

Letter from Dr. Christine Rioux, an environmental scientist and a concerned citizen, to the Wakefield Fire Department.

From: Christine Rioux

Date: Thu, Sep 14, 2023 at 9:08 AM

Subject: Blasting concerns - Northeast Metro Tech Project- request for community involvement and blasting safety forum

To: [Wakefield Fire Department, Deputy Chief Purcell]<tpurcell@wakefield.ma.us>

Cc: [Wakefield Fire Department Captain Shinnery]<dshinney@wakefield.ma.us>

September 14, 2023

Dear Deputy Chief Purcell,

I am writing to you about my concerns with the planned blasting operation by NEMT currently under your review. After reviewing the blasting plan (MD Drilling & Blasting, Inc. May 31, 2023) I previously wrote about some of my concerns to Captain Shinney and attach those here for your convenience.

I understand from my friend Bob Brooks, an abutter to the NEMT site, that a meeting will soon take place to discuss a safety plan during blasting. We ask that two community members, Mr. Brooks, and I, be present at the meeting to listen and ask questions, and that our concerns be taken seriously and addressed. Following this meeting, we ask that a public forum be held to allow the broader community to ask their questions.

I am a Wakefield resident with a long career in public health and environmental engineering who cares deeply about health, safety, and the environment. I and others have spent countless hours reviewing many of the technical documents submitted to the Town Engineering Department and Conservation Commission by the NEMT project, attending public meetings and submitting comments on multiple occasions. I believe both Mr. Brooks and I have important perspectives and knowledge that should be factored into these discussions.

True community engagement has been lacking on this project. Rather than recognizing us as important stakeholders and finding ways to engage us in the design or location of the new school, recognizing our expertise and valuing our comments and ideas as citizens who live here and pay taxes, we have been ignored and demeaned publicly for our efforts by some of the highest officials on this project. I know you cannot rectify all of that but a meeting among multiple town officials and departments about one of the largest projects to come to Wakefield needs to be open to be inclusive of residents' perspectives. We have much to contribute to this discussion.

I also request you invite the town's public health director, Anthony Chui, to be present at the safety meeting given the specific health impacts and disruption associated with a prolonged blasting operation in very close proximity to youth at the schools and children at the day care center.

Background.

On December 15, 2022, I wrote the following to Mr. Renault, Wakefield Town Engineer:

“I am very concerned that no one with time and expertise is reviewing the Rock Engineering Report and Geotechnical Report included as Appendix J as part of the Stormwater Report for the Northeast Metro Tech Vocational School Project. Several concerning statements are included regarding rockfall and ice fall hazards, block toppling along the proposed slope, an apparent east-west fault line, and an excessively steep slope face angle.”

On March 15, 2023, the Town Engineer wrote the following to Frank J. Luciani, Jr., Town of Wakefield Conservation Commission Chair:

“The commission may want to consider hiring a geotechnical peer review consultant to review the site’s proposed blasting plan and the soil conditions assumed in the geotechnical report.”

On March 30, 2023, Here is the entirety of the NEMT response to this comment:

“The blasting plan will be permitted through the Town of Wakefield Fire Department and will be applied for and granted to the firm (to be selected) doing the blasting. A copy of the approved Blasting Permit (including the plan) can be provided to the Conservation Commission when approved.”

To my knowledge, no expert or peer reviewer was hired to review the blasting plan and now the oversight of this enormously complex blasting operation has fallen to you. In no way do I underestimate your professional skills or those of your department, however I think it is fair to say that several important issues need to be addressed.

The Geotechnical report and the Rock Engineering report discuss the site conditions that could impact risks during blasting. I hope you have been provided a copy of these reports.

Here are a few concerning points:

Regarding potential gas travel (p. 10)

“Rock Blasting & Excavation Considerations: As noted above, the bedrock at the site is expected to be very hard and brittle. The blaster selected for the project will need to consider the use less (rather than more) explosives during presplit blast design to avoid excessive gas travel and backbreak that could create a shallower slope. Use of Perimeter Control Methods is recommended, and in particular, Precision Pre-splitting should be considered for final slope (neat) line development. This may include reducing the spacing of presplit holes and reducing the charge weights to avoid backbreak and excessive gas travel.”

