

January 17, 2022

Attorney Mary Mintel Miller  
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24 Church Street  
9<sup>th</sup> Floor  
New Haven, CT 06510

SUBJECT: Acoustic Review  
Frito-Lay Expansion  
Killingly, CT

Dear Attorney Miller,

At your request I have reviewed two acoustic reports<sup>1</sup> prepared by Brooks Acoustics Corporation (BAC), and video testimony<sup>2</sup> presented by Bennett M Brooks regarding sound emissions and sound control of various components at the Frito-Lay facility in Killingly, Connecticut. The following letter presents my opinion and recommendations for further acoustic evaluations with regards to the proposed expansion of the facility.

### **Current Facility Compliance with Acoustic Regulations**

In both reports prepared by BAC, it is concluded or implied that current facility sound emissions comply with the Regulations of Connecticut State Agencies (RCSA 22.a-69) sound level limits. For the following reasons, it is my opinion that there is insufficient data presented in these reports to reach this conclusion:

- Measurements appear to be performed at one west property line location. Given the size of the plant, and the location of many residential properties west of the plant, several measurement locations should be established to confirm compliance. I recommend a minimum of three residential measurement locations on Upper Maple Street spanning between North Shore Road and 1757 Upper Maple Street.
- The (RSCA) limit for sound impacting a residential property that is produced by an industrial source is 51 dBA during nighttime hours (10:00 p.m.- 7:00 a.m.). However, this limit is reduced to 46 dBA if the measured sound possesses one or more audible discrete tones (Sec. 22a-69-3.3). Evidence of prominent discrete tones is defined under Sec. 22a-69-1.2 (r) and is based on one-third octave band sound level measurements. Given that measured sound levels presented in these reports may only marginally meet the 51 dBA limit, measurement and data presented must also confirm that there are no prominent discrete tones.

<sup>1</sup> "Frito-Lay Killingly Plant – Acoustical Mitigation Project – Field Sound Test Results", March 8, 2021 and "Frito-Lay Killingly Plant – Acoustical Mitigation Project – Field test observations", December 16, 2021

<sup>2</sup> Town of Killingly Planning and Zoning Commission Regular Meeting December 20, 2021

Given the history with noise complaints in this area, it is my opinion that prior to any new construction at the Frito-Lay facility, the applicant should be required to submit a fully documented, peer reviewable report that demonstrates full compliance of facility sound emissions with all applicable noise regulations. Prior to conducting the compliance survey, the applicant should provide the Town with a sound measurement protocol for their review and acceptance.

### **Proposed Expansion Acoustic Impact Evaluation**

The proposed expansion project will include adding many new environmental sound sources. Each of these will increase the acoustic impact of the Frito-Lay facility. Given that current impacts are at or very near the regulated limits, significant mitigation of new noise sources may be required. To assure that future sound impacts do not create a noise nuisance, or exceed the limits of applicable noise regulations, the applicant should submit a fully documented, peer reviewable report that presents acoustic evaluation of the project. The evaluation should include the following:

- *Acoustic Design Goals*  
The acoustic design goals should state Project related sound level limits at various residential receptor properties surrounding the site. These limits must account for the acoustic impacts produced by the current facility.
- *Acoustic Modeling of the Facility*  
An acoustic model of the facility should be developed to calculate Project related sound impacts at surrounding properties. Modeling of Project sound sources should be based the sound propagation algorithms of ISO 9613-1 and ISO 9613-2. In calculating sound levels at receptor locations, the acoustic model should account for attenuation associated with propagation distance, shielding by intervening structures and topography, and absorption of sound by the atmosphere and porous surfaces. A report summarizing the modeling results should include:
  - A site plan that identifies the location of all Project related sound sources.
  - A listing of all new sound sources and their octave band sound power levels and any directivity corrections.
  - A listing of any noise mitigation included in the design.
- *Receptor Property Sound Impact Evaluation*  
The acoustic model should be used to evaluate Project related sound impacts at all acoustically sensitive receptor properties near the Project. The results of the modeling should demonstrate that the Project design can meet the acoustic design goals and will fully comply with all applicable noise regulations.

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### **Post-Construction Testing**

Following construction, the applicant should submit a fully documented, peer reviewable report that demonstrates the sound produced by the entire Frito-Lay facility is in full compliance with all applicable noise regulations. Sound measurements should be performed with the facility operating at full capacity and measurements should be performed at a minimum of three residential properties. Prior to conducting the compliance survey, the applicant should provide the Town with a sound measurement protocol for their review and acceptance.

Sincerely,  
CAVANAUGH TOCCI



Douglas H. Bell  
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