



# STATE OF CONNECTICUT

## DEPARTMENT OF TRANSPORTATION

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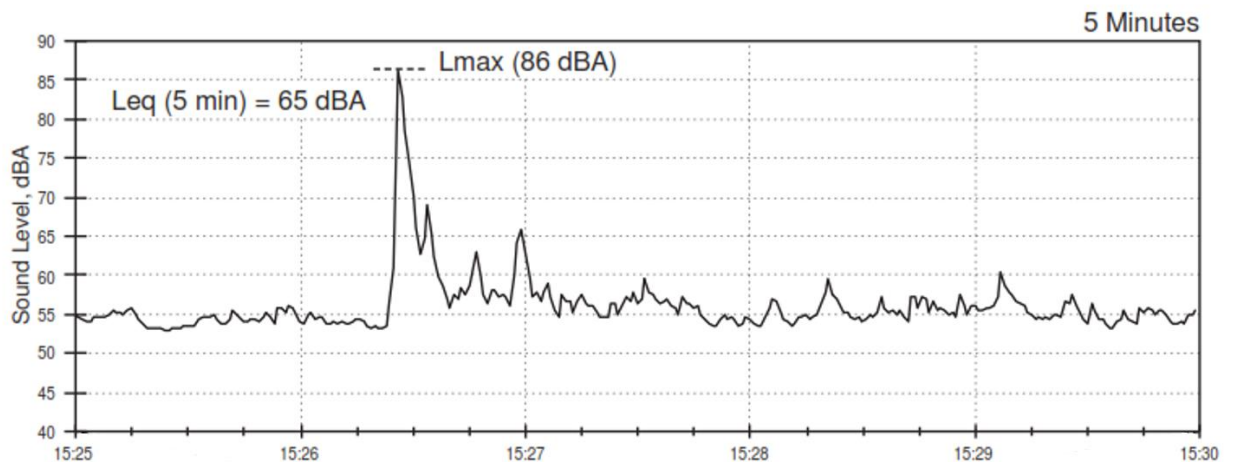
This is in response to your letter dated November 11, 2020, expressing your concerns with the Walk Bridge project surrounding Manresa Island.

### Noise

- *"The noise study predicts that the noises of the various tools used at the site would be in the range of 50-64 dBA, a roughly 10 dBA increase from current background levels. Effectively, the background noise level in neighborhoods surrounding Manresa would double."*

The noise analysis described in the October 2020 memorandum provides estimates of the maximum noise levels ( $L_{max}$ ) from construction activities following CTDOT noise specifications. Maximum noise levels represent short-term noise level peaks that would occur during construction activities, occasionally. However, these maximum noise levels are not representative of cumulative or average noise levels from construction activities. Construction operations consist of periods of inactivity and moderate activity and brief periods of highly energetic activity. The  $L_{max}$  specifications are designed to limit the maximum noise levels generated during the brief periods of high activity.

Figure 1 below shows a general example of a noise level time history (a graph of sound level vs. time) from the FTA Manual used to guide the evaluation of environmental noise levels. The noise levels during this five-minute sample primarily range from 55 dBA to 60 dBA. There is a brief instance during the sample, where noise levels reach 86 dBA, which characterizes the maximum noise level ( $L_{max}$ ). The cumulative or average noise level over this sample, as represented by the equivalent noise level ( $L_{eq}$ ), is 65 dBA. The  $L_{eq}$  is a measure of cumulative noise exposure that accounts for all noise events' magnitude and duration over a given period. It has been found to correlate well with the human response to noise.



**Figure 1. Example, sound level time history, demonstrating a comparison of the maximum noise level ( $L_{max}$ ) to the cumulative noise level ( $L_{eq}$  in this sample). Source: Federal Transit Administration, 2018**

While projected  $L_{max}$  levels at locations surrounding Manresa Island for the construction activities range from 52 dBA to 64 dBA as presented in the October 2020 memorandum, average/typical noise levels

from construction activities will be 3 to 10 decibels lower depending on the type and quantity of equipment operating at any particular period. This estimate is based on Leq construction noise calculations given in the FTA manual, along with typical usage factors for construction activities as estimated by the Roadway Construction Noise Model guidelines, our own project experience and by an outside acoustical expert firm.

In summary, the average/typical noise levels due to the work on Manresa Island are comparable to a normal office setting and conversational speech. The sound level time history chart demonstrates the comparisons. Activities that cause spikes in noise levels will be limited to 8:00am-5:00pm Mon thru Sat.

- *"Even worse, the noise study significantly underestimates the noise levels the neighborhoods would experience. The study treats the salt marsh between Manresa Island and Village Creek as dry land. For at least the hours surrounding high tide, however, those marshes are almost entirely inundated, and the sound is effectively traveling over water. Using the study's own methodology, the noise level of the Sand Blaster Air Compressor at the MAN-3 location at high tide would be around 75 dBA. "*

The analysis treats the sound propagation path between the construction activity and Village Creek (MAN-3) over the salt marsh as an overland path. This assumption in the analysis is for two reasons:

- 1) The Institute of Acoustics guidance that was incorporated in the noise predictions assumes that the enhanced propagation over bodies of water occurs when the sound path over the water is at least 700 meters (2,300 feet) in extent. The sound path over the salt marsh between the construction activity and the various homes at Village Creek ranges from 1,700 to 2,000 feet. Because these distances are less than 2,300 feet, the typical assumptions for long-distance propagation would apply.
- 2) Enhanced propagation over large water bodies occur because the large volume of water cools the air immediately above it, resulting in a "temperature inversion" that bends sound waves toward the surface of the water as sound propagates over it. The temperature inversion effect is not as strong over an inundated salt marsh as it is over open water.

