MEMO

TO:	Harry Heller
FROM:	Kenneth Kaliski, P.E., INCE Bd. Cert.
DATE:	December 10, 2024
SUBJECT:	Response to HMMH Gales Ferry sound peer review

Thank you for forwarding to me HMMH's November 10, 2024 peer review of RSG's "Cashman Gales Ferry Intermodal, LLC Industrial Regrading Sound Study." While the peer review found that the RSG report was comprehensive and largely conservative, there are several issues HMMH noted that I respond to in this memo.

Issue 1 – 61 dBA on a residential parcel

HMMH noted that the sound level was 61 dBA on the residential parcel on Pheasant Run during Phase 5 of the project. We respond that the sound level from the project does not exceed 61 dBA, so the project is modeled in compliance would the Connecticut regulatory noise limit.

Nevertheless, RSG reviewed Phase 5 of the project with the applicant. The applicant has agreed that no drilling or blasting would occur during this phase. This results in a substantive decrease in sound from the project. The highest project sound levels for this phase drops from 61 dBA to 54 dBA for any Ledyard residential parcel and to 51 dBA at any Ledyard residence.

Issue 2 – Suggestion of maximum of 56 dBA at residential parcels

HMMH suggested that, while 61 dBA is the applicable noise limit, there should be a 5 dB buffer to take into account a modeling margin of error and variability in equipment sound emissions. This would make the modeling design goal 56 dBA on any residential property.

We respond that the modeling was done conservatively, with all equipment operating at their maximum sound level simultaneously. As a result, there is no need to apply additional adjustments to the modeled sound levels to make them more conservative. The recommended 5 dB adjustment appears to be arbitrary. We know of no jurisdictions that require a 5 dB buffer for sound propagation modeling.

Nevertheless, the applicant has agreed to implement additional sound mitigation measures to reduce the modeled sound levels to 56 dBA at all residential parcels within Ledyard. These are described in Issue 4.

Issue 3- Labels of sound monitors

HMMH noted that the label of the sound monitors in the report were ordinal in Figure 2, but descriptive elsewhere. In response, we have revised Figure 2 as shown below.

