

MEMORANDUM

To: Tyler Murphy

From: Michael T. Lannan, P.E.

Subject: Lakeville, MA Warehouse Sound Study- Project Grading and Berm Height Update

Date: February 24, 2021

Ref 4597

At the January 7, 2021 public hearing that included the results of the sound evaluation, Tech demonstrated that a future tenant operating with the truck delivery/pick-up assumptions made would meet the MassDEP Noise Policy. While one goal of public hearings is to present a future compliance demonstration and to answer questions with respect to the compliance studies or assumptions made, another goal is for the design team to listen to the Town's and abutters' concerns and to consider modifications that could be made to the design to further address concerns, if possible.

The project team listened to the concerns raised, especially with respect to line-of-sight in the winter and initially when tree growth would be less mature, to the concerns raised with respect to miscellaneous warehouse sound and truck activity on the side of the warehouse facing Rush Pond Road, and also to concerns in the new subdivision direction. As a result, the design has been revised to lower the building base elevation, to increase the berm height for some of the closest residents, to provide a berm between the new subdivision and the warehouse, and to provide a long 8-foot high fence with sound attenuating material covering the bottom 6 feet. The opaque fence covering material will also act as a visual barrier.

Table 1A-C compares the predicted total future sound levels from the Project during the daytime (6:00 am- 5:59 pm), evening hours (6:00 pm- 10:59 pm) and nighttime (11:00 pm- 5:59 pm) from the October 20, 2020 study to the revised model results this past week. As one can see from the tables during all three time periods the sounds impact essentially remains the same or is reduced up to 4 dBA. One location, 21 Rhode Island Road may increase up to one decibel during the daytime. This location is on the opposite side of Rush Pond Road and has higher actual daytime background, as it is significantly closer to Route 495. The indiscernible increase at 21 Rhode Island Road is related to the lower warehouse base elevation, and higher berm, and sound reflection. It is still not less that the potential sound increase at Rush Pond Road. What this modified study does suggest is that the berm/fence has reached an effectiveness "sweet spot". Any more added more berm/fence height and the sound will be reflected towards other houses.

The greatest reductions from these revisions are at the locations closest to the warehouse on Rush Pond Road which previous modeling demonstrated, could present the highest potential incremental increase in sound. Please note that the potential sound increase at 2 Lori Lane is not reduced by the berm. 2 Lori Lane is much closer to the public road than the ambient monitoring location, so the actual background sound is likely higher than the assumption that uniformly presumed the quieter background data.

TABLE 1A
PREDICTED TOAL FUTURE SOUND LEVELS
FROM PROPOSED WAREHOUSE DEVELOPMENT
AT 43 MAIN STREET, LAKEVILLE
DAYTIME (6:00 AM- 5:59 PM)

ID	Address	Oct-20-2020	Feb-20-2021	Predicted Incremental Sound Level Increase (dBA)
		Total Future Sound Level (dBA)	Total Future Sound Level (dBA)	
R1	22 Main Street *	44	44	0
R2	2 Lori Lane *	49	49	0
R3	23 Rush Pond Road	44	43	-1
R4	21 Rush Pond Road	45	44	-1
R5	19 Rush Pond Road	45	44	-1
R6	20 Rush Pond Road	46	44	-2
R7	18 Rush Pond Road	46	45	-2
R8	16 Rush Pond Road	49	46	-3
R9	14 Rush Pond Road	48	45	-3
R10	12 Rush Pond Road	45	44	-1
R11	10 Rush Pond Road	46	44	-2
R12	New Development #1 *	46	44	-2
R13	New Development #2 *	47	45	-2
R14	New Development #3 *	45	44	-1
R15	21 Rhode Island Road *	44	45	1
R16	9 Rush Pond Road	44	43	0

* Conservatively assumes the background sound is as quiet as the shielded background location in the woods near Rush Pond Road

TABLE 1B
PREDICTED TOAL FUTURE SOUND LEVELS
FROM PROPOSED WAREHOUSE DEVELOPMENT
AT 43 MAIN STREET, LAKEVILLE
EVENING TIME (6:00 PM- 10:59 PM)

ID	Address	Oct-20-2020	Feb-20-2021	Predicted Incremental Sound Level Increase (dBA)
		Total Future Sound Level (dBA)	Total Future Sound Level (dBA)	
R1	22 Main Street *	37	37	0
R2	2 Lori Lane *	42	42	0
R3	23 Rush Pond Road	38	37	-1
R4	21 Rush Pond Road	39	38	-1
R5	19 Rush Pond Road	39	38	-2
R6	20 Rush Pond Road	40	38	-2
R7	18 Rush Pond Road	41	39	-2
R8	16 Rush Pond Road	43	39	-4
R9	14 Rush Pond Road	42	38	-3
R10	12 Rush Pond Road	38	38	-1
R11	10 Rush Pond Road	39	38	-1
R12	New Development #1 *	39	38	-2
R13	New Development #2 *	40	38	-2
R14	New Development #3 *	38	38	-1
R15	21 Rhode Island Road *	38	38	0
R16	9 Rush Pond Road	37	37	0

* Conservatively assumes the background sound is as quiet as the shielded background location in the woods near Rush Pond Road

TABLE 1C
PREDICTED TOAL FUTURE SOUND LEVELS
FROM PROPOSED WAREHOUSE DEVELOPMENT
AT 43 MAIN STREET, LAKEVILLE
NIGHTTIME (11:00 PM- 5:59 AM)

ID	Address	Oct-20-2020	Feb-20-2021	Predicted Incremental Sound Level Increase (dBA)
		Total Future Sound Level (dBA)	Total Future Sound Level (dBA)	
R1	22 Main Street *	34	34	0
R2	2 Lori Lane *	40	40	0
R3	23 Rush Pond Road	36	35	-1
R4	21 Rush Pond Road	36	35	-1
R5	19 Rush Pond Road	37	35	-2
R6	20 Rush Pond Road	38	36	-2
R7	18 Rush Pond Road	39	37	-2
R8	16 Rush Pond Road	40	37	-4
R9	14 Rush Pond Road	39	36	-3
R10	12 Rush Pond Road	36	35	-1
R11	10 Rush Pond Road	36	35	-1
R12	New Development #1 *	36	35	-2
R13	New Development #2 *	37	35	-2
R14	New Development #3 *	35	34	-1
R15	21 Rhode Island Road *	34	34	0
R16	9 Rush Pond Road	34	34	0

* Conservatively assumes the background sound is as quiet as the shielded background location in the woods near Rush Pond Road