As described in the October 2020 memorandum, the analysis uses very conservative assumptions. Additionally, the analysis does not include sound absorption from the atmosphere and ground effects. Both these elements can provide significant noise reduction over large distances and, as a result, actual noise levels will be lower than those projected by the analysis.

Similarly, the analysis does not account for shielding from the existing structures at the former NRG power plant. These structures would likely reduce construction noise levels at homes to the west and north of the island.

Finally, it should be noted that Norwalk's prevailing winds generally blow from west to east or from west to southeast. Therefore, the homes at Village Creek and Wilson Point are likely to be upwind from the Manresa Island construction site. Due to the resulting wind gradient, the sound waves from the construction equipment would tend to bend upward (away from the surface), thereby reducing the construction noise levels in the community.

- *"The report makes no mention of East Norwalk. Based on the study's methodology, however, Calf Pasture Beach is also likely to be bombarded with more than 70 dBA six days a week for the duration of the project. That level of noise would significantly diminish one of the great joys of summer for thousands of Norwalk families for years. "*

We understand the concern about potential noise at Calf Pasture Beach. Evaluation of residential / sensitive areas under the Manresa Island Noise Study was conducted in accordance with FTA guidelines, with Calf Pasture Beach being classified as an active recreation area. With respect to the expected noise level at Calf Pasture beach, as discussed in the response to concerns on the noise from construction activities above, maximum noise levels are not representative of continuous average noise levels from construction activities. For Calf Pasture Beach, it is expected that the typical/average noise levels will be comparable to a typical business office setting. Activities that cause maximum noise levels will be limited to 8:00am-5:00pm Mon thru Sat.

## Traffic

- *"The traffic study does not address at all the traffic on Woodward Avenue south of Meadow Street—the stretch of road that was one of the major concerns we raised in July. That stretch of road is narrow, with reduced bike lanes, reduced sidewalks, several well-used bus stops, and the only large public park in the area, drawing substantial pedestrian traffic, especially children."*

The traffic study focuses on the entire route and major intersections along the route. There is no existing traffic data for this section of Woodward Avenue. There are several industrial sites on Woodward Avenue just north of the park that generate traffic, including truck traffic. In 2012 the NRG power plant was open and employed 37 people to support their operations. There was truck traffic generated by the plant. The addition of approximately 3 trucks and 20 employee trips per day from the Walk Program's use of Manresa Island to existing traffic is less in comparison to what the power plant would have generated in 2012 and it will be a temporary condition. The traffic from the Walk Program's use of Manresa Island does not warrant improvements in this section of Woodward Avenue.

- *"The Trip Generation analysis does not appear to include the vehicular traffic for the loads of materials from the demolition of the existing bridge that we were informed in July would be barged into the Manresa site and then trucked up Woodward Ave to Lajoie's Auto & Scrap Recycling on Meadow Street."*

The number of truck loads for the demolition of the existing bridge is included in the Trip Generation analysis. The number of truck loads for demolition of the existing bridge will be added to the report, however, these additional trucks do not change the peak 3 truck trips per day used to analyze traffic intersections. Therefore, the results of the traffic intersection analysis in the report would not change.

- *"The study also treats the fact that Meadow Street, Woodward Avenue and other roads along the route to Manresa already suffer from heavy truck traffic as a reason not to worry about the impact of additional trips—rather than questioning whether it is safe or equitable to add additional pollution and accident risk to already heavily impacted neighborhoods."*

The haul routes were chosen to maximize use of main roads and minimize impacts to local neighborhoods. The Program is using these haul routes only when necessary and is using a conservative estimate.

## Environmental

- *"This restatement of the Department's position appears to involve no additional analysis and as such does not significantly address many of the concerns raised by the neighborhoods in July. What, for instance, happens to the lead paint dust and other contaminants caught by the six-inch gravel layer if Manresa is entirely covered with flood waters as it was during Hurricane Sandy? Or if the site is pummeled by hurricane force winds? Does that lead dust end up in our water and backyards?"*

Dismantling portions of the existing Walk Bridge spans and high towers are not currently planned to be performed at Manresa Island due to the revised methodology for the demolition and removal of the existing Walk Bridge.

If there is work that involves the cutting or dismantling of existing structural steel, the Department's standard operating procedures will be followed. Standard operating procedures include conducting the work on poly sheeting to collect the paint chips. These chips will be collected, containerized and shipped off-site for recycling or disposal. The project will monitor storm events and will have contingency plans to remove such materials from the site before a storm.

## **Alternate Sites**

- *"Why were no shipyards and/or other industrial sites on the Connecticut coastline considered?"*

The Program has investigated using various commercial marine sites in Connecticut ports. Sites included Bridgeport Boatworks in Bridgeport, Mohawk Northeast Thames Yard in Groton, New London State Pier in New London, and Bloom Industries Oyster Facility in New Haven. The Bridgeport and New London sites are not available due to use of these sites for windfarm projects. The Groton site is not available due to the future Gold Star Bridge construction. The channel is too narrow at the New Haven site to accommodate necessary construction activity.

- *"The report points to the need to dock barges bringing spans constructed elsewhere in appropriate harbors in Bridgeport or New Haven. But it does not answer the question of why the spans could not be constructed on barges parked there in the first instance."*

Constructing the lift spans on barges would create triple handling of material and the shipping lane conflicts would result in prohibitive costs associated with this method.