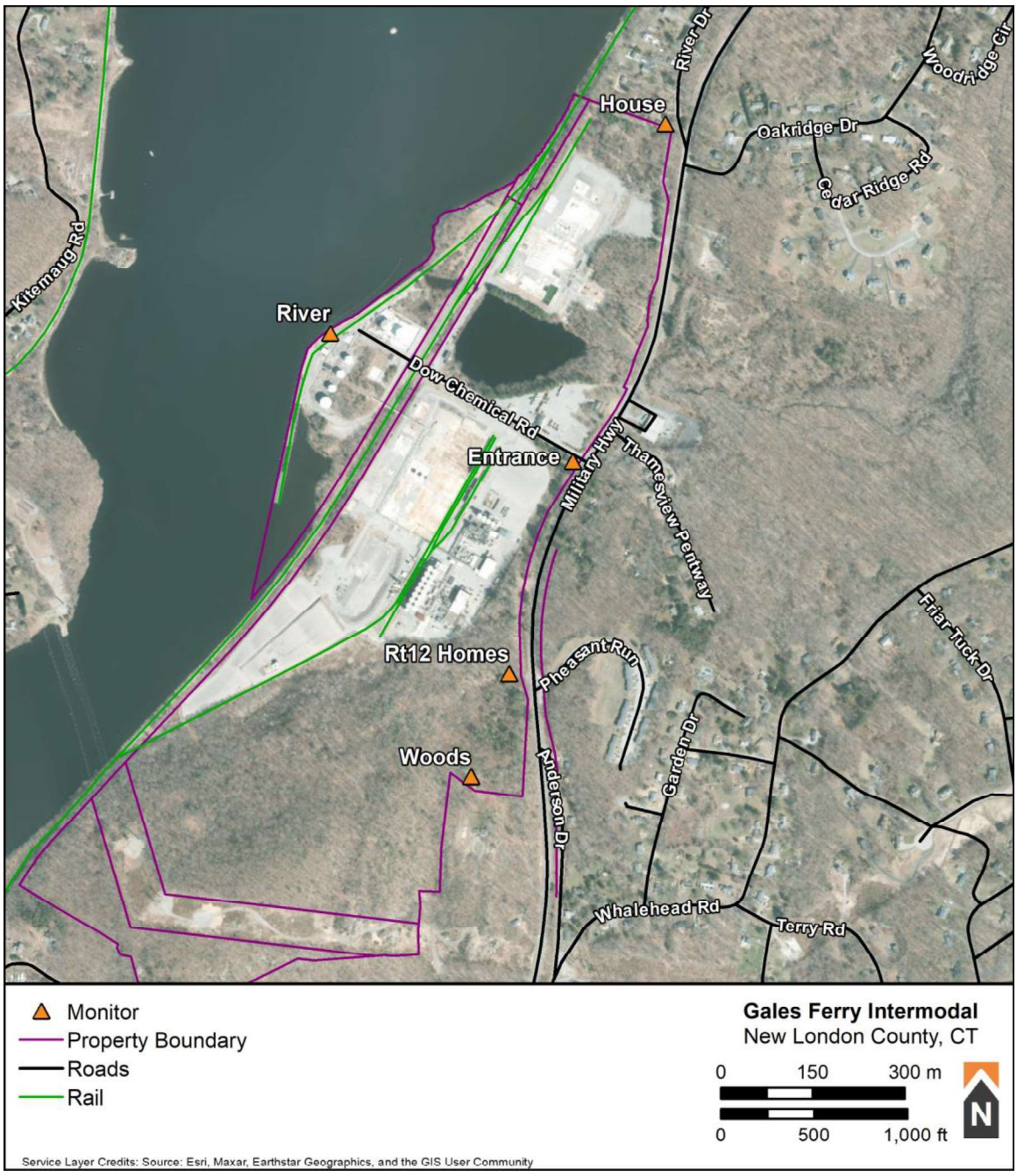

FIGURE 1: SOUND MONITORING LOCATIONS

Issue 4 – Audibility of the project operations

HMMH noted that the project could be very audible and "very intrusive for a considerable period of time." They recommended a noise limit based on the background L_{90} plus 5 dB.

No citation is given for establishing a limit based on the relative increase from an L_{90} of 5 dB. We do not know of any jurisdiction in the U.S. that uses this for a noise limit. As an example of those that use the L_{90} as the basis for a noise limit, Massachusetts uses an L_{90} plus *10* dB.

HMMH goes on to recommend the southern Woods sound monitor as a proxy for the homes across Route 12. Our response is that the Woods monitor is not representative of the sound levels at homes to the east of Route 12 because at the Woods monitor, the Route 12 sound was blocked by a hill between the highway and the monitor, whereas the homes to the east of Route 12 overlook the highway. To investigate this further, we set out a new sound monitor that was approximately 130 feet from the highway centerline, as shown in Figure 1.[1] As shown in Table 1, the L_{90} representative of the homes along Route 12 during the day is 52 dBA.

TABLE 1: OVERALL SOUND MONITORING RESULTS FOR THE 'ROUTE 12 HOMES' SOUND MONITOR

Monitor	Sound Pressure Level (dBA)											
	Overall				Day				Night			
	L_{eq}	L_{90}	L_{50}	L_{10}	L_{eq}	L_{90}	L_{50}	L_{10}	L_{eq}	L_{90}	L_{50}	L_{10}
Rt 12 Homes (new)	60	48	56	64	62	52	60	65	57	47	52	62

Adding 5 dB to 52 dBA results in a design goal of 57 dBA. However, this is above the 56 dBA modeling design goal for residential properties (as opposed to homes) discussed above. As a result, the applicant has agreed to provide mitigation such that the modeled sound level at any home and residential property in Ledyard is no greater than 56 dBA.

Additional noise mitigation

To reduce noise impacts, additional mitigation measures are being offered by the applicant. These include:

- Eliminating drilling and blasting in Phase 5.
- Adding the berm east of the excavation areas, parallel to CT-12 starting during Phase 2 rather than Phase 5 in the original plan.
- Adding an additional 12-foot high sound wall on the west side of the excavation area.

[1] The monitor was an ANSI/IEC Class 1 SVAN 979, set out from November 21 through November 30. Given the Thanksgiving holiday, the sound levels on and after Wednesday, November 27 were excluded from the above analysis. A second sound monitor was set up at the Entrance location so that a direct comparison can be made with the monitoring done in June. The overall daytime sound levels at the Entrance were within 2 dB of that measured in June.

- Adding bunkers for rock hammering in Phases 1 through 3.2.

Revised sound modeling results

With these mitigation measures in place, we updated the sound propagation modeling. The results, shown in Table 2 and Figures 2 through 8, indicate that the sound levels modeled at all residential properties and residences are at or below the requested design goal of 56 dBA. The highest modeled sound level at a residence in Ledyard is 55 dBA during Phase 2, and 52 to 54 dBA during the remaining phases.

