impact on the conclusions of the modeling report.

No.	Modeling Report Section	TRC Comment	Response
4	2.3 Hazardous Air Pollutants	1. Table 1450-1 in New Hampshire Code of Administrative Rules, Section Env-A 1400 is the correct source for regulated toxic air pollutant (RTAP) ambient air limits (AALs). The Report states that diesel particulate matter (DPM) is not regulated in New Hampshire as a Hazardous Air Pollutant (HAP). The Report lists a DPM reference concentration (developed to protect against non-cancer chronic health effects) of 5 µg/m^3 (annual basis). That value is correct. [See EPA Regional Screening Levels (RSLs) Resident Air (TR=1E-06, THQ=1.0) inhalation reference concentration (RfCi) https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.]	None.
5	2.3 Hazardous Air Pollutants	2. *Delete the following sentence, which is found on page 2-4:* *There is generally very little data on ambient concentrations of HAPs that can be used as background concentrations like there are for criteria pollutants.* Monitoring station 33-015-0018 (Londonderry, New Hampshire) is nearby and the source of the background concentration data for criteria pollutants shown in Table 2-2. It also contains ambient concentration data for numerous HAPS and RTAPs.	The deletion will be made in the revised modeling report.
6	2.3 Hazardous Air Pollutants	3. The last paragraph on page 2.4 states the following: *Also, in general, compliance with the other air quality standards, namely NO2 and PM2.5 indicates acceptable levels of DPM from a public health, safety and environmental perspective.* Provide a reference or rationale to substantiate this assertion.	Review of the EPA Integrated Risk Information System Database for Diesel engine exhaust (Diesel engine exhaust (CASRN N.A.) | IRIS | US EPA), on page 9 states: "It also should be noted that diesel particles make up a portion of ambient particulate matter (PM). U.S. EPA has established an annual National Ambient Air Quality Standard (NAAQS) for fine particulate matter (PM2.5), to provide protection against adverse health effects associated with both long- and short-term exposures

No.	Modeling Report Section	TRC Comment	Response
			to ambient fine PM. DPM is a typical constituent of ambient fine PM, generally about 6-10% of PM2.5 with some examples up to 36% (U.S. EPA, 1996a, 1996b). Given the similarity of health concerns for respiratory inflammation and pulmonary health effects from both DPM and fine particles, it is reasonable to expect that DPM contributes to some of the health effects associated with PM2.5. Current knowledge is insufficient, however, to describe the relative potencies of DPM and the other components of PM2.5. As long as the percentage of DPM to total ambient PM2.5 remains in similar proportion, protective levels for PM2.5 would be expected to offer a measure of protection from effects associated with DPM."
7	2.3 Hazardous Air Pollutants	4. The last paragraph on page 2.4 also states the following: *Compliance with the PM NAAQS and levels below the RfC are also indicative that no significant odor or visual impacts would be noticed by residents.* The DPM RfC is an annual average concentration, and the PM NAAQS are 24-hour and annual average concentrations. Neither is based on visual impact or odor considerations. Adverse visual impact and odor incidents are often episodic and occur for durations shorter than one year or one day. Provide a reference or rationale to substantiate this assertion regarding relevance of the NAAQS and RfC to adverse odor or visual impacts.	The modeling report will be revised to state the following: " *No significant odor or visual impacts would be noticed by residents."* What was meant by the statement is that the transient puffs of smoke associated with diesel trucks are not harmful even though they would occur periodically. Not to imply that complying with an annual RfC or 24-hour NAAQS means there won't be an occasional odor or puff of smoke from a truck.
8	3.1 Selected Pollutants	The pollutants selected are appropriate. Nevertheless, for clarity this section should refer	The modeling report will be revised to state the following:

No.	Modeling Report Section	TRC Comment	Response
		to the tables which list the pollutants selected for the analysis.	*"The Project-related air pollutants of concern include the criteria pollutants, as described in Table 2-1, and toxic or hazardous air pollutants, as described in Table 2-3."* A table will be added to Section 2.3 to clearly indicate the air toxics and allowable 24-hour and annual concentrations of RTAPs. The change will not have a significant impact on the conclusions of the modeling report.
9	3.2 General Methodology	The general methodology is appropriate.	None.
10	3.2.1 Air Quality Model Selection	The use of AERMOD Version 22122 and the Lakes Environmental interface for the analysis are appropriate.	None.
11	3.2.2 Modeling Options	The options used are appropriate.	None.
12	3.2.3 NOx to NO2 Conversion	The use of the ARM2 algorithm is appropriate.	None.
13	3.2.4 Urban/Rural Determination	The use of rural coefficients is appropriate.	None.
14	3.2.5 Meteorological Data	Given the proximity of the site to the Concord Airport and the Merrimack River, the use of Concord surface data and Gray, Maine upper air data are appropriate.	Noted.
15	3.2.6 Receptors	The receptor network used is adequate to define worst case predicted impacts. Note that Section number 3.2.6 is used twice in the Modeling Report)	The section heading for Receptors and RTAP Methodology will be updated accordingly in the revised report.
16	3.2.7 RTAP Methodology	The use of a Lakes Environmental AERMOD interface procedures to calculate predicted impacts for multiple pollutants using single model runs is appropriate.	None.
17	3.3.1 Stationary Sources	The Modeling Report states an emergency generator is the only stationary source for the project. No mention is made of fuel-burning equipment for building heating or cooling. If such	Fuel-burning equipment for building heating or cooling will be by roof-top units that will burn natural gas. These units will be included in the

No.	Modeling Report Section	TRC Comment	Response
		equipment will be used, its emissions should be estimated and these emissions accounted included in the modeling.	revised modeling. Based on the sizes of these units we do not expect a significant increase in air pollutant concentrations. The change will not have a significant impact on the conclusions of the modeling report.
18	3.3.1.1 Emissions and Source Parameters	1. Emergency generator emissions are based on a Cummins 300 kWe Tier 3 diesel engine. This engine model or an equivalent unit should be installed.	None.
19	3.3.1.1 Emissions and Source Parameters	2. Emergency diesel generator DPM emissions (PM2.5 is used as surrogate) are calculated but emergency diesel generator emissions are not included in the AERMOD input file for the Project's annual DPM impacts.	The diesel generator will be included in the revised modeling. Based on its contribution in the annual $PM_{2.5}$ modeling, it is expected to be well below the 5 $\mu g/m^3$ RfC. The change will not have a significant impact on the conclusions of the modeling report.
20	3.3.1.2 Building downwash	Use of the BPIP Prime algorithm for determining wind direction dependent building dimensions is appropriate.	None.
21	3.3.2 Mobile Sources	Although MOVES 2014b is not the latest version of the MOVES model, its use along with the 2020 vehicle emissions fleets is appropriate.	None.

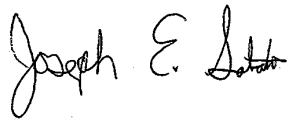
No.	Modeling Report Section	TRC Comment	Response
22	3.3.2.1 Emission and Source Parameters	Emissions from vehicles on roadways are modeled as volume sources. The model input for these volume sources defines vertical and horizontal plume dispersion factors, respectively termed sigma-z and sigma-y. Page 3-12 pf the Modeling Report states the following: *For the roadway links, initial lateral plume spread is determined by the roadway width and varies by roadway. Road widths were measured in Google Earth and initial lateral spread values were calculated using width / 2.15 as described in the U.S. EPA Hot-Spots analyses guidance referenced above.* The AERMOD input files appear to show the sigma-y values used to model Project-related vehicle emissions are the roadway widths without the (1/2.15) adjustment. This could cause the air quality inputs to be underpredicted. Please clarify.	We checked and confirmed that the model inputs were correct. The sigma-y model inputs for line volume sources are based on Table 3-2 of the AERMOD User's Guide. The procedure for obtaining the initial lateral dimension (sigma-y) is to take the center-to-center distance divided by 2.15. The center-to-center distance is separated by two times the width of the roadway since we're modeling the volume sources using the "separated 2W approach". For example, for source L1 (River Road), the roadway width was measured to be 20.7 meters. The center-to-center distance is 20.7 * 2 = 41.4 meters. 41.4 meters is then divided by 2.15 to determine the sigma-y of 19.26.
23	4.1 Criteria Pollutant Results	1. The results presented show Project's air quality impacts plus the background concentration do not exceed the NAAQS.	None.
24	4.1 Criteria Pollutant Results	2. The background concentration for annual nitrogen dioxide should be corrected to 5.9 $\mu g/m^3$	See comment response number 3.
25	4.1 Criteria Pollutant Results	3. If the AERMOD sigma-y input model inputs are incorrect (see the comments for Section 3.3.2.1) the Project's predicted impacts could be larger.	See comment response number 22.
26	4.1 Criteria Pollutant Results	4. If the emissions from any building heating sources were included (see the comments for Section 3.3.2.1) the Project's predicted impacts could be larger.	See comment response number 17.
27	4.2 RTAP Results	The analysis of DPM impacts must account for emissions all Project-related mobile and stationary sources that use diesel fuel.	See comment response number 17.

No.	Modeling Report Section	TRC Comment	Response
28	4.3 Mitigation	1. Section 4.3 states, "To mitigate impacts from the emergency engine, operations for testing and maintenance should be performed during times when the atmosphere is more unstable and has better mixing, leading to better dispersion of pollutants. These hours are typically mid-afternoon when the ground has been effectively heated by the midday sun." It is recommended that measures to mitigate emergency diesel engine impacts by restricting the hours of operations for testing and maintenance be a condition of any Project approval.	None.
29	4.3 Mitigation	2. See comment 2 for Section 4.5.	None.
30	4.4 Air Quality Permits	The conclusion that the Project requires no air quality permits is appropriate.	None.
31	4.5 Construction	1. It is not necessary to model Project construction emissions. However, estimated Project construction emission calculations (i.e., equipment exhaust and fugitive dust) should be provided, and the estimated duration of construction discussed.	Construction related emissions will be provided in the revised air modeling report. The change will not have a significant impact on the conclusions of the modeling report.
32	4.5 Construction	2. Several measures to mitigate fugitive dust generation are described, including the following: • Using wetting agents on area of exposed soil on a scheduled basis. • Using covered trucks. • Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized. • Minimizing storage of debris on the site. • Periodic street and sidewalk cleaning with water to minimize dust accumulations. • Limit maximum travel speeds on unpaved areas. • Provide wheel wash stations to limit track-out of soil during the excavation phase It is recommended that measures to mitigate fugitive dust during construction be a condition of any Project approval and incorporated into the Project Plan Set.	None.

No.	Modeling Report Section	TRC Comment	Response
33	4.6 Other Potential Impacts	The discussion of other potential impacts is appropriate.	None.
34	4.7 Conclusions	The Modeling Report concludes that, "Since all predicted concentrations are below their applicable NAAQS and/or RTAP standards, it can be concluded that the proposed Project will not cause or contribute to a condition of air pollution in the area." TRC's review noted the following items: • The annual NO2 background concentration should be, 5.9 µg/m^3. • The DPM modeling did not accounted for the diesel emergency generator emissions. • It is not clear if there are combustion sources for building heat which should have been accounted for. • It appears the "sigma-y" AERMOD inputs for roadway links are not consistent with guidance and not as described in the Modeling Report. • Estimated Project estimated construction emission calculations (i.e., equipment exhaust and fugitive dust) should be provided, and the estimated duration of construction discussed. Addressing these items may affect the predicted air quality impacts. It is anticipated that the effects would be small to moderate and not alter the Modeling Report's conclusions.	Each of these items have been responded to in the above responses. Epsilon agrees that adding the emergency generator to the annual DPM modeling and accounting for the emissions from heating the building may result in a modest increase in concentrations and not alter the modeling report's conclusion that the Project will meet the requirements laid out in Chapter 275 of the Town of Hudson's Site Plan Review regulations.

If you have any questions on the responses provided above, please feel free to contact me at 978-461-6265.

Sincerely,
EPSILON ASSOCIATES, INC.



Joseph E. Sabato, CCM, MPH
Senior Consultant
EPSILON ASSOCIATES, INC.

SOUND LEVEL ASSESSMENT REPORT

Hudson Logistics Center Project
Town of Hudson, Hillsborough County, NH

Prepared for:

Langan Engineering
100 Cambridge Street, Suite 1300
Boston, MA 02114

Prepared by:

Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, MA 01754

November 23, 2022

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1.0 EXECUTIVE SUMMARY

The Hudson Logistics Center Project (the Project) is a new warehouse project planned for development in The Town of Hudson, Hillsborough County, New Hampshire. The Project includes a total building footprint of approximately 1.4 million square-feet consisting of one main warehouse and several accessory buildings located on an approximate 375-acre lot (the Property) located west of Lowell Road and Steele Road. Epsilon Associates, Inc. (Epsilon) has been retained by Langan Engineering (Langan) to conduct a sound level measurement and acoustic modeling study for the mechanical equipment and delivery truck activity associated with the Project.

A previously approved project on the Property consisted of three warehouse buildings totaling approximately 2.6 million square feet (the Approved Project). A sound level assessment for the Approved Project was conducted by Ostergaard Acoustical Associates in 2020, with the latest version of the report, *Site Sound Evaluation and Control, Proposed Hudson Logistics Center, Hudson, NH* (Revision 2), dated December 1,2020.

The sound level assessment described in this report included a baseline sound level measurement program to determine existing ambient sound levels at properties in the vicinity of the Project site and sound level modeling of operational sounds from the proposed facility.