TABLE 2: HIGHEST MODELED SOUND LEVELS (L_{1h}) FOR EACH PHASE IN dBA

Phase	Highest Residential Property Line	Highest Residence	Highest Residential Property Line (Ledyard)	Highest Residence (Ledyard)
Start	56	55	56	52
Phase 1	56	56	55	54
Phase 2	56	55	56	55
Phase 3.1	56	56	56	54
Phase 3.2	56	55	56	53
Phase 4	56	53	54	52
Phase 5	54	53	54	52

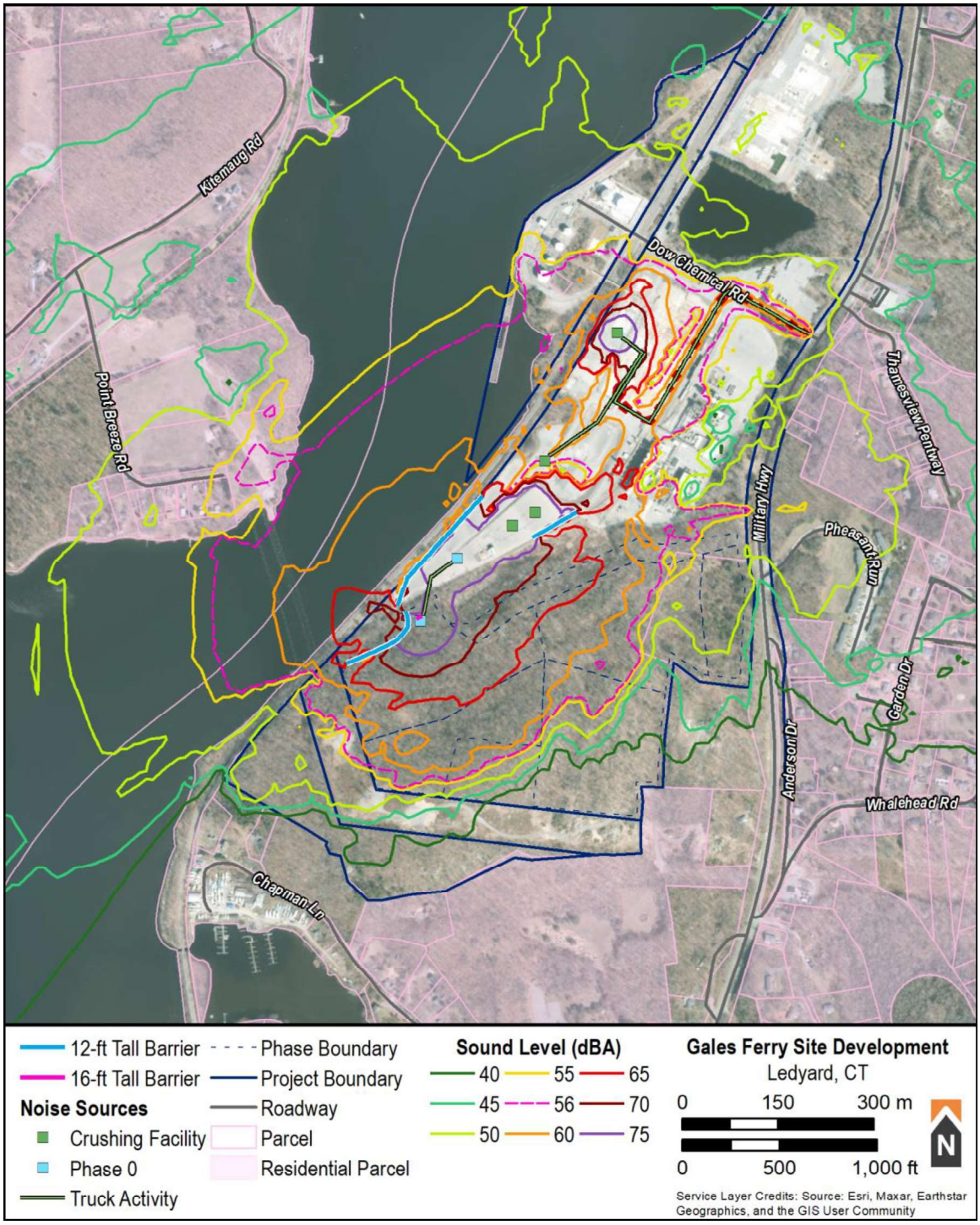

FIGURE 2: SOUND CONTOURS FOR THE BEGINNING OF EXCAVATION