An ambient sound level measurement program for the Project was conducted by Epsilon in June of 2022. Results of the acoustic modeling demonstrate that facility operations due to sources associated with the Project will be below the Town of Hudson regulatory limits at all the closest receptors. The limits were established under the Hudson Noise Regulations (Chapter 249 of the Town of Hudson Town Code (the Hudson Town Code). Therefore, the Project meets the Hudson Town Code regulatory limits with respect to noise. For purposes of comparison, modeled continuous sound levels due to the Project are also lower at all the closest receptors when compared to the previously Approved Project.

Pursuant to the analysis performed by Epsilon as described herein, and subject to the recommendations contained in section 9.0, Hillwood's proposed new Project will comply with applicable local regulations relating to noise to include Chapter 275-6.H (the elimination of undesirable and preventable elements of pollution, such as noise, … into the environment which might prove harmful to persons, structures, or adjacent properties), and Chapter 249 of the Town of Hudson's Town Code. Further, when compared to the results of the sound level analysis performed for the Approved Project by Ostergaard Associates in December of 2020, the proposed Project has lower continuous sound levels at all modeling locations and time periods than the levels presented for the Approved Project, and otherwise will not prove harmful to persons, structures or adjacent properties.

2.0 INTRODUCTION

The proposed development includes a warehouse building and several accessory structures including a guardhouse, a transportation building and a maintenance building located west of Lowell Road in the Town of Hudson, Hillsborough County, NH. The proposed building will include HVAC equipment and a life-safety emergency generator. In total, there are expected to be 64 HVAC rooftop units (RTUs). The building includes 134 loading dock spaces along the west and east sides, which is a reduction of 210 loading spaces compared to the Approved Project.

The Project site is located on land zoned G-1 (General). The Project parcel is bordered by the Merrimack River to the west and a residential neighborhood to the south. There are residential and business parcels to the east and an industrial area to the north. The proposed site plan is shown in Figure 2-1.

There is an earthen berm proposed to be built south of the Project building. A 10-foot-tall sound fence is planned for the top of the berm, and two 15-foot-tall sound fences are proposed to be built southeast of the main building as shown in Figure 2-1.

This report presents a brief explanation of acoustic terminology, a summary of an existing conditions measurement program, a discussion of the sound level modeling, and an evaluation of the predicted future sound levels against the Hudson Town Code noise limits. The Project RTU sound sources, generators, and semi-trailer truck activities were modeled in CadnaA using tenant sound data provided by Langan, or data collected by Epsilon.

G:\Projects2\NH\6669\MXD\Fig2-1_Aerial_Locus.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Langan Hudson **Hudson, New Hampshire**

Epsilon ASSOCIATES INC.

Figure 2-1
Aerial Locus

3.0 SOUND TERMINOLOGY

There are several ways in which sound levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. The following information defines the sound level terminology used in this analysis.

The decibel scale is logarithmic to accommodate the wide range of sound intensities found in the environment. A property of the decibel scale is that the sound pressure levels of two or more separate sounds are not directly additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a 3-decibel increase (53 dB), which is equal to doubling in sound energy, but not equal to a doubling in decibel quantity (100 dB). Thus, every 3-dB change in sound level represents a doubling or halving of sound energy. The human ear does not perceive changes in the sound pressure level as equal changes in loudness. Scientific research demonstrates that the following general relationships hold between sound level and human perception for two sound levels with the same or very similar frequency characteristics[1]:

- 3 dB increase or decrease results in a change in sound that is just perceptible to the average person,
- 5 dB increase or decrease is described as a clearly noticeable change in sound level, and
- 10 dB increase or decrease is described as twice or half as loud.

Another mathematical property of decibels is that if one source of sound is at least 10 dB louder than another source, then the total sound level is simply the sound level of the higher-level source. For example, a sound source at 60 dB plus another sound source at 47 dB is equal to 60 dB.

A sound level meter (SLM) that is used to measure sound is a standardized instrument.[2] It contains "weighting networks" (e.g., A-, C-, Z-weightings) to adjust the frequency response of the instrument. Frequencies, reported in Hertz (Hz), are detailed characterizations of sounds, often addressed in musical terms as "pitch" or "tone". The most commonly used weighting network is the A-weighting because it most closely approximates how the human ear responds to sound at various frequencies. The A-weighting network is the accepted scale used for community sound level measurements; therefore, sounds are frequently reported as detected with a sound level meter using this weighting. A-weighted sound levels emphasize middle frequency sounds (i.e., middle pitched – around 1,000 Hz), and de-emphasize low and high frequency sounds. These sound levels are reported in decibels designated dBA. The C-weighting network has a nearly flat response for frequencies between 63 Hz and 4,000 Hz and is noted as dBC. Z-weighted sound levels are measured sound levels without any weighting curve and are otherwise referred

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1 Bies, David, and Colin Hansen. 2009. *Engineering Noise Control: Theory and Practice*, 4th Edition. New York: Taylor and Francis.

2 *American National Standard Specification for Sound Level Meters*, ANSI S1.4-2014 (R2019), published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

to as "unweighted". Sound pressure levels for some common indoor and outdoor environments are shown in Figure 3-1.

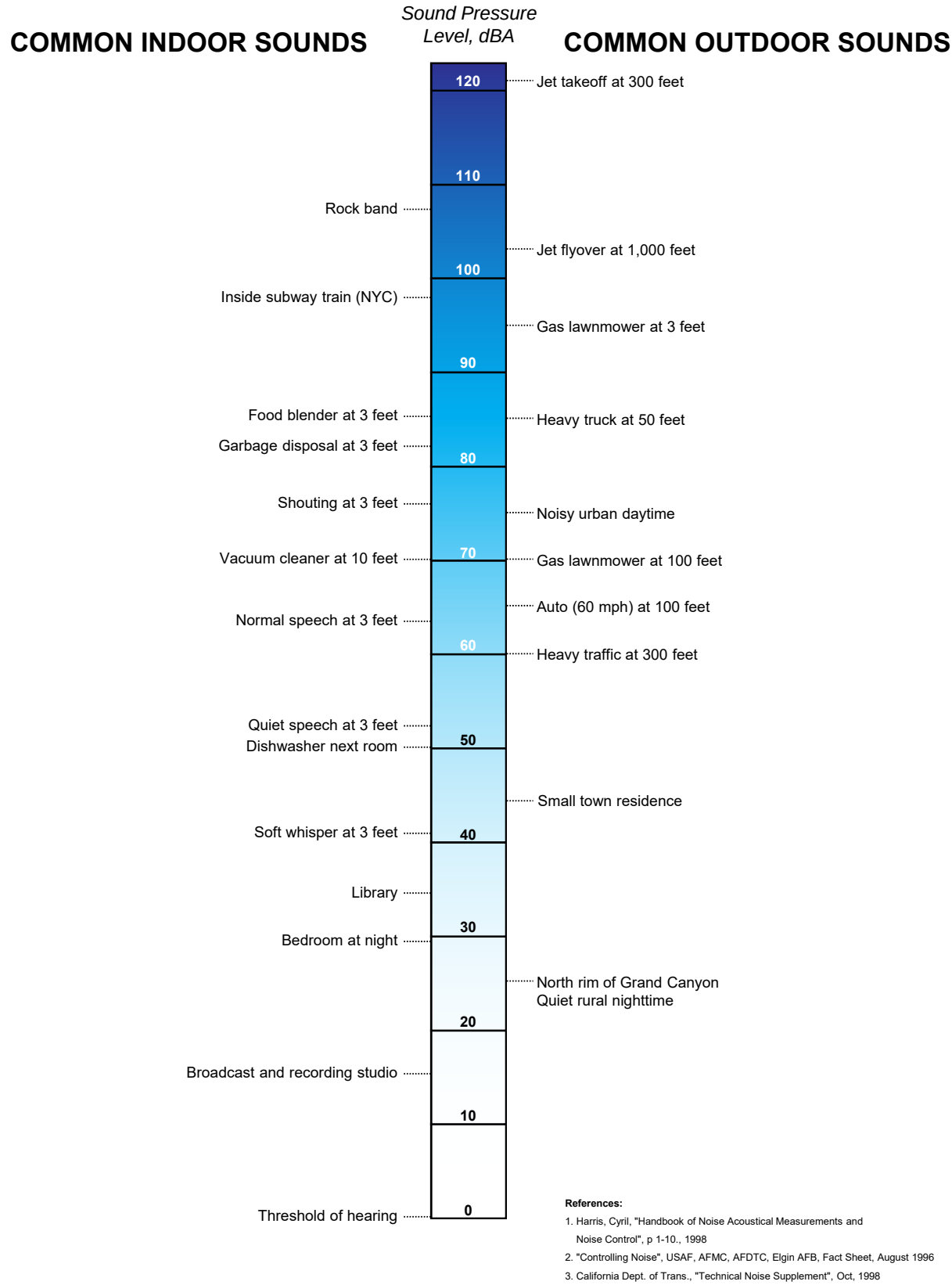
Because the sounds in our environment vary with time they cannot simply be described with a single number. Two methods are used for describing variable sounds. These are exceedance levels and the equivalent level, both of which are derived from some number of moment-to-moment A-weighted sound level measurements. Exceedance levels are values from the cumulative amplitude distribution of all of the sound levels observed during a measurement period. Exceedance levels are designated L_n, where n can have a value between 0 and 100 in terms of percentage. Several sound level metrics that are reported in community sound monitoring are described below.

- L_{90} is the sound level exceeded 90 percent of the time during the measurement period. The L_{90} is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when there are no obvious nearby intermittent sound sources.

- L_{eq}, the equivalent level, is the level of a hypothetical steady sound that would have the same energy (*i.e.,* the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level is designated L_{eq} and is typically A-weighted. The equivalent level represents the time average of the fluctuating sound pressure, but because sound is represented on a logarithmic scale and the averaging is done with linear mean square sound pressure values, the L_{eq} is mostly determined by loud sounds if there are fluctuating sound levels.

The Hudson Noise Regulations (Chapter 249 of the Town Code) employs similar terminology as outlined above.

Since insect noise can have significant season impacts on the measured sound levels in an area, a high-frequency natural sound filter was applied to the measured one-third octave-band data to exclude high-frequency noise sources such as insects. Data processed with this filter is sometimes referred to as ANS-weighted. This technique removes all sound energy above the 1,250 Hz third-octave frequency band. The methodology for the filtration process is specified in ANSI/ASA S12.100-2014 and the sound pressure levels presented using this methodology are indicated as ANS-weighted levels (presented in dBA).



References:

1. Harris, Cyril, "Handbook of Noise Acoustical Measurements and Noise Control", p 1-10., 1998
2. "Controlling Noise", USAF, AFMC, AFDTC, Elgin AFB, Fact Sheet, August 1996
3. California Dept. of Trans., "Technical Noise Supplement", Oct, 1998

Figure 3-1

Common Indoor and Outdoor Sound Levels

4.0 NOISE REGULATIONS

4.1 Local Regulations – Hudson Town Code

The Town of Hudson has noise code regulations that apply to the Project. The Project is located on land zoned G-1 (General) and is required to comply with the Town's noise regulations as described in Chapter 249 of the Hudson Town Code. The Hudson Town Code provides various noise regulations for site sound emissions. Specifically, Section 249-4 identifies ten distinct noise limits that are described below, and states that, "No person or persons owning, leasing or controlling the operations of any source or sources of noise shall willfully, negligently or through failure to provide necessary equipment or facilities or through failure to take necessary precautions make or permit the emission of noise levels or conditions exceeding the following noise limits for the applicable land use."

Noise limits 2 and 3 differentiate between daytime and nighttime sound levels. The Hudson Town Code defines daytime as the period from 7:00 am to 6:00 pm and nighttime as the period from 6:00 pm to 7:00 am and all hours on Saturday, Sunday, and holidays. Since the facility will generally operate 24-hours a day, 7 days a week, both daytime and nighttime periods have been evaluated.

Noise Limit 1 – Noise Pollution (§ 249-4.A)

This limit prevents anyone from causing noise pollution as defined in §249-2 of the Hudson Town Code. There are no quantitative thresholds associated with this limit.

Noise Limit 2 – Continuous Sources (§ 249-4.B)

This limit establishes absolute sound level limits of continuous sources for daytime and nighttime. These are shown in Table 4-1.

Table 4-1 Hudson Noise Limit 2

Continuous Sound Level Limits (1-Hour[3] dBA)		
Receptor Land Use Category	**Daytime**	**Nighttime**
Residential/rural/institutional[1]	55	50
Business/recreational[2]	65	55
Industrial	75	75

Notes:

1. Hospitals, schools, places of worship, libraries, public parklands, etc.
2. Public playgrounds, swimming pools, athletic fields, golf courses, etc.
3. Where the offending source of noise is nearly constant over a one-hour period, a measurement sampling period of less than one hour, but no less than five minutes, is permitted. This measurement shall be made with the sound-level meter set to slow A-weighting responses.

Noise Limit 3 – Impulsive Sources (§ 249-4.C)

This limit establishes absolute sound level limits for impulsive sources which typically last for less than 1-second. The sound level limits for impulsive sources use C-weighting and are shown in Table 4-2.

Table 4-2 Hudson Noise Limit 3

Impulsive Sound Level Limits (dBC fast)		
Receptor Land Use Category	**Daytime**	**Nighttime**
Residential/rural/institutional[1]	67	62
Business/recreational[2]	77	67
Industrial	87	87

Notes:
1. Hospitals, schools, places of worship, libraries, public parklands, etc.
2. Public playgrounds, swimming pools, athletic fields, golf courses, etc.