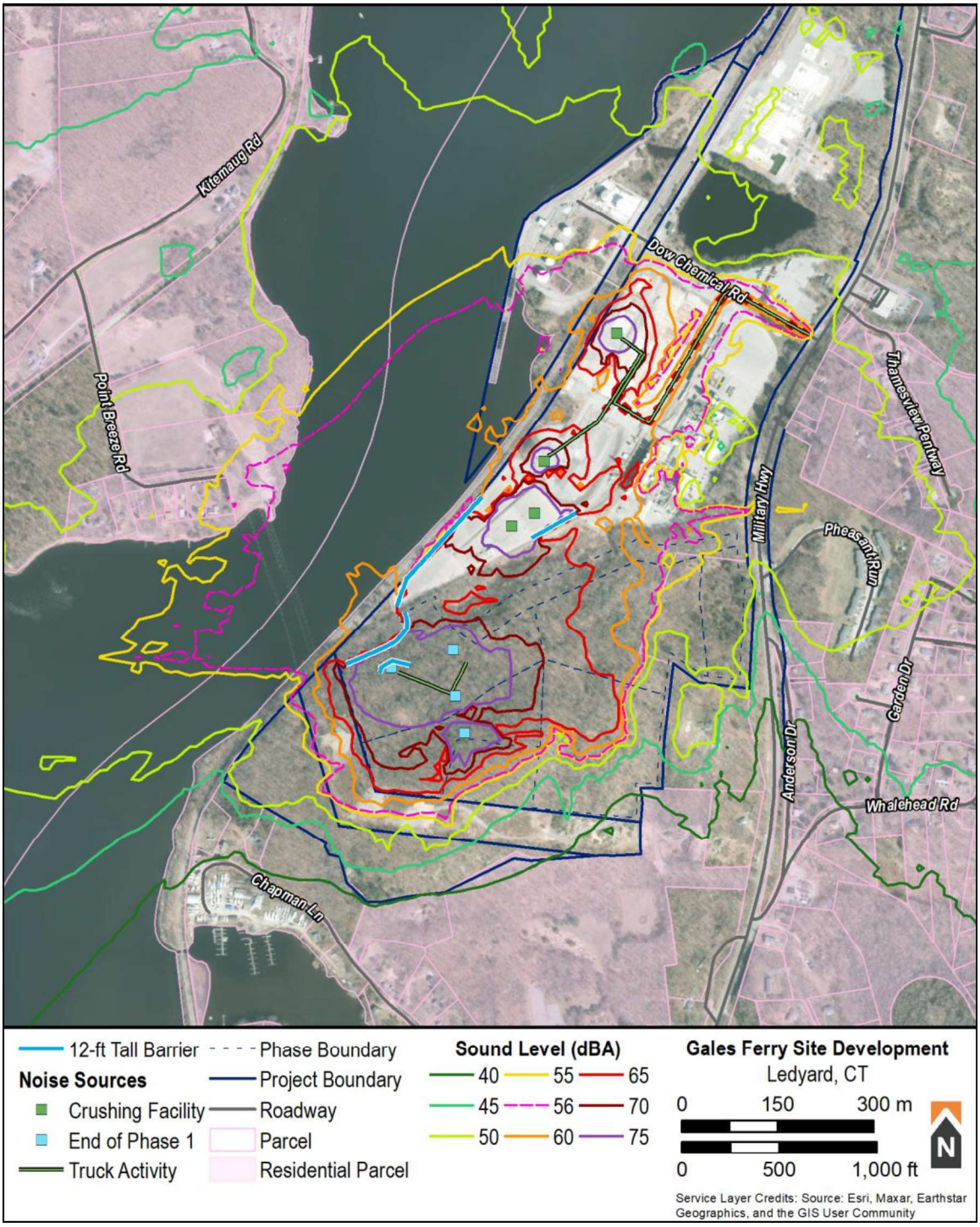

FIGURE 3: SOUND CONTOURS FOR PHASE 1

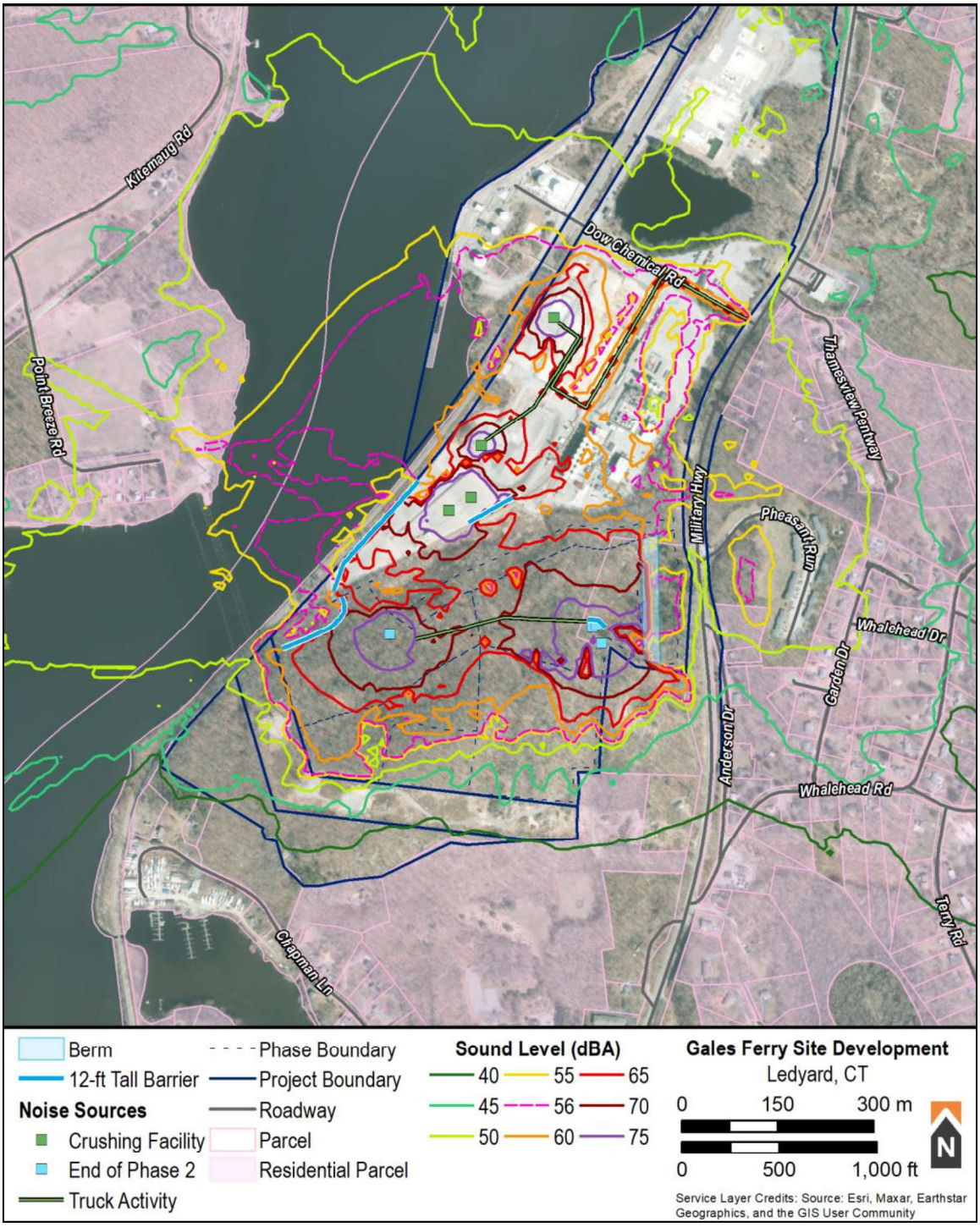

FIGURE 4: SOUND CONTOURS FOR PHASE 2

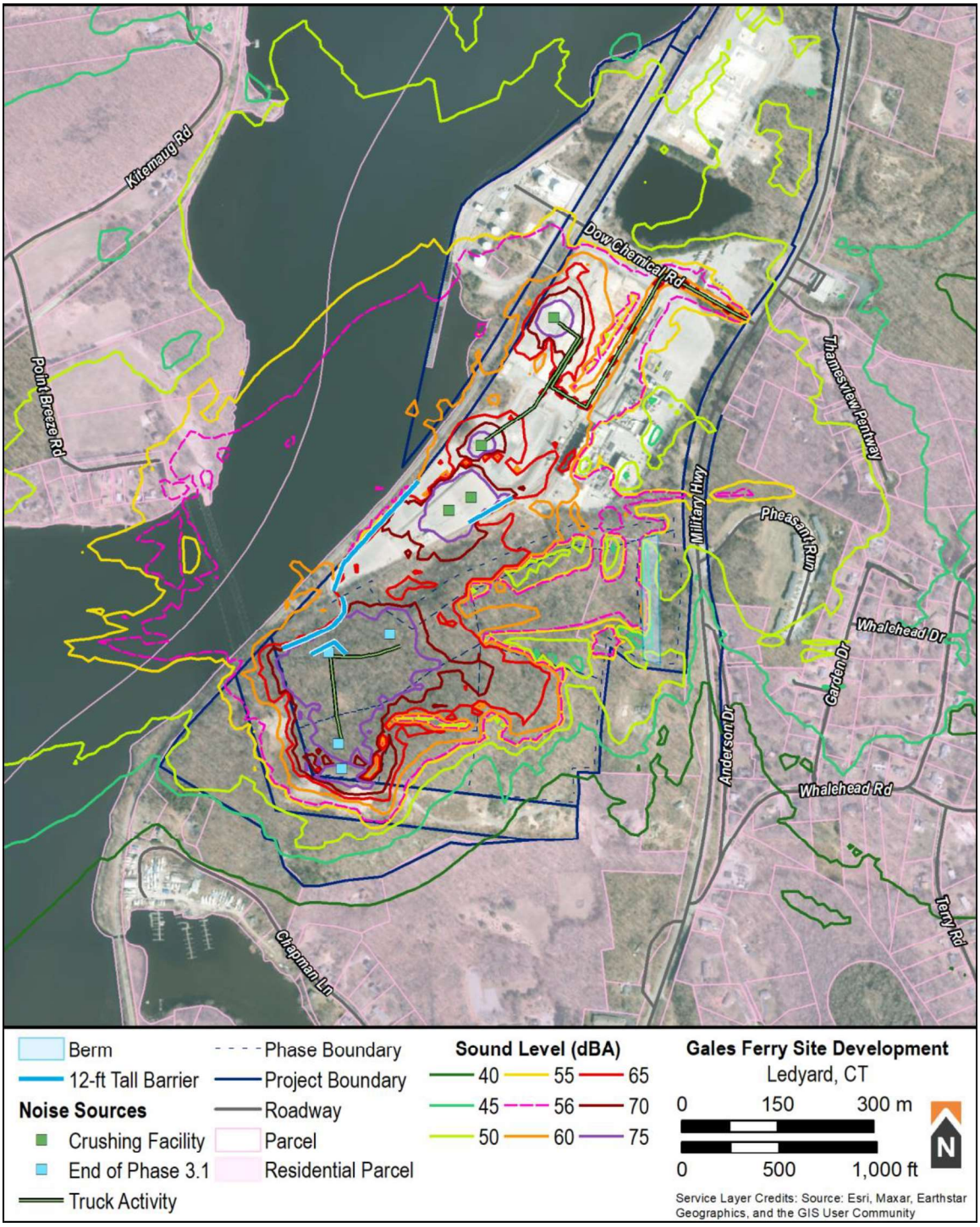

FIGURE 5: SOUND CONTOURS FOR PHASE 3.1

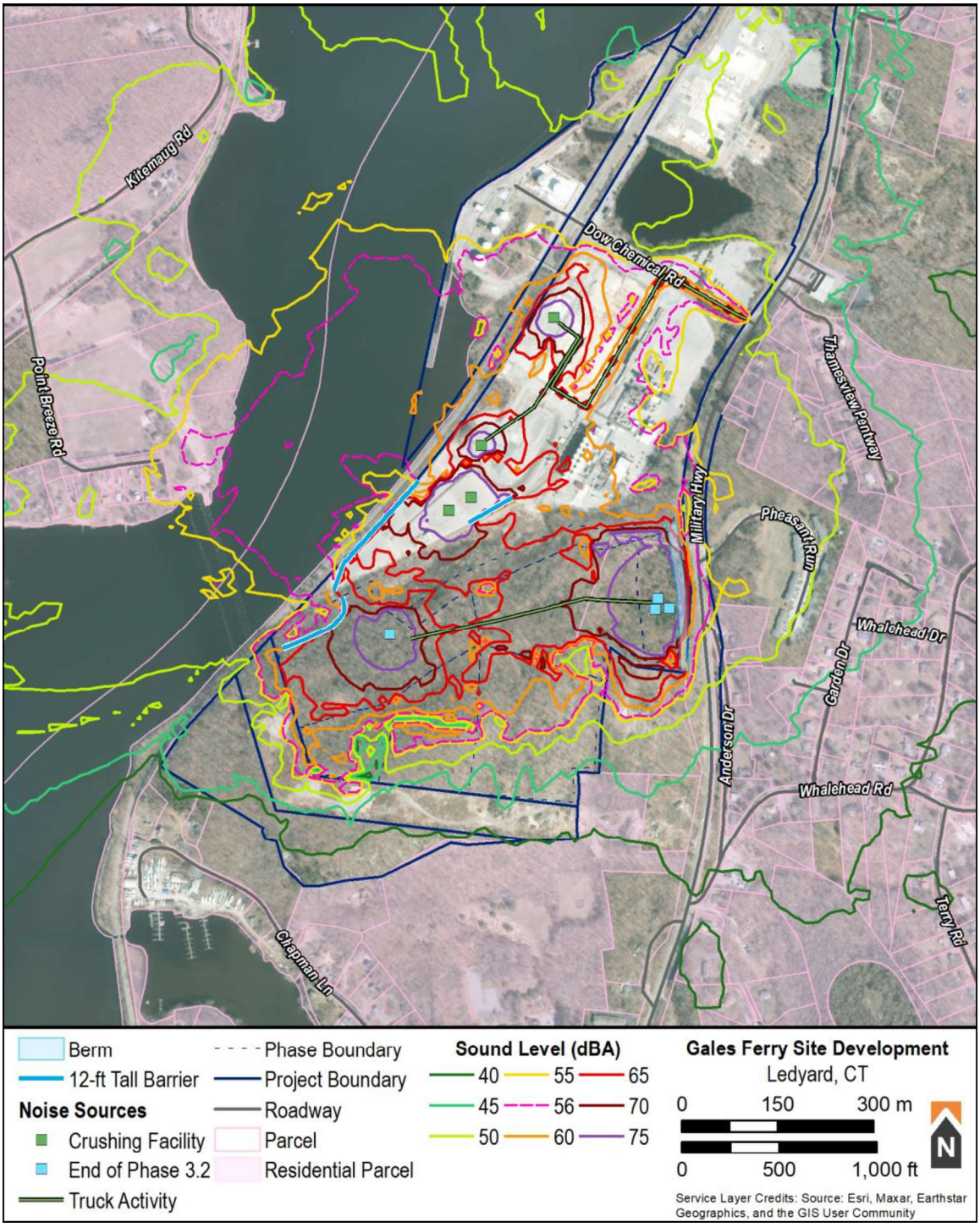

FIGURE 6: SOUND CONTOURS FOR PHASE 3.2