Noise Limit 4 – Background Referenced Sound Level (§ 249-4.D)

This limit is based on the measured background noise level which is defined as the level exceeded 90 percent of the time or the L_{90}. This limit prohibits the existing L_{90} from increasing by more than 10 dBA.

Noise Limit 5 – Pure-Tone Conditions (§ 249-4.E)

This limit prevents the emission of pure-tones which are defined as the sound pressure level in any octave band from exceeding the sound pressure level in the two adjacent octave bands by 3 dB or more.

Noise Limit 6 – High Noise Level Areas (§ 249-4.F)

This limit applies to high noise-level areas and is not applicable to the Project based on ambient measurements.

Noise Limit 7 – Snow-Traveling and Recreational Vehicles (§ 249-4.G)

This limit applies to snow-traveling and other recreational vehicles and is not applicable to the Project.

Noise Limit 8 – Water Vessels (§ 249-4.H)

This limit applies to powered water vessels and is not applicable to the Project.

Noise Limit 9 – Construction (§ 249-4.I)

This limit applies to construction noise and requires construction to take place during permitted hours (Monday through Saturday between the hours of 7:00 a.m. and 7:00 p.m.) and with well-maintained equipment. In addition, the quantitative limits set forth in Noise Limit 2 and Noise Limit 3 must also be met. This is discussed further in Section 8.9.

Noise Limit 10 – Prohibited Activities (§ 249-4.J)

This limit includes prohibited activities such as excessive vehicle horn use, truck idling for longer than 10 minutes, and exhaust discharge.

4.2 Site Plan Criteria

In addition to the above, Section 275-6 of the Town of Hudson Code provides that the Project proponent must demonstrate that adequate provisions be made by the Owner or his/her/its authorized agent for, among other things, E. Elimination of undesirable and preventable elements of pollution, such as noise, smoke, soot, particulates or any other discharge, into the environment which might prove harmful to persons, structures or adjacent properties (emphasis added). See § 275-6H. of the Hudson Site Plan Review Ordinance.

Other than the above, there are no other local, state, or federal regulations that apply to the Project. The State of New Hampshire does not provide any specific language that limits Project sound emissions. However, the State requires that all motor vehicles are equipped with proper working mufflers to prevent noise in Section 266:59, and also places limits on idling, all of which are addressed by Noise Limit 10 of the Hudson Town Code.

5.0 EXISTING SOUND LEVEL MEASUREMENT PROGRAM

5.1 Overview

A sound level survey was conducted, consistent with the requirements of § 249-3. "Guidelines for determining sound levels" of the Hudson Town Code and other generally accepted methodology, to characterize the existing acoustical environment near the site. Three continuous long-term sound level monitors were deployed for a 1-week period. Figure 5-1 shows the three long-term sound level measurement locations over aerial imagery of the Project area.

5.2 Sound Level Measurement Locations

Sound level measurement locations were chosen by Epsilon and are consistent with measurement locations selected for the previously Approved Project evaluated by Ostergaard Associates[3]. Two of these locations are along the southerly property line adjacent to the residential neighborhood, and one is along the east property line as shown in Figure 5-1. The three long-term monitoring locations were used to measure the existing sound levels at properties adjacent to the Project. Each sound level measurement location is described in the following subsections.

The coordinates for the sound level measurement locations are listed in Table 5-1.

Table 5-1 GPS Coordinates – Sound Level Measurement Locations

Location	Latitude	Longitude
ML1	42.71035°	-71.43246°
ML2	42.71258°	-71.42678°
ML3	42.71952°	-71.42268°

[3] Ostergaard Acoustical Associates. (December 2020). *Site Sound Evaluation and Control, Proposed Hudson Logistics Center, Hudson, NH, Revision 2.*

G:\Projects2\NH\6669\MXD\Fig5-1_Sound_Monitoring_Locations.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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Figure 5-1

Sound Monitoring Locations

5.2.1 ML1 – Fairway Drive

One continuous unattended sound level meter was placed north of Fairway Drive in the Town of Hudson. This location is representative of existing sound levels at the residences on Fairway Drive, near the southwest corner of the Project site. Figure 5-2 shows a photo of the sound level meter at this location.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 3:00 pm Tuesday, June 21, 2022, until 12:00 pm on Monday, June 29, 2022. In total, 189 1-hour measurement periods were recorded during the measurement program. In addition to sound data collection, continuous ground-level wind speed data were collected at this location.

Figure 5-2 Location ML1 - Sound Level Meter

5.2.2 ML2 – Eagle Drive

One continuous unattended sound level meter was placed north of Eagle Drive in the Town of Hudson. This location is representative of existing sound levels at the residences southeast of the Project site. Figure 5-3 shows a photo of the sound level meter at this location.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 4:00 p.m. Tuesday, June 21, 2022, until 11:00 a.m. on Wednesday, June 29, 2022. In total, 188 1-hour measurement periods were recorded during the measurement program.

Figure 5-3 Location ML2 - Sound Level Meter

5.2.3 ML3 – Linda Street

One continuous unattended sound level meter was placed west of Linda Street in the Town of Hudson. This location is representative of existing sound levels at the residences east of the Project site. Figure 5-4 shows a photo of the sound level meter at this location.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 5:00 p.m. Tuesday, June 21, 2022, until 11:00 a.m. on Wednesday, June 29, 2022. In total, 187 1-hour measurement periods were recorded during the measurement program.

Figure 5-4 Location ML3 - Sound Level Meter

5.3 Sound Level Measurement Instrumentation

Each of the monitoring locations used a Larson Davis (LD) model 831 sound level meter (SLM) to measure A-weighted (dBA) sound pressure levels. Each instrument was equipped with a LD PRM 831 preamplifier and a PCB 377C20 half inch microphone along with an environmental protection kit. The kit included a manufacturer open cell wind screen to reduce wind-induced noise over the microphone.

Each microphone was tripod-mounted at a height of five feet above ground level. Each meter was programmed to log statistical data every 1-hour for the following parameters: L_{10}, L_{50}, L_{90}, and L_{eq} along with a one-second time history using a "fast" response setting.

The LD831 meters meet Type 1 ANSI/ASA S1.4, ANSI S1.43-1997 (R2007), and IEC 61672 Class 1 standards for sound level meters and were calibrated and certified as accurate to standards set by the National Institute of Standards and Technology. These calibrations were conducted by an independent laboratory within 12 months of field placement. Certificates of calibration are provided available upon request. All measurement equipment was field calibrated before and after the surveys with an acoustical calibrator which meets the standards of IEC 60942-2003 Class 1L and ANSI/ASA S1.40-2006 (R2016). This instrumentation employed is consistent with the requirements of the Hudson Town Code.

5.4 Meteorological Equipment

Wind speed can have a strong influence on ambient sound levels. To understand how the existing sound levels are influenced by wind speed, continuous measurements were made at Location ML1 using a HOBO H21-USB micro-weather station (manufactured by Onset Computer Corporation). This wind speed instrumentation has a measurement range of 0 to 76 m/s (170 mph), an accuracy of ±1.1 m/s (2.4 mph), and a starting threshold of ≤1 m/s (2.2 mph).

6.0 SOUND LEVEL MEASUREMENT RESULTS

Sound levels were continuously measured at three measurement locations for over one week. Observations at each of the three locations were made by Epsilon personnel throughout the monitoring program during the time periods described below.

- Upon deployment (daytime)
- During the night (nighttime)
- Upon pickup (daytime)

Measured ambient sound levels are and described below and summarized in Table 6-1. Daytime hours were considered to be between 7:00 am and 6:00 pm and nighttime hours between 6:00 pm and 7:00 am, consistent with the Hudson Town Code definitions.

The measured L_{90} levels were processed to excluded high-frequency sounds due to sources such as insects, since they may be seasonal. These data are referred to as ANS-weighted. To be conservative, the ANS-weighted L_{90} levels are used to represent the ambient sound levels.

Table 6-1 Summary of Measured Ambient Sound Levels

Location	Period	L_{eq}	L_{90}	ANS L_{90}	L_{90} Sound Pressure Level by Octave-Band Center Frequency (Hz)								
					31.5	63	125	250	500	1000	2000	4000	8000
		dBA	dBA	dBA	dB	dB	dB	dB	dB	dB	dB	dB	dB
1	Day	46	38	37	48	49	45	37	36	36	29	25	22
2	Day	48	38	37	48	49	46	39	35	35	29	24	15
3	Day	46	41	40	51	50	45	39	37	37	31	25	17
1	Night	42	37	36	46	47	43	36	36	35	25	20	17
2	Night	43	36	35	45	46	42	36	34	33	26	19	13
3	Night	42	38	37	47	47	44	37	35	35	28	23	15

6.1 Location ML1 – Fairway Drive

Sound levels at location ML1 were influenced by vehicular traffic on local and distant roads, birds, wind, rustling vegetation, insects, animal movement nearby, activity from golfers and golf carts (daytime only), distant residential HVAC equipment noise (nighttime only), and occasional aircraft. The measured A-weighted 1-hour L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure A-1 in Appendix A. This figure includes ground-level wind speeds and precipitation periods measured at Location ML1. Data during certain time periods were excluded due to precipitation and ground-level winds exceeding 5 m/s. The resulting dataset includes a total of 173 1-hour periods of valid data.

The 1-hour L_{eq} during the measurement program at location ML1 ranged from 26 to 66 dBA. The 1-hour L_{90} during the measurement program at location ML1 ranged from 25 to 51 dBA.

6.2 Location ML2 – Eagle Drive

Sound levels at location ML2 were influenced by vehicular traffic on local and distant roads, birds, wind, rustling vegetation, insects, animal movement nearby, activity from golfers and golf carts (daytime only), and occasional aircraft. The measured A-weighted 1-hour L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure A-2 in Appendix A. This figure includes ground-level wind speeds and precipitation periods measured at Location ML1. Data during certain time periods were excluded due to precipitation and ground-level winds exceeding 5 m/s. The resulting dataset includes a total of 172 1-hour periods of valid data.

The 1-hour L_{eq} during the measurement program at location ML2 ranged from 31 to 62 dBA. The 1-hour L_{90} during the measurement program at location ML2 ranged from 24 to 50 dBA.

6.3 Location ML3 – Linda Street

Sound levels at location ML3 were influenced by vehicular traffic on local and distant roads, birds, wind, rustling vegetation, insects, animal movement nearby, activity from golfers and golf carts (daytime only), and occasional aircraft. The measured A-weighted 1-hour L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure A-3 in Appendix A. This figure includes ground-level wind speeds and precipitation periods measured at ML1. Data during certain time periods were excluded due to precipitation and ground-level winds exceeding 5 m/s. The resulting dataset includes a total of 171 1-hour periods of valid data.

The 1-hour L_{eq} during the measurement program at location ML3 ranged from 31 to 68 dBA. The 1-hour L_{90} during the measurement program at location ML3 ranged from 29 to 47 dBA.

7.0 SOUND MODELING

7.1 Modeling Receptors

Project sound pressure levels were modeled at 13 receptors representing nearby residential, business, and industrial locations. The receptor locations and naming convention were selected to be consistent with the receptors shown in the Ostergaard Associates sound study[4] for the previously Approved Project. Receptors are labeled B through J and were placed at a height of five feet which is the approximate ear height of a standing person. Residential receptors designated with a prime symbol (B', C', D', and F') were placed at a height of 15-feet to quantify sound levels at a second story building façade.

7.2 Modeled Sound Sources

The primary sources of sound from the Project include rooftop RTUs and truck activity. There will also be a life-safety generator for emergency use.

In this report, trucks refer to semi-trailer trucks used for freight transport. There will also be passenger vehicles present onsite. Passenger vehicles traveling at low speeds (below 35 mph) are well below 10 dB quieter than trucks and will therefore have an insignificant contribution to the overall sound level as discussed in Section 3.0 of this report. There will also be minimal passenger vehicle activity other than during shift changes. Accordingly, passenger vehicles were not included in the sound model.

The Hudson Town Code distinguishes between continuous and impulsive noise sources. There are different limits for each type of source, and they are evaluated using different metrics. RTU equipment and noise from trucks driving onsite have been evaluated as continuous, since they may be fairly constant despite fluctuations in the overall sound level. Impulse noises are defined in the Hudson Town Code as being of short duration. Appropriately, for this evaluation, sounds due to truck back-up alarms, truck hitching, and truck airbrakes have been evaluated as impulsive, since they have a very short duration. To be conservative, back-up alarms were assumed to be tonal, although broadband back-up alarms that are designed to blend in better with ambient sounds exist and may be used by some on-site vehicles.

Table 7-1 summarizes the sound power level data for each sound source used in the model. Figure 7-1 shows the locations of the modeled sound sources, modeling receptors, proposed project building, and project boundary over aerial imagery of the site. The sound levels of the RTUs and generator were provided by Langan, and the sound levels of the trucking activities were based on measurements performed by Epsilon at a similar facility.

[4] Ostergaard Acoustical Associates. (December 2020). *Site Sound Evaluation and Control, Proposed Hudson Logistics Center, Hudson, NH, Revision 2.*

Table 7-1 Modeled Sound Power Levels per Noise Source

Sound Source	Broadband (dBA, re: 1 pW)	L_{eq} Sound Power Level (dB, re: 1 pW) by Octave Band Center Frequency (Hz)								
		31.5	63	125	250	500	1k	2k	4k	8k
RTU[2]	86	97[1]	97	88	84	83	81	77	73	67
Truck Driving[3]	99	85	91	94	92	95	95	92	88	80
Truck Backup Alarm	109	-	-	-	-	-	109	-	-	-
Truck Hitching (L_{max})[3]	118	113	109	107	107	108	113	112	107	103
Truck Airbrake (L_{max})[3]	109	95	95	92	94	91	103	104	102	96
Generator[4]	104	124	111	110	102	99	98	97	93	88

1. 31.5 Hz data assumed.
2. Data provided by Langan from tenant for 25-ton RTUs.
3. Data from measurements taken by Epsilon personnel at a similar facility.
4. Sound power level data for Cummins 300DQDAC 300 kW diesel generator with Quiet Site II Second Stage mounted muffler. Tenant specification.

7.3 Modeling Methodology

The sound impacts associated with the proposed Project were predicted using the CadnaA sound level calculation software developed by Datakustic GmbH. This software uses the ISO 9613-2 international standard for sound propagation.[5] The benefits of this software are a more refined set of computations due to the inclusion of topography, ground attenuation, multiple building reflections (if applicable), drop off with distance, and atmospheric absorption. The CadnaA software allows for frequency-based octave band calculation of sound from multiple sources as well as computation of diffraction.

Inputs and significant parameters employed in the model are described below.

- *Project Layout:* The locations of the proposed warehouse building, truck loading bays, internal access roads, project boundaries, sound fences, and final grading were provided to Epsilon by Langan.

- *Modeling Grid:* A modeling grid with a 10-meter spacing was calculated for the entire Project Area and surrounding region. The grid was modeled at a height of 1.5 meters (five feet) above ground level for consistency with the discrete modeling points. This modeling grid allowed for the creation of sound level isolines.

- *Terrain Elevation:* Elevation contours for the modeling domain were imported into CadnaA which allowed for consideration of terrain shielding where appropriate. The terrain height contour

[5] Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation, International Standard ISO 9613-2:1996 (International Organization for Standardization, Geneva, Switzerland, 1996).

elevations for the modeling domain were generated from elevation information derived from the National Elevation Dataset (NED) developed by the U.S. Geological Survey. In addition, elevation data from the future site grading plan was integrated into the model near the proposed building and roadways.

- *Ground Attenuation:* Spectral ground absorption was calculated using a G-factor of 0 for the Project site which corresponds to "hard ground" (pavement). Ground absorption for the off-site areas were calculated using a G-factor of 0.5 which corresponds to "mixed ground" consisting of both hard and porous ground cover.

Sound power levels for each sound source type were input into CadnaA to model the source generated L_{eq} sound pressure levels. The resulting sound pressure levels were predicted at the modeling receptors.

Several modeling assumptions inherent to the ISO 9613-2 calculation methodology, or selected as conditional inputs by Epsilon, were implemented in the CadnaA model to ensure conservative results (i.e., higher sound levels), and are described below:

- All modeled sources were assumed to be operating simultaneously at their highest sound level to yield the greatest sound level impacts.

- As per ISO 9613-2, the model assumed favorable conditions for sound propagation, corresponding to a moderate, well-developed ground-based temperature inversion, as might occur on a calm, clear night, or equivalently downwind propagation.

- Meteorological conditions assumed in the model (T=10°C/RH=70%) were selected to minimize atmospheric attenuation in the 500 Hz and 1 kHz octave bands where the human ear is most sensitive.

- No additional attenuation due to tree shielding, air turbulence, or wind shadow effects was considered in the model.

The sound modeling and assumptions employed above are generally accepted methodology for a project of this nature.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

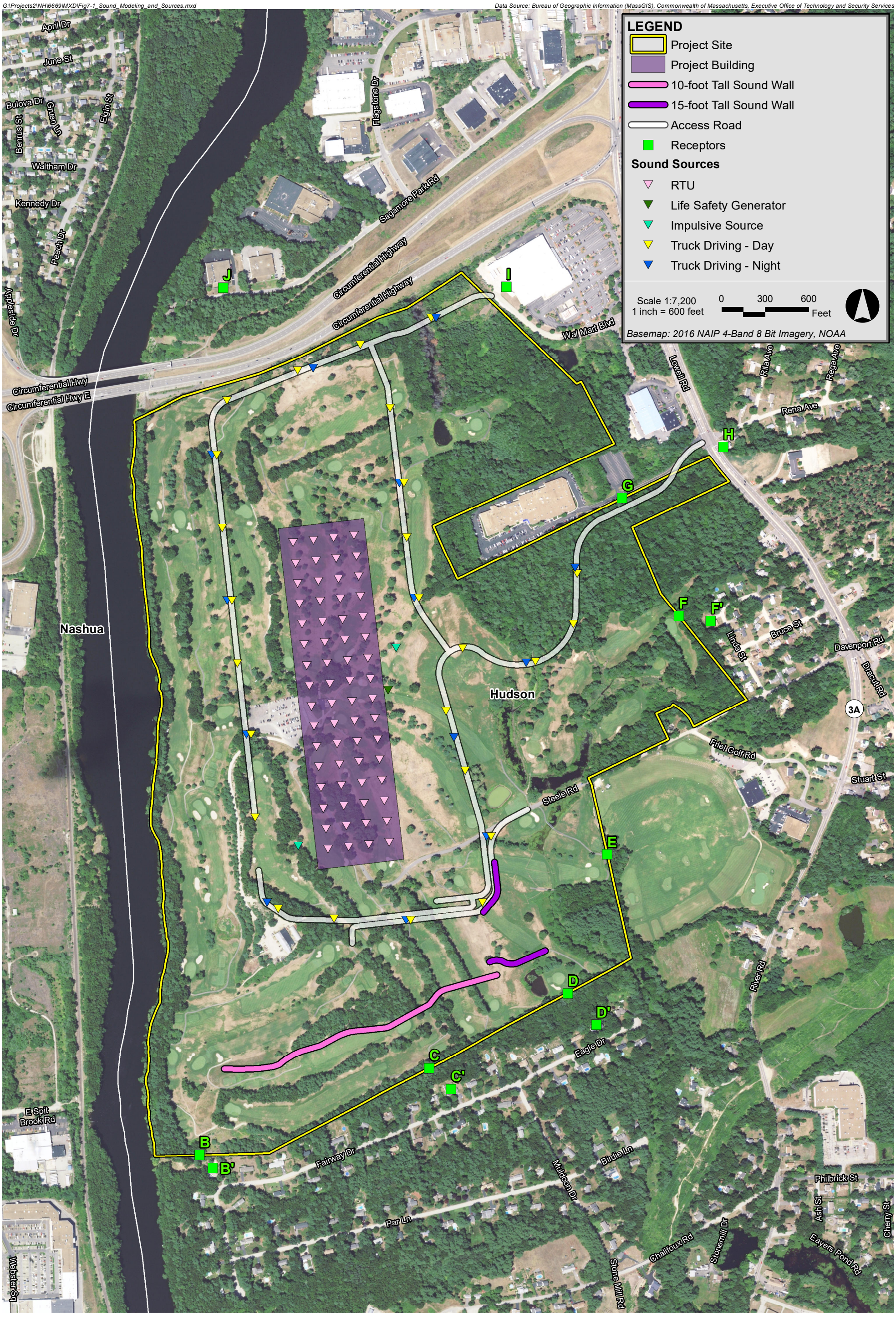

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Figure 7-1

Sound Modeling and Sound Source Locations

G:\Projects2\NH\6669\MXD\Fig7-2_Continuous_Source_Results_Daytime.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

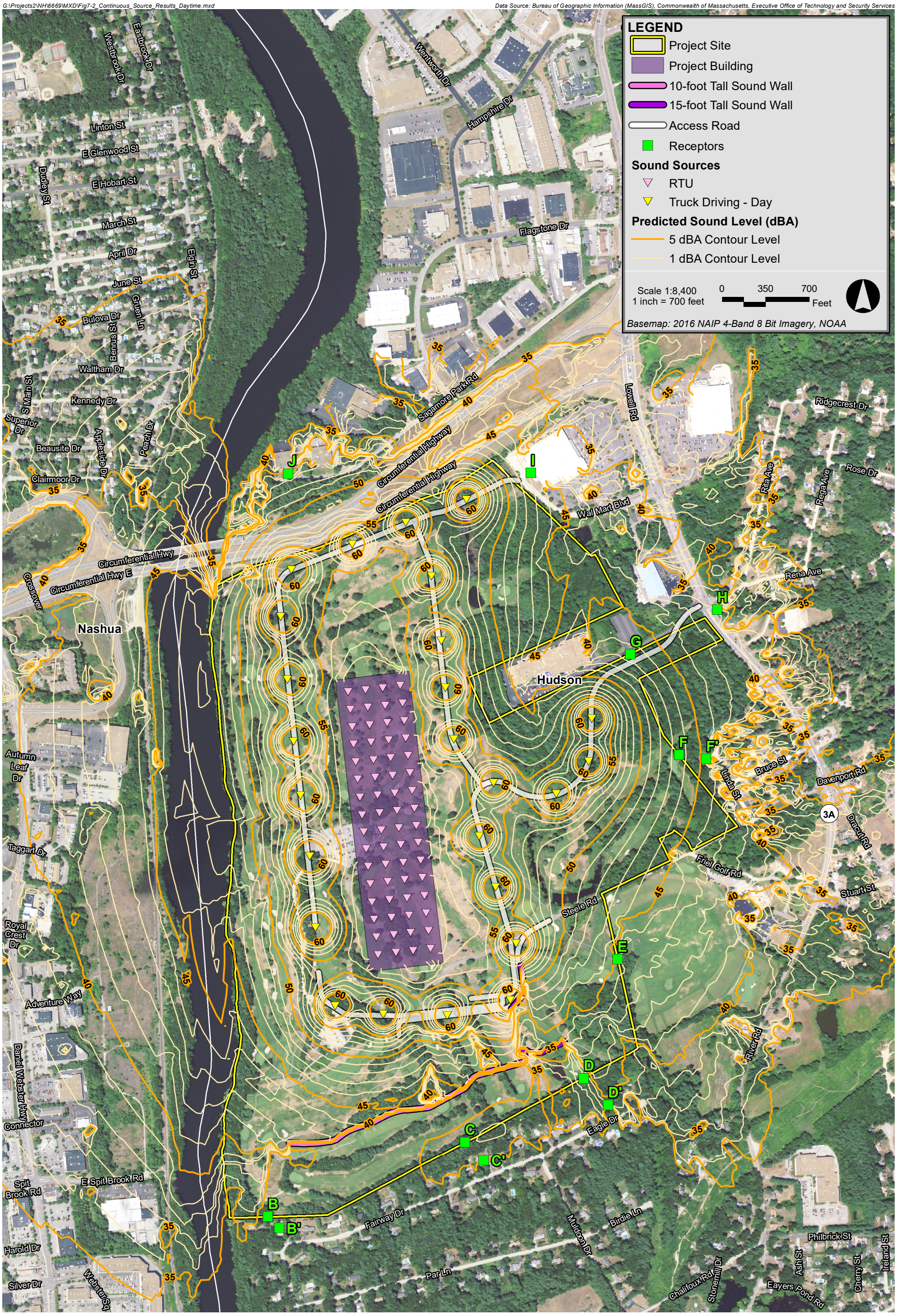

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Figure 7-2

Continuous Source Results Daytime

G:\Projects2\NH\6669\MXD\Fig7-3_Continuous_Source_Results_Nighttime.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

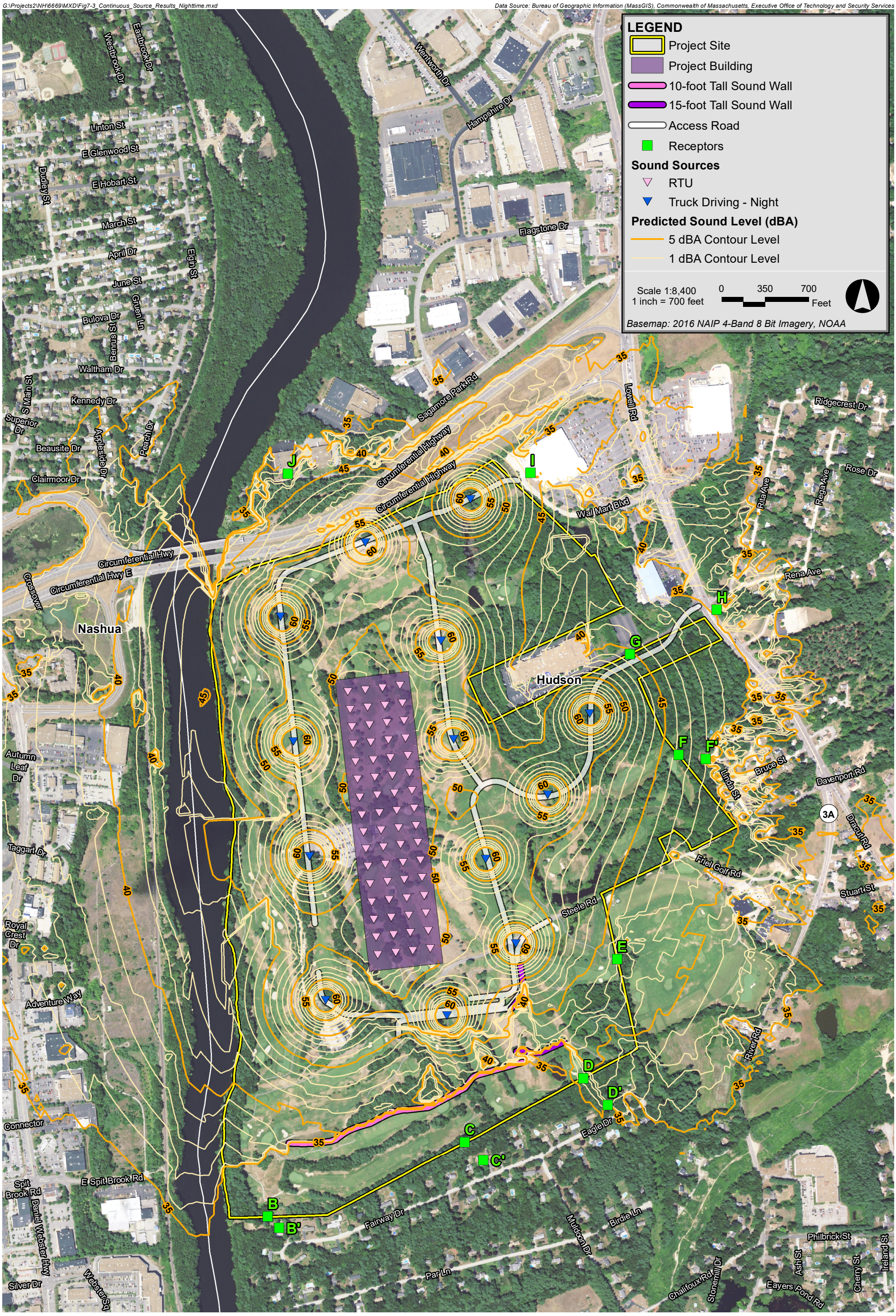

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Figure 7-3

Continuous Source Results Nighttime

8.0 SOUND MODELING RESULTS AND EVALUATION

The modeling results are presented and compared to the Hudson Town Code sound level limits in the following sections. In addition, the December 2020 sound modeling results for the previously Approved Project are compared to the sound modeling results for the current Project in Section 8.2.