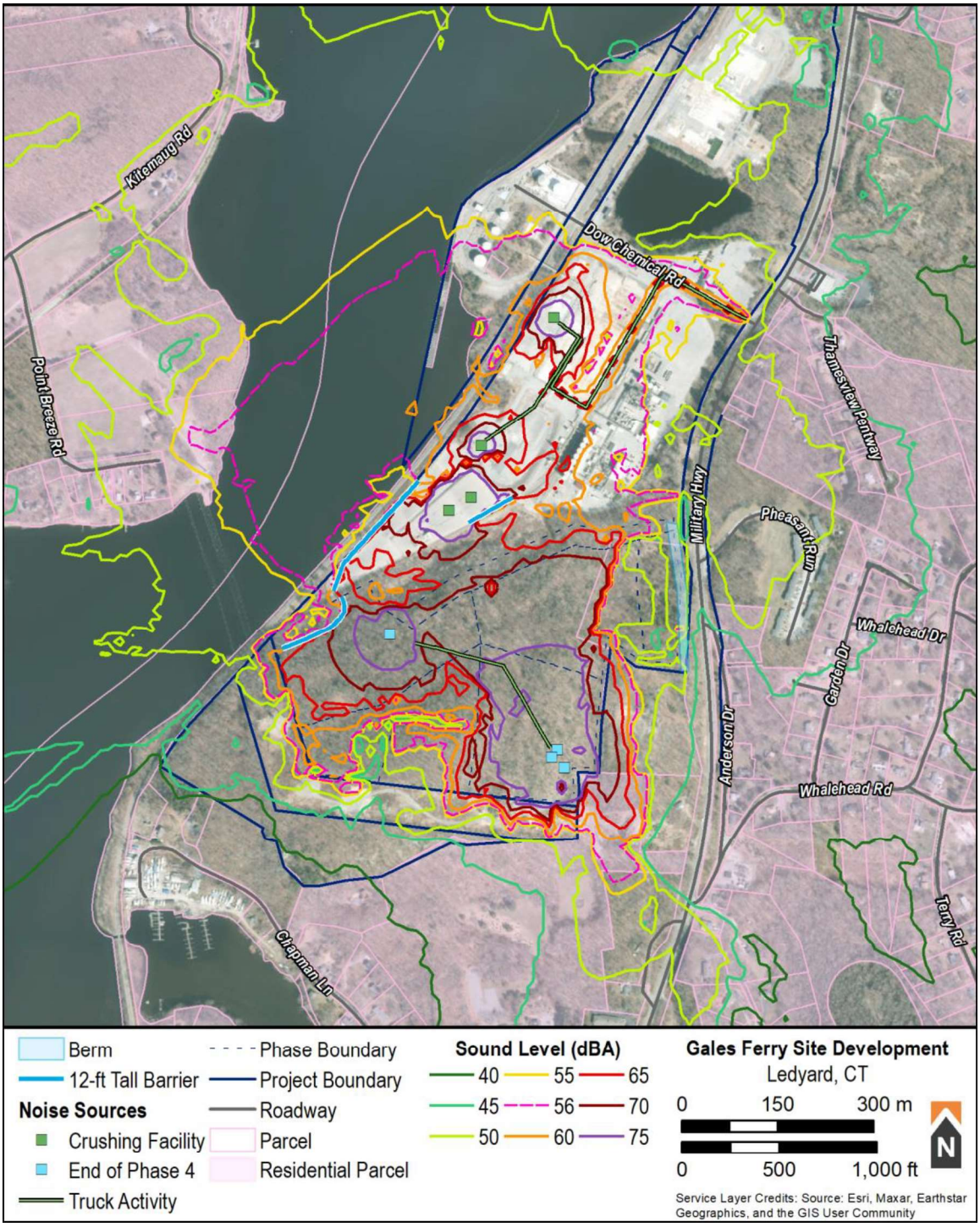

FIGURE 7: SOUND CONTOURS FOR PHASE 4

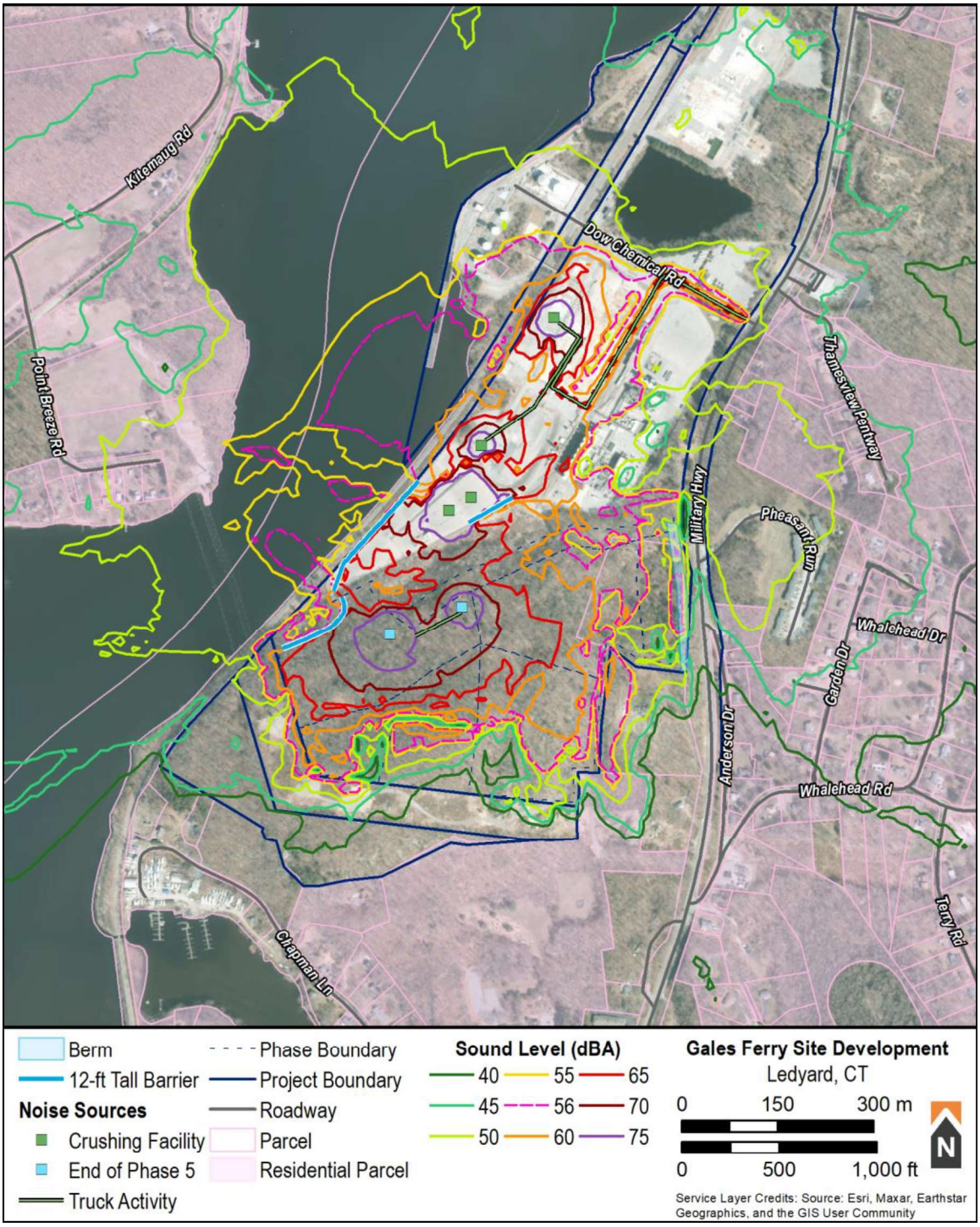

FIGURE 8: SOUND CONTOURS FOR PHASE 5