8.1 Hudson Town Code Noise Limits

Each of the ten noise limits set forth in the Hudson Town Code is evaluated with the appropriate model results and discussed below.

8.1.1 Noise Limit 1 – Noise Pollution

Limit 1 prohibits conditions that contribute to noise pollution. This is a qualitative limit with no numerical restrictions. Compliance with the quantitative limits discussed in other sections of the noise code should prevent noise pollution and therefore satisfy this limit.

8.1.2 Noise Limit 2 – Continuous Sources

Limit 2 applies to continuous sounds. There are several sources that will be in continuous operation. These include RTUs, trucks driving on the internal access roads and truck courts, and the life-safety generator (in the rare times that it operates). There are additional short-duration trucking sources that will be discussed in Section 8.1.3 and evaluated under the impulsive sound limits.

8.1.2.1 Truck and RTU

All 64 RTUs may be in continuous operations. Similarly, during periods of heavy truck traffic, the sound from trucks driving onsite may be constant although fluctuating in magnitude. Therefore, both RTUs and truck driving noise have been conservatively modeled as operating simultaneously to evaluate this limit.

Hourly traffic count data provided by Langan from the tenant indicates that the maximum number of trucks entering or exiting the facility per hour on a typical day is expected to be 30 trucks during the day between 4:00 pm and 5:00 pm. During nighttime hours, the maximum number of driving trucks is expected to be 16 between 6:00 am and 7:00 am. For modeling purposes, it was conservatively assumed the maximum number of trucks driving in the facility at any time will be greater than half the hourly count, or 25 trucks during the day and 13 trucks at night.

Sound levels due to the operation of all 64 RTUs and the maximum number of operating trucks are shown in Table 8-1. The highest continuous facility sound level at a residential receptor is 47 dBA during the day and 44 dBA at night. The predicted Project only sound levels are all below the Town of Hudson continuous sound level limits. The predicted Project only daytime sound levels are below the nighttime limit at all locations and therefore will meet the Hudson Town Code sound level limits for weekends and holidays. The source locations are shown in Figure 7-1.

Table 8-1 Truck and RTU Sound Modeling Results Compared to Continuous Limits (Noise Limit 2)

Receptor ID	Receptor Zone	Project Continuous Daytime Level, L_{eq} dBA	Hourly Daytime Limit, 1-Hr L_{eq}, dBA	Project Continuous Nighttime Level, L_{eq} dBA	Hourly Nighttime Limit, 1-Hr L_{eq}, dBA
B	Residential	34	55	31	50
B'	Residential	36	55	34	50
C	Residential	36	55	33	50
C'	Residential	36	55	33	50
D	Residential	38	55	36	50
D'	Residential	40	55	39	50
E	Business	44	65	43	55
F	Residential	47	55	44	50
F'	Residential	45	55	43	50
G	Industrial	47	75	45	75
H	Residential	42	55	40	50
I	Industrial	47	75	45	75
J	Industrial	45	75	41	75

8.1.2.2 Life-Safety Generator

The Project includes one 300 kW life-safety generator onsite for emergency use. The life-safety generator will only operate during the day on weekdays for brief, routine testing when the background sound levels are high, or during an interruption of power from the electrical grid, when other nearby businesses and residents will likely be experiencing a similar interruption in power. An additional analysis combined noise from the Project's continuous sources (Table 8-1) and the life-safety generator to reflect worst-case conditions during a period of generator testing. The predicted generator only sound levels are all below the Town of Hudson Town Code's continuous sound level limits. The results are presented with the hourly daytime limits in Table 8-2.

Table 8-2 Generator Sound Modeling Results Compared to Continuous Limits (Noise Limit 2)

Receptor ID	Receptor Zone	Modeled Generator Daytime Level, L_{eq} dBA	Hourly Daytime Limit, 1-Hr L_{eq}, dBA
B	Residential	34	55
B'	Residential	36	55
C	Residential	36	55
C'	Residential	37	55
D	Residential	38	55
D'	Residential	41	55
E	Business	45	65
F	Residential	47	55
F'	Residential	46	55

Receptor ID	Receptor Zone	Modeled Generator Daytime Level, L_{eq} dBA	Hourly Daytime Limit, 1-Hr L_{eq}, dBA
G	Industrial	47	75
H	Residential	42	55
I	Industrial	47	75
J	Industrial	45	75

8.1.3 Noise Limit 3 – Impulsive Sources

Limit 3 applies to impulsive sounds which are defined as sources that usually have a duration of less than one second. Three types of impulsive sounds were identified as likely to occur onsite: truck and terminal tractor back-up alarms, truck hitching, and truck airbrakes.

Due to the brief duration of sound from each of these sources, it is highly unlikely that more than one impulse sound event will occur at the same time. However, to be conservative, two sources of each type were modeled as occurring simultaneously, one on each side of the proposed building. The impulsive sources were modeled at the locations closest to residential receptors where they could potentially occur. Sources were therefore placed at the southernmost loading dock on each side of the building, as shown in Figure 7-1.

Impulsive noise modeling results are shown in Table 8-3 along with the Town of Hudson nighttime impulsive sound limit. The modeling results are presented using C-weighting, per the Hudson Town Code. As shown in Table 8-3, the modeled sound levels at all receptors due to impulsive sources are well below the Hudson limits for impulsive noise.

Table 8-3 Sound Modeling Results for Impulsive Sources (Noise Limit 3)

Receptor ID	Receptor Zone	Modeled Back-Up Alarm Sound Level, dBC	Modeled Hitching Sound Level, dBC	Modeled Airbrake Sound Level, dBC	Impulsive Nighttime Sound Limit, dBC
B	Residential	42	47	42	62
B'	Residential	46	48	46	62
C	Residential	45	49	44	62
C'	Residential	44	49	44	62
D	Residential	44	48	44	62
D'	Residential	46	52	46	62
E	Business	50	56	50	67
F	Residential	49	55	49	62
F'	Residential	50	54	50	62
G	Industrial	49	55	49	87
H	Residential	50	53	50	62
I	Industrial	48	52	48	87
J	Industrial	46	50	46	87

8.1.4 Noise Limit 4 – Background Referenced Sound Level

Limit 4 is based on the measured ambient sound levels to ensure that the Project does not cause a large increase in the existing sound level in the area. The L_{90} sound levels were used to characterize the ambient sound level in accordance with the Hudson Town Code. To be conservative, the L_{90} sound levels were ANS-weighted to remove any high-frequency contribution from insects. The background data are shown in Table 6-1. The measurement location closest to each receptor was used to characterize the ambient level at each receptor.

8.1.4.1 Truck and RTU

Continuous sound levels due to daytime and nighttime truck driving and RTU sources are compared to the daytime and nighttime ambient levels in Table 8-4. As the table shows, the increase above ambient is 10 dBA or less at all receptors per the Hudson Town Code's criteria for Noise Limit 4.

Table 8-4 Truck and RTU Modeling Results Compared to Background Levels (Noise Limit 4)

Receptor ID	Ambient Reference Location	Modeled Truck and RTU Sound Level, L_{eq} dBA	Ambient ANS L_{90} Sound Level, dBA	Total Ambient Plus Project, dBA	Increase Above Ambient, dBA
Weekday Daytime Levels (7 am to 6 pm)					
B	ML1	34	37	39	2
B'	ML1	36	37	40	3
C	ML2	36	37	40	2
C'	ML2	36	37	40	3
D	ML2	38	37	41	3
D'	ML2	40	37	42	5
E	ML2	44	37	45	8
F	ML3	47	40	47	7
F'	ML3	45	40	46	6
G	ML3	47	40	47	7
H	ML3	42	40	44	4
I	ML3	47	40	48	7
J	ML3	45	40	46	6
Weekday Nighttime Levels (6 pm to 7 am)					
B	ML1	31	36	37	1
B'	ML1	34	36	38	2
C	ML2	33	35	37	2
C'	ML2	33	35	37	2
D	ML2	36	35	39	4
D'	ML2	39	35	40	5
E	ML2	43	35	44	8
F	ML3	44	37	45	7

Receptor ID	Ambient Reference Location	Modeled Truck and RTU Sound Level, L_{eq} dBA	Ambient ANS L_{90} Sound Level, dBA	Total Ambient Plus Project, dBA	Increase Above Ambient, dBA
F'	ML3	43	37	44	6
G	ML3	45	37	46	8
H	ML3	40	37	42	4
I	ML3	45	37	46	9
J	ML3	41	37	43	5
Weekend/Holiday Levels (Daytime Source, Nighttime Ambient)					
B	ML1	34	36	38	2
B'	ML1	36	36	39	3
C	ML2	36	35	39	3
C'	ML2	36	35	39	3
D	ML2	38	35	40	4
D'	ML2	40	35	41	6
E	ML2	44	35	45	10
F	ML3	47	37	47	10
F'	ML3	45	37	46	8
G	ML3	47	37	47	10
H	ML3	42	37	43	6
I	ML3	47	37	47	10
J	ML3	45	37	46	8

8.1.4.2 Life-Safety Generator

The sound levels due to the life-safety generator combined with the continuous truck and RTU sources are shown compared to the ambient daytime sound levels in Table 8-5. The temporary increase in ambient sound level due to generator operation will be below 10 dBA at all receptors per the Hudson Town Code's criteria for Noise Limit 4.

Table 8-5 Generator Modeling Results Compared to Daytime Background Levels (Noise Limit 4)

Receptor ID	Ambient Reference Location	Modeled Generator Sound Level, L_{eq} dBA	Daytime Ambient ANS L_{90} Sound Level, dBA	Total Ambient Plus Project, dBA	Increase Above Ambient, dBA
Daytime Levels (7 am to 6 pm)					
B	ML1	34	37	39	2
B'	ML1	36	37	40	3
C	ML2	36	37	40	3
C'	ML2	37	37	40	3
D	ML2	38	37	41	4
D'	ML2	41	37	43	5
E	ML2	45	37	46	9

Receptor ID	Ambient Reference Location	Modeled Generator Sound Level, L_{eq} dBA	Daytime Ambient ANS L_{90} Sound Level, dBA	Total Ambient Plus Project, dBA	Increase Above Ambient, dBA
F	ML3	47	40	48	8
F'	ML3	46	40	47	7
G	ML3	47	40	48	8
H	ML3	42	40	44	4
I	ML3	47	40	48	8
J	ML3	45	40	46	6

8.1.5 Noise Limit 5 – Pure-Tone Conditions

Limit 5 prohibits pure-tone conditions where the sound pressure level in one octave band is 3 dB or more than the sound levels in each of the two adjacent octave bands. The modeled Project-only sound levels were logarithmically combined with the ambient L_{90} levels to predicted future sound levels. The octave band data for these analyses are shown below.

8.1.5.1 Truck and RTU

Octave band sound pressure level data for daytime and nighttime truck and RTU continuous sources combined with the ambient L_{90} octave band data are shown in Table 8-6. As the table shows, no pure-tones are anticipated.

Table 8-6 Truck and RTU Pure-Tone Analysis (Noise Limit 5)

Receptor ID	L_{eq} Sound Pressure Level (dB) by Octave-Band Center Frequency (Hz)[1]								
	31.5	63	125	250	500	1k	2k	4k	8k
Daytime Levels (7 am to 6 pm)									
B	49	49	46	38	37	37	30	25	22
B'	50	50	46	39	38	38	30	25	22
C	49	50	46	40	37	37	30	24	15
C'	49	50	46	40	37	37	31	24	15
D	49	50	46	40	38	38	32	24	15
D'	49	50	46	40	39	39	33	24	15
E	51	52	47	41	41	43	38	27	16
F	52	52	47	41	42	45	40	30	17
F'	53	52	47	41	43	44	38	27	17
G	52	52	47	41	42	45	40	30	17
H	53	52	46	40	40	41	35	25	17
I	52	52	47	41	42	45	40	30	17
J	52	51	47	41	42	44	38	28	17
Nighttime Levels (6 pm to 7 am)									
B	47	48	44	37	37	35	26	20	17

Receptor ID	L_{eq} Sound Pressure Level (dB) by Octave-Band Center Frequency (Hz)[1]								
	31.5	63	125	250	500	1k	2k	4k	8k
B'	48	49	44	38	37	36	27	20	17
C	47	47	43	38	36	34	27	19	13
C'	47	47	43	37	36	35	27	19	13
D	47	47	43	38	37	36	29	20	13
D'	47	48	43	38	38	38	31	20	13
E	49	50	45	39	39	41	36	25	13
F	50	50	46	39	40	42	37	27	15
F'	50	51	45	40	41	41	35	25	15
G	50	51	46	39	41	43	39	29	16
H	51	51	45	38	38	39	33	23	15
I	50	50	46	39	41	43	39	30	16
J	49	49	45	39	39	40	34	25	15

1. Sound pressure levels have been rounded to whole decibels; calculations were performed using values with additional precision.

8.1.5.2 Life-Safety Generator

The life-safety generator operational levels have been combined with the continuous truck and RTU levels and the ambient L_{90} octave band data in Table 8-7 to demonstrate that no pure-tones are anticipated.

Table 8-7 Generator Pure-Tone Analysis (Noise Limit 5)

Receptor ID	L_{eq} Sound Pressure Level (dB) by Octave-Band Center Frequency (Hz)[1]								
	31.5	63	125	250	500	1k	2k	4k	8k
Daytime Levels (7 am to 6 pm)									
B	49	49	46	38	37	37	30	25	22
B'	50	50	46	39	38	38	30	25	22
C	53	50	47	40	38	37	30	24	15
C'	52	50	47	40	38	37	31	24	15
D	53	50	47	40	38	38	32	24	15
D'	61	52	48	41	40	40	33	24	15
E	64	54	49	42	41	43	38	27	16
F	63	54	49	42	43	45	40	30	17
F'	62	54	48	42	43	44	38	27	17
G	63	54	49	42	43	45	40	30	17
H	61	54	48	40	40	42	35	25	17
I	61	53	48	41	42	45	40	30	17
J	53	51	47	41	42	44	38	28	17

1. Sound pressure levels have been rounded to whole decibels; calculations were performed using values with additional precision.

Trucks, terminal tractors, and possibly other onsite vehicles are typically equipped with backup alarms that are tonal by design. These alarms are required for safety reasons and are excluded from regulation under §249-5(4) of the Hudson Town Code.

Based upon, and subject to, the foregoing, Hudson Town Code Noise Limit 5 is met.

8.1.6 Noise Limit 6 – High Noise Level Areas

This limit applies to high noise level areas where the ambient levels are as high as or higher than 3 dB less than the Limit 2 levels. This limit is not applicable to the Project based on ambient measurements.

8.1.7 Noise Limit 7 – Snow-Travelling and Recreational Vehicles

This limit applies to snow-traveling vehicles, trail bikes, and off-highway recreational vehicles and is not applicable to the Project.

8.1.8 Noise Limit 8 – Water Vessels

This limit applies to powered water vessels and is not applicable to the Project.

8.1.9 Noise Limit 9 – Construction

This limit applies to construction and requires outdoor construction to take place only on Monday through Saturday between the hours of 7:00 am and 7:00 pm. In addition, sound levels may not exceed the quantitative limits shown in Table 4-1 and Table 4-2 to comply with Noise Limits 2 and 3. In addition, all construction equipment must have the properly installed and maintained silencing systems provided by the manufacturers. The Project will adhere to a construction schedule that meets these requirements. Based upon, and subject to, the foregoing, Hudson Town Code Limit 9 is met.

8.1.10 Noise Limit 10 – Prohibited Activities

This limit prohibits the unreasonable use of vehicle horns, truck idling for longer than 10 minutes, and unmitigated exhaust discharges. The Project will restrict those activities to comply with these requirements. Based upon, and subject to, the foregoing, Hudson Town Code Limit 10 is met.

8.2 Comparison to Previous Project Analysis

A sound level analysis was performed for the previously Approved Project by Ostergaard Associates in December 2020[6]. The modeled results from the previously Approved Project are compared to the results for continuous truck and RTU sources associated with the current Project and are shown in Table 8-8.

[6] Ostergaard Acoustical Associates. (December 2020). *Site Sound Evaluation and Control, Proposed Hudson Logistics Center, Hudson, NH, Revision 2.*

Table 8-8 indicates that as modeled, the proposed Project has lower continuous sound levels at all locations and time periods than the levels presented for the Approved Project.

Table 8-8 Truck and RTU Sound Modeling Results Compared to Previous Project Results

Receptor ID	Receptor Zone	Modeled Daytime Levels Due to Current Project, L_{eq} dBA	Modeled Nighttime Levels Due to Current Project, L_{eq} dBA	Modeled Levels due to Previous Project, L_{eq} dBA
B	Residential	34	31	48
B'	Residential	36	34	49
C	Residential	36	33	50
C'	Residential	36	33	51
D	Residential	38	36	51
D'	Residential	40	39	50
E	Business	44	43	56
F	Residential	47	44	51
F'	Residential	45	43	51
G	Industrial	47	45	71
H	Residential	42	40	46
I	Industrial	47	45	68
J	Industrial	45	41	54

8.3 Site Plan Criteria

As described above, Section 275-6.H of the Town of Hudson Code provides that the Project proponent must demonstrate that adequate provisions be made by the Owner or his/her/its authorized agent for the limitation of undesirable and preventable elements of pollution, *such as noise*. into the environment which might prove harmful to persons, structures or adjacent properties. Based upon the demonstrated compliance with the Hudson Noise Regulations under Chapter 249 of the Hudson Town Code, we have demonstrated that the sound levels generated by the Project will not prove harmful to persons, structures or adjacent properties, and such sound levels from the proposed Project will have less of a potential impact when compared to the Approved Project.

9.0 RECOMMENTATIONS

Epsilon recommends the following sound mitigating measures:

- The proposed earthen berm and sound fences discussed in Section 2.0 should be constructed at the locations shown in Figure 7-1. The current plans have the berm located south of the Project with a 10-foot-tall, 2,010-foot-long sound fence on top of the berm. There plans also include two 15-foot-tall fences, a 378-foot-long fence near the southeast edge of the main building and 407-foot-long fence east of the berm as shown in Figure 7-1.

- Onsite terminal tractors can be equipped with broadband or ambient-sensing backup alarms to minimize any tonal noise from reversing vehicles. These are designed to provide a similar level of worker protection while minimizing the impact of tonal sounds on nearby receptors.

- Construction activities should adhere to the limitations set forth in Noise Limit 9 as discussed in Section .8.1.9 of this report.

- Certain site activities such as idling and horn use should be restricted to comply with the requirements of Noise Limit 10 as discussed in Section 8.1.10 of this report.

10.0 CONCLUSIONS

Plans call for Property to be redeveloped into the Hudson Logistics Center in Hudson, NH. The new development will contain a main building with accessory structures that will all require truck activity. Existing residences are nearby to the east and south; industrial and non-noise sensitive uses are in the other directions. The Hudson Noise Ordinance provides average hourly code and other limits that apply to site sound. In addition to this, the Hudson Noise Ordinance requires that site sound not exceed the background sound level by more than 10 dB.

The results of the modeling demonstrate that, with the proposed mitigation measures, and provided that applicable performance practices under the Hudson Noise Ordinance are complied with, the future sound levels from the Project are predicted to be below the limits set forth in the Hudson Town Code. This includes limits applicable under §249-4 that are not otherwise excluded or exempt under § 249-5, at all receptors under the Hudson Noise Ordinance and applicable noise requirements under the Site Plan Regulation criteria. Thus, no negative acoustical impact is anticipated.

The proposed mitigation features and use of non-tonal back-up alarms for on-site terminal tractors demonstrate good acoustical planning and will put the end users in the best position to minimize impacts on neighbors. Section 249-1 of Chapter 249 of the Hudson Ordinances states the Noise Ordinance "is enacted to protect, preserve and promote the health, safety, welfare and quality of life for the citizens of Hudson, New Hampshire, through the reduction, control and prevention of noise by establishing maximum noise levels upon and between premises, prohibiting certain noise-producing activities…" Based upon the foregoing, and assuming the performance standards described in the Hudson Noise Ordinance above are followed, the proposed site activities will comply with the applicable standards described under Chapter 249.

The proposed Project also results in a further reduction in predicted continuous noise levels at the receptor locations adjacent to the residential and other areas when compared to the previously Approved Project. Moreover, since the applicable provisions of the Hudson Noise Ordinance will be complied with, the proposed Project and related operations at the site make adequate provision "… to guard against such conditions as would involve danger or injury to health or safety,…" and will eliminate," undesirable and preventable elements of pollution, such as noise, ..., into the environment which might prove harmful to persons, structures or adjacent properties," all as required under Section 275-6.H of the Hudson Site Plan Regulations.

Appendix A

Graphs of Ambient Sound Levels at Measurement Locations

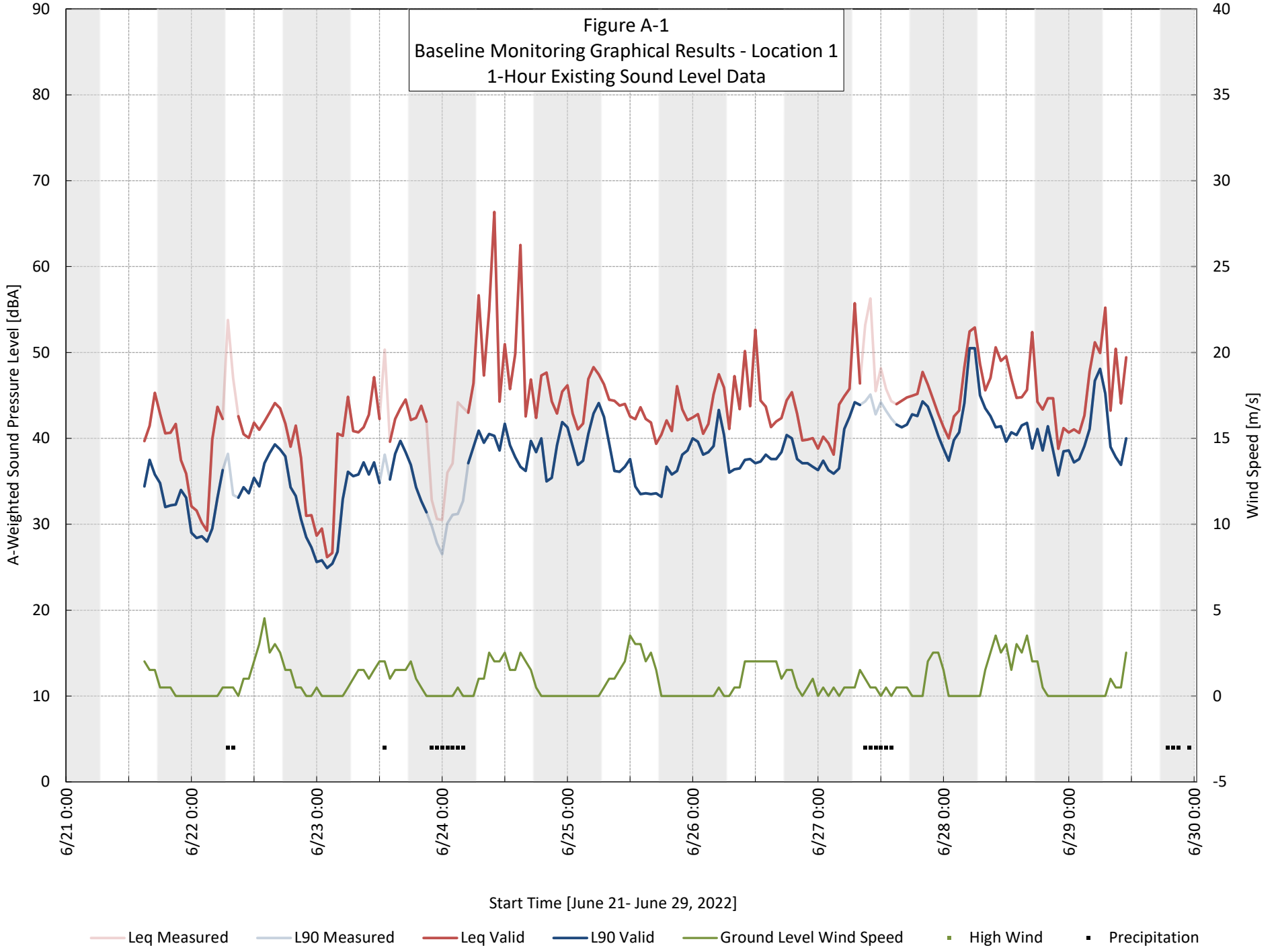
Figure A-1
Baseline Monitoring Graphical Results - Location 1
1-Hour Existing Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
6/21 0:00
6/22 0:00
6/23 0:00
6/24 0:00
6/25 0:00
6/26 0:00
6/27 0:00
6/28 0:00
6/29 0:00
6/30 0:00
Start Time [June 21- June 29, 2022]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation

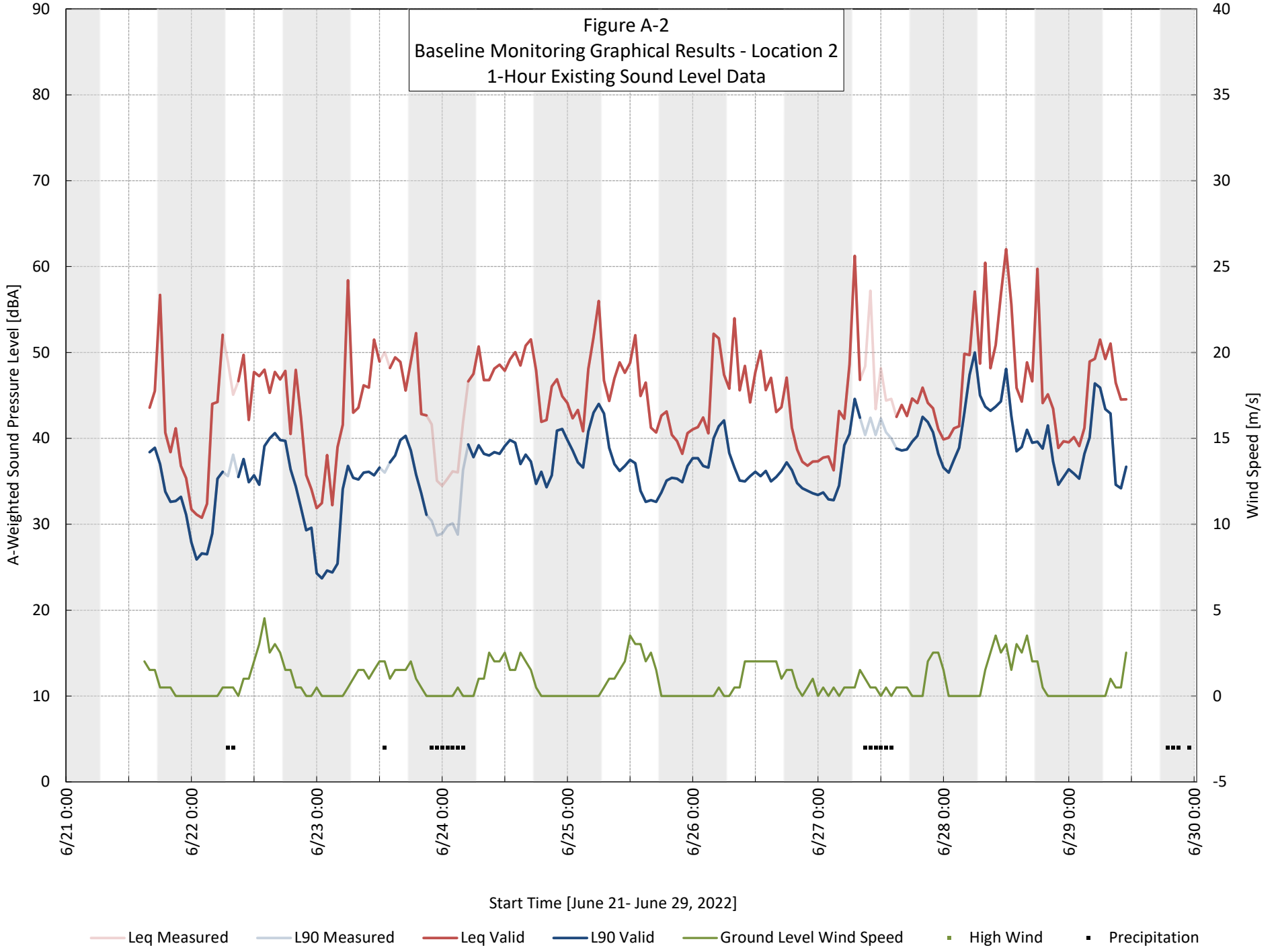
Figure A-2
Baseline Monitoring Graphical Results - Location 2
1-Hour Existing Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
6/21 0:00
6/22 0:00
6/23 0:00
6/24 0:00
6/25 0:00
6/26 0:00
6/27 0:00
6/28 0:00
6/29 0:00
6/30 0:00
Start Time [June 21- June 29, 2022]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation

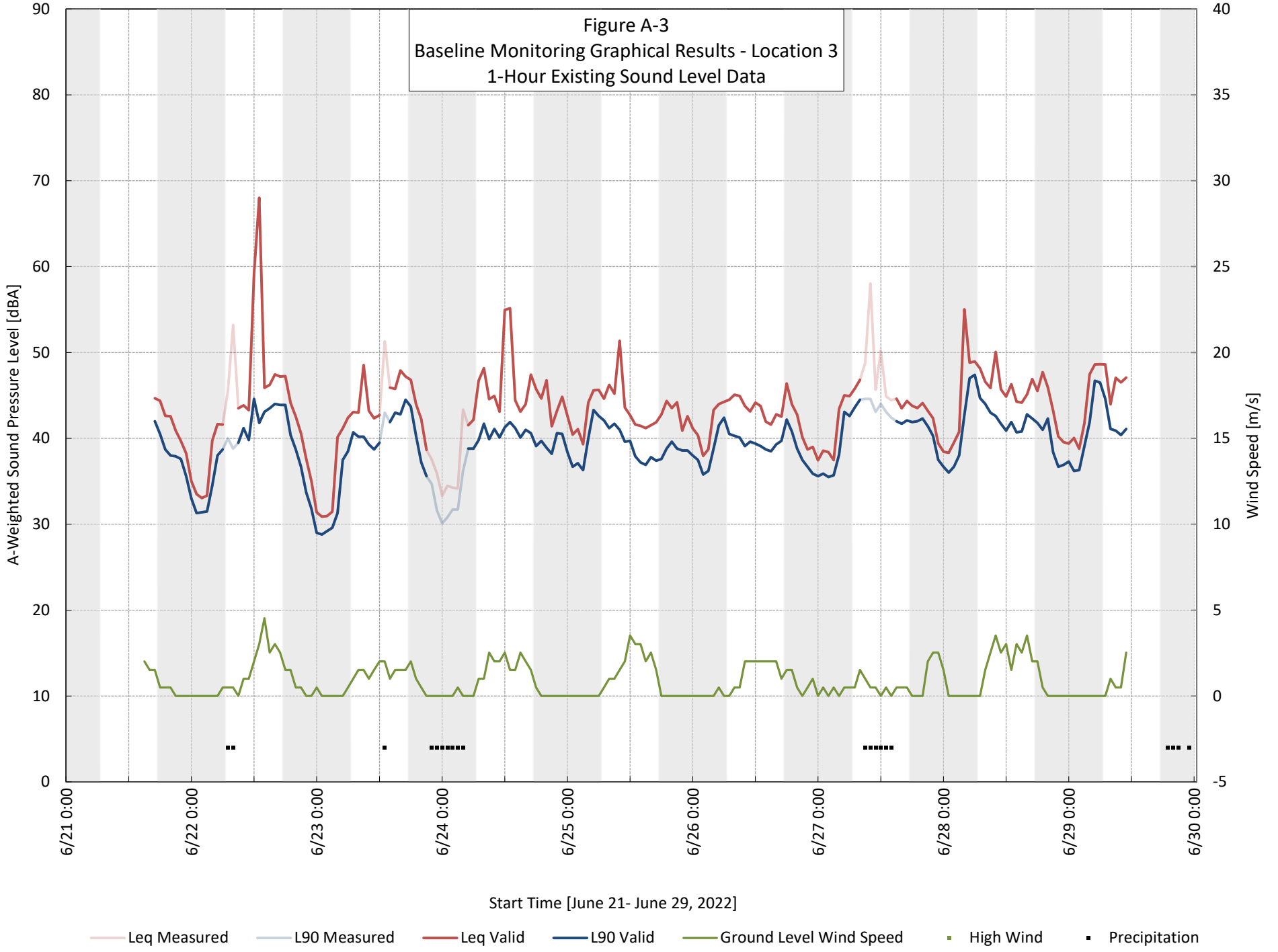
Figure A-3
Baseline Monitoring Graphical Results - Location 3
1-Hour Existing Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
6/21 0:00
6/22 0:00
6/23 0:00
6/24 0:00
6/25 0:00
6/26 0:00
6/27 0:00
6/28 0:00
6/29 0:00
6/30 0:00
Start Time [June 21- June 29, 2022]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

November 28, 2022

Brian Groth
Town Planner
Town of Hudson, NH
12 School Street
Hudson, NH 03051
bgroth@hudsonnh.gov

Re: Hudson Logistics Center: Fire Department Comment Response
59 Steele Road
Hudson, NH
Langan Project No.: 151010102

Dear Mr. Groth,

On behalf of Hillwood, Langan is submitting this comment response letter for the proposed project, Hudson Logistics Center in Hudson, NH.

Enclosed please find our responses to the letter from Scott Tice, Fire Chief, dated September 29, 2022. Below please find each comment followed by our response in **bold.**

FIRE DEPARTMENT COMMENTS

1. Please provide the markings for fire access in accordance with NFPA 1.

   COMMENT RESPONSE: The plans will be revised to provide fire lane pavement markings at the appropriate locations.

2. The project shall have all proposed roadways named and formal addressing approved by the Hudson Fire Department prior to the issuance of building permit.

   COMMENT RESPONSE: Roadways will be named in advance of the issuance of a building permit.

3. The project shall have temporary signage approved by the Hudson Fire Department noting the addressing and associated access points during construction.

   COMMENT RESPONSE: Temporary signage will be approved prior to the commencement of construction.

4. The common driveway shall have a permanent sign approved by the Hudson Fire Department noting the address of the building that is accessed from the driveway. The sign shall be approved and installed before issuance of any building permits.

   COMMENT RESPONSE: Acknowledged.

5. The Fire Hudson Department will require three copies of the fire hydrant layout for the full site. The hydrant plans shall be signed by the property engineer, Town of Hudson Engineer and the Fire Chief. Water supply for fire protection shall be made available prior to the issuance of building permits. Additionally we would ask the developer to review the Wall Mart Blvd area. It appears that hydrants were not installed on the new section of the access road. This item will need to be addressed.

   COMMENT RESPONSE: ***Please see the attached plan showing the current designed locations for fire hydrants on site. The plan includes hydrants proposed on Walmart Blvd. Prior to the issuance of a building permit, three copies of a plan with the final hydrant locations will be provided for signature by the Town of Hudson Engineer and the Fire Chief.***

The following life safety and fire protection concerns provided are for informational purposes to the applicant and Planning Board for this project. Final determination on these issues occur after further review of the project.

A. The proposed building will require an approved sprinkler system. The Hudson Fire Department upon receipt of the building plans shall conduct this review. This requirement is in accordance with the International Building Code (IBC) and Hudson Town Code (HTC), current revision, Chapter 210, Article VI. Any fire protection system shall be monitored by an approved fire alarm system.

   COMMENT RESPONSE: ***Acknowledged.***

B. The fire alarm system shall be connected to the Hudson Fire Departments municipal fire alarm system or a substantially equivalent system in accordance with the Hudson Town Code, Chapter 210. A site plan detailing the aerial or underground layout to the municipal fire alarm connection shall be provided before the utilities are completed for this project.

   COMMENT RESPONSE: ***Acknowledged.***

C. Any required fire alarm system component shall remain accessible at all times.

   COMMENT RESPONSE: ***Acknowledged.***

D. Due to the size of the building the Hudson Fire Department will require an emergency communication system review by our radio system vendor. The vendor shall review the need for signal amplification for first responder communication signals to be received and transmitted from inside the building; additionally, a review of transmission from the site to the Town of Hudson radio system. As outlined in the Building and Fire Code, the AHJ shall determine the acceptable level of coverage for the site. Any improvements identified shall be at the cost of the developer.

   COMMENT RESPONSE: ***Acknowledged.***

E. A blasting permit will be required for any blasting on site in accordance with the Hudson Town Code, Chapter 202.

***COMMENT RESPONSE:* Acknowledged.**

F. Will there be inside or outside storage above the exempt amounts of hazardous materials, liquids or chemicals presenting a physical or health hazard as listed in the International Building Code, Section 307, 414 or 415? All Tier II reporting requirements shall be followed each year.

***COMMENT RESPONSE:* No outdoor storage of hazardous materials, liquids or chemicals presenting a physical or health hazard as listed in the International Building Code, Section 307, 414 or 415 are anticipated. All Tier II reporting requirements will be followed each year for any materials inside the building.**

G. All storage either inside or outside of hazardous materials, liquids or chemicals presenting a physical or health hazard as listed in NFPA 1, Section 20.15.2.2 shall be in accordance with the applicable portions of the following:

NFPA 13, Standard for the installation of Sprinkler Systems NFPA 30, Flammable and Combustible Liquids Code
NFPA 30B, Code for the Manufacture and Storage of Aerosol Products NFPA 230, Standard for the Fire Protection of Storage
NFPA 430, Code for the Storage of Liquids and Solid Oxidizers NFPA 432, Code for theStorage of Organic Peroxide Formulations NFPA 434, Code for the Storage of Pesticides

***COMMENT RESPONSE:* Acknowledged.**

ADDITIONAL ITEMS FOR CONSIDERATIONS

Openly, this project will be the largest commercial construction project to impact the Town of Hudson in recent times. The Hudson Fire Department has reviewed this project with an open mind utilizing a risk management approach to reviewing impact both short term and long term. We worked through the following process.

1. Identify concerns/problems
2. Develop a list of potential ways to improve safety
3. What are the opportunities to address the concerns
4. What are the benefits

Consideration needs to be given to the following;

A. Prior to construction starting on this project, the Hudson Fire Department will look to engage site developers to discuss construction practice and programs. The intent is to identify training and equipment short comings of the Hudson Fire Department. With this

gap analysis complete, any additional first responder training and equipment needs shall be the cost of the developer.

***COMMENT RESPONSE:* Acknowledged.**

B. During the building construction portion of this project, the Hudson Fire Department believes it will have the need to directly assign a member of the Inspectional Services staff specifically for this project. The developer shall provide a trailer with associated utilities and HVAC support for an onsite work space for members of the Town of Hudson Inspectional Services and Land Use Divisions. Additionally, the impact of having to assign a full time inspector to the site for the duration of this construction project shall be at the cost of the developer. This has been highlighted in the fiscal impact for the project.

***COMMENT RESPONSE:* Acknowledged.**

C. There is an associated risk with the amount of equipment on the roof of the building. This equipment will lead to the roof being a common response area for the Hudson Fire Department. In an effort to safety and efficiently work in this area, we will need to review the need of a tower truck for the Hudson Fire Department fleet. This need is created by the sheer size of the building as a facility of this size is not currently part of our risk assessment.

***COMMENT RESPONSE:* Acknowledged.**

Sincerely,
Langan Engineering and Environmental Services, Inc.

Frank Holmes, PE
Senior Associate

cc:

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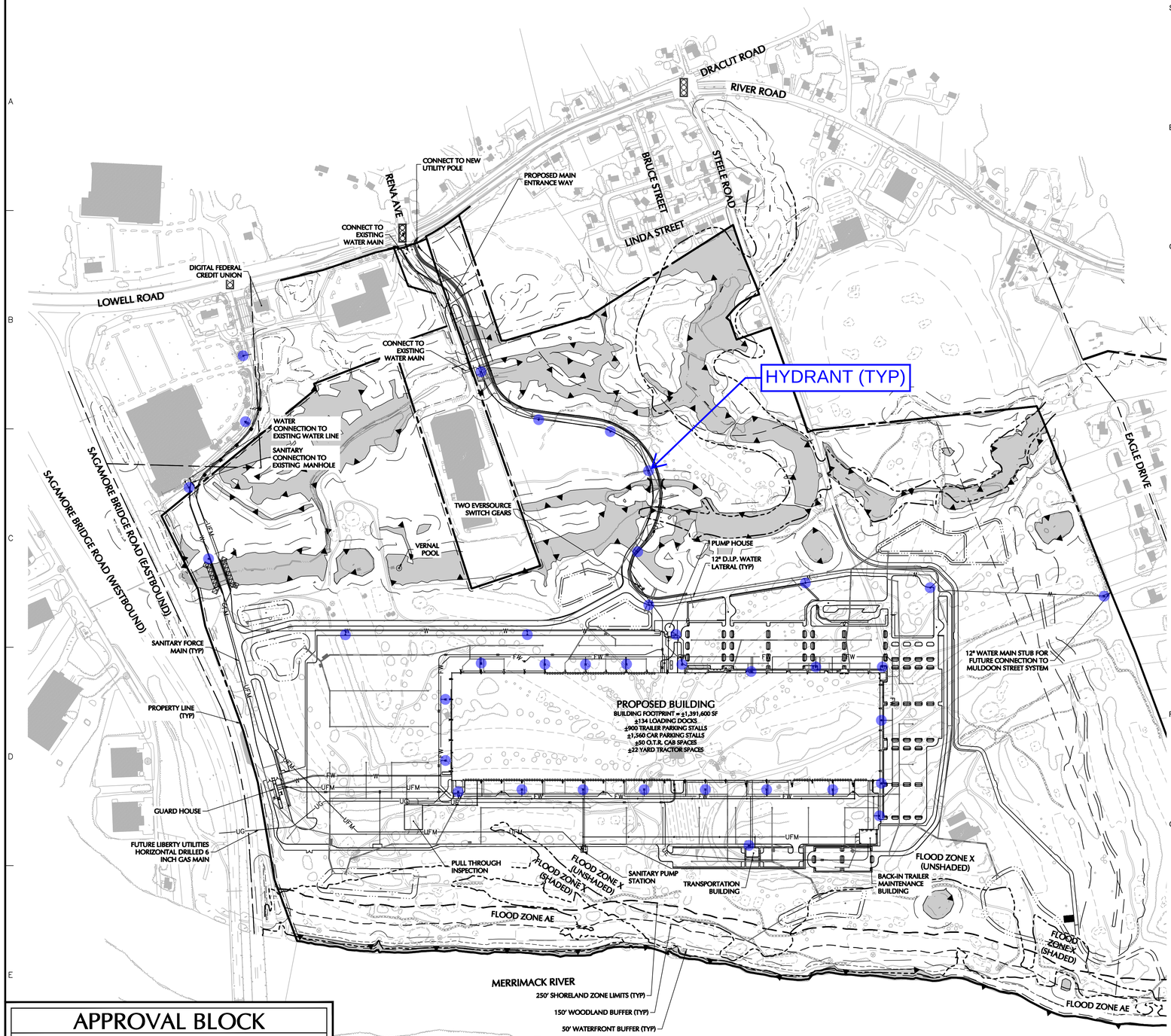


NOTES:

SURVEY CONTROL DATA:

1. HORIZONTAL DATUM: NAD83(1986)*
2. HORIZONTAL PROJECTION: NH STATE PLANE
3. VERTICAL DATUM: NGVD29 (FORMERLY KNOWN AS USGS DATUM)*
4. UNITS: US SURVEY FEET

*HORIZONTAL AND VERTICAL DATUMS WERE VERIFIED USING G.P.S. (KEYNET NETWORK) WITH OBSERVATIONS ON SITE AND ON NGS (FORMERLY USGS) "DISK D-26" LOCATED ON THE NORTHERLY SIDE OF NH ROUTE 101A, APPROXIMATELY 4.5 MILES WEST OF THE NASHUA LIBRARY.

ELECTRIC UTILITIES:

1. ALL ELECTRICAL MANHOLES AND VAULTS TO BE PROVIDED BY THE CONTRACTOR. REFER TO DRAWING #R-10001-1 FOR 7' X 13' MANHOLE WITH EVERSOURCE COVER.
2. CONTRACTOR TO ENSURE PRECAST CONCRETE ELECTRICAL MANHOLE AND VAULT KNOCKOUTS ARE SIZED TO ACCOMMODATE THE APPROPRIATE DUCT BANK CONFIGURATION AND DIMENSIONS.
3. UNDERGROUND EXCAVATION, INSTALLATION, AND SLABS TO BE PERFORMED BY CONTRACTOR. EVERSOURCE TO INSTALL CABLE, SWITCHGEAR, AND TERMINATIONS. TRANSFORMERS TO BE PROVIDED BY CONTRACTOR.

GRAVITY SEWER:

1. PVC SHALL CONFORM WITH ASTM D3034 AND ASTM D2412.
2. PVC JOINTS SHALL CONFORM WITH ASTM D3212.
3. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW PRESSURE AIR TESTS. LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH THE FOLLOWING TESTING STANDARDS IN EFFECT AT THE TIME THE TEST IS CONDUCTED: ASTM F1417 "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR"; OR UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
4. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THERE IS NO STANDING WATER IN THE SEWER, AND TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
5. ALL PLASTIC SEWER PIPE SHALL BE VISIBLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF THE AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.
6. MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACCUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED. A MANHOLE MAY BE BACKFILLED PRIOR TO PERFORMING A VACCUUM TEST, BUT IF THE MANHOLE FAILS THE VACCUUM TEST, BACKFILL SHALL BE REMOVED SO REPAIRS TO THE MANHOLE CAN BE MADE FROM THE OUTSIDE OF THE MANHOLE PRIOR TO RETESTING.
7. THE MANHOLE VACCUUM TEST SHALL CONFORM TO THE FOLLOWING: THE INITIAL VACCUUM PRESSURE SHALL BE 10 IN. HG, AND THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1-IN HG PRESSURE DROP TO 9 INCHES HG SHALL BE NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP IN LENGTH, NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10-15 FEET DEEP, AND NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
8. THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTABLE LIMITS SPECIFIED. INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
9. IMMEDIATELY FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
10. ALL SANITARY PIPES SHALL BE SDR-26 WHEN THE VERTICAL DISTANCE BETWEEN PIPE CROSSINGS IS 18" OR LESS AND THE HORIZONTAL SEPARATION DISTANCE BETWEEN PIPES IS LESS THAN 10' (20' TOTAL) FROM BOTH SIDES OF THE CENTERLINE OF THE PIPE OR UNTIL THE PIPE SEPARATION IS 10' HORIZONTAL, WHICHEVER IS LONGER.

FORCE MAIN:

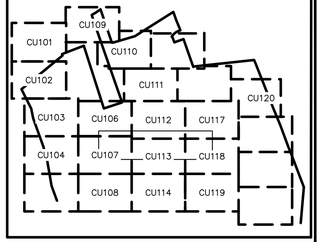
1. PVC SHALL CONFORM WITH ASTM D2241 OR D1785 PER ENV-WQ 704.08(c).
2. HDPE SHALL CONFORM WITH ASTM D3035 PER ENV-WQ 704.08(d).
3. INSULATION SHALL BE INSTALLED ON THE SANITARY PIPE AT CROSSINGS WITH THE STORM PIPE WHEN THE VERTICAL DISTANCE BETWEEN PIPE CROSSINGS IS 18" OR LESS AND THE HORIZONTAL SEPARATION DISTANCE BETWEEN PIPES IS LESS THAN 10' (20' TOTAL) FROM BOTH SIDES OF THE CENTERLINE OF THE PIPE OR UNTIL THE PIPE SEPARATION IS 10' HORIZONTAL, WHICH EVER IS LONGER.

OTHER:

1. WET WELLS SHALL BE LEAK TESTED USING METHOD ACI 350.1 METHOD HST-NML.
2. ACCESS HATCH TO WET WELL SHALL HAVE A WARNING SIGN FOR CONFINED SPACE ENTRY PER ENV-WQ 705.08 (J).
3. PUMP STATIONS WITH PUMP CAPACITIES OF 250 GPM AND LESS SHALL RECORD JUMP RUN TIMES OR HAVE CONTINUOUS FLOW RECORDING.
4. OWNER SHALL SUBMIT PUMP STATION O&M MANUAL TO DES WITHIN 60 DAYS FOLLOWING COMPLETION OF PUMP STATION CONSTRUCTION. O&M MANUAL SHALL PROVIDE INFORMATION AND GUIDANCE FOR PUMP STATION OPERATION AND MAINTENANCE. PLEASE PROVIDE OWNER CONTACT INFO/E-MAIL ADDRESS.
5. ALL CONSTRUCTION FOR DRINKING WATER SHALL CONFORM TO AWWA STANDARDS.
6. AN AS-BUILT PLAN SHOULD BE PROVIDED TO THE HUDSON WATER DEPARTMENT SHOWING THE HORIZONTAL AND VERTICAL LOCATION OF THE NEWLY CONSTRUCTED WATER MAINS, HYDRANTS, AND VALVES.
7. INSULATION SHALL BE INSTALLED ON ANY WATER MAIN WITHIN 5 FEET OF ANY SEWER OR STORM STRUCTURES, OR PARALLEL SEWER OR STORM PIPING THAT IS AT AN ELEVATION ABOVE THE WATER MAIN.

SHEET LEGEND

1"=1500'



Date	Description	No.
11/18/22	PEER REVIEW RESPONSE	1

Revisions

Signature Date

PROFESSIONAL
PROFESSIONAL LICENSE No. 0000000000

LANGAN
Langan Engineering and Environmental Services, Inc.
100 CAMBRIDGE STREET, SUITE 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

HUDSON LOGISTICS CENTER

MAP No. 239, LOT No. 1
HUDSON
HILLSBOROUGH NEW HAMPSHIRE

Drawing Title

OVERALL UTILITY PLAN

Project No.	Drawing No.
151010101	CU100
Date: 09/09/2022	
Drawn By: MPG	
Checked By: FH	

Project No. 151010101

APPROVAL BLOCK

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING:_____

PLANNING BOARD CHAIRMAN:_____ SIGNATURE DATE:_____
PLANNING BOARD SECRETARY:_____ SIGNATURE DATE:_____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF THE PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

300 0 150 300
SCALE: 1 INCH = 300 FEET

BCM Environmental & Land Law, PLLC
Solutions for Northern New England

November 16, 2022

Via Email
Town of Hudson Planning Board
c/o Brian Groth, Town Planner
bgroth@hudsonnh.gov

Re: Hudson Logistics Center Amended Site Plan & Conditional Use Permit
SP# 12-22 Lowell & Steele Road
CU# 07-22 Map 239/Lot 001

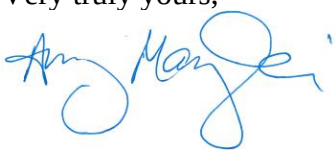
Dear Chair Malley and Members of the Planning Board,

I write the Planning Board on behalf of my clients, more than thirty-five Hudson residents, with respect to the above-referenced applications submitted by Hillwood Enterprises, L.P. to redevelop the golf course, property identified as Town Tax Map 234, Lot 5 and Tax Map 239, Lot 1, into the amended proposal for the Hudson Logistics Center ("Proposed Project"). Please note that many, though not all, of my clients reside in the residential neighborhood to the south, directly abutting the Proposed Project. Please make this letter a part of your record in these matters.

My clients will not oppose the applications.

Thank you for your time and attention to my clients' input on these applications.

Very truly yours,



Amy Manzelli, Esq.
Licensed in New Hampshire & Maine
(603) 225-2585
manzelli@nhlandlaw.com

Cc:
Clients
Town of Hudson Selectboard via email to bos@hudsonnh.gov and c/o Steve Malizia, Town Administrator to smalizia@hudsonnh.gov