Regarding mapped fault feature (p. 11)

“A mapped fault feature located within the limits of the overall project site, which, if exposed within the limits of the proposed cut during construction (or blasting), may require additional drainage or slope stabilization elements.”

And most importantly - Regarding Public Notification (p. 36)

“The human perception threshold to vibration is very low, i.e., people are far more sensitive to vibrations than are the structures they occupy. Various studies have indicated that the sound effects are noticeable at PPV values of 0.02 ips and complaints and claims of damage are likely at PPV values of 0.2 to 0.3 ips. These vibration intensities are well below the intensities that would cause structural damage to buildings. For these reasons, we recommend that the owner implement a proactive program of public notification and education of neighbors on the physical characteristics of blasting effects before the start of blasting.”

There is no indication in the blasting plan that these were considered.

The NEMT Early Blasting Plan lists ammonium nitrate as the primary component (60-90%) of the explosives planned for blasting at the site, with warnings on several safety data sheets stating, **“Avoid release to the environment”; “This material is hazardous to the aquatic environment”; “Keep out of sewers and waterways”; and “Harmful to aquatic life with long lasting effects.”** Because of the extremely hard, brittle and extensively fractured bedrock, and abundant groundwater, the probability is high that substances injected into blasting boreholes will intersect one of the many fracture networks and be transported from the blasting area. [This widely cited paper](#) about numerous blasting sites in New Hampshire documents the high likelihood of nitrate contamination of runoff and groundwater.

In summary, my requests to you are:

- (1) Please advocate for the inclusion of two community representatives at the meeting to discuss the safety plan;
- (2) Invite Public Health Director Anthony Chui to this meeting for his important perspective; and
- (3) Please hold a community forum about the blasting operation so that residents, teachers, parents, people who visit Breakheart, can ask their questions and understand what will be done to keep them safe and healthy during this most challenging operation.

Thank you for your service to Wakefield.

Sincerely,
Christine Rioux, MS, PhD
Environmental Health Scientist
Wakefield Resident

September 8, 2023

Dear Chief Shinney,

My friend Bob Brooks shared the NEMT blasting plan with me that you had shared with him earlier today. I am also a resident of Wakefield and worked in the public health and environmental engineering field for many years.

I am very concerned that important site-specific information is missing from the NEMT blasting plan and urge you to please postpone your approval of the permit until such details can be obtained and information shared with the community. Other communities, such as [Waltham](#), held community forums before blasting operations were allowed to proceed. Have you discussed with other Town Officials a Town communication plan and including information on the Town Website?

Given the range of concerned parties, from nearby residents, teachers, students, parents (from all of the communities sending students to the Voke), as well as the many visitors to Breakheart, wouldn't it be prudent to give the community a chance to ask questions in a setting with trusted parties like yourself?

Important information missing from the plan:

1. Where are the specific monitoring locations? There is no figure showing this.
2. What specific protections for noise and vibration have been put in place around the vocational high school school, Wakefield high school and the early childcare location for children and youth?
3. What is the expected duration (in weeks or months) of the blasting operation?
4. Have the teachers, students, and parents of the vocational school and Wakefield high school been informed of the hourly duration (hours from 8:00 am to 4:00 PM) and intensity of the blasting operation?
5. Have the parents of children in the early childcare program been informed?
6. Will accommodations be made for students who cannot tolerate the noise and vibration impacts?
7. Will student outdoor activities be curtailed during blasting operations?

These are just a few of the questions. Earlier this year, the NEMT project shared the attached document that is very short on details. Has this plan been updated? The increased number of trucks moving around the school and through Wakefield to handle the blasted rock is also a safety concern.

Many of us in Town are very concerned about the extended blasting operation NEMT has planned. As the Town's Chief Safety Officer, please consider how you can coordinate a plan that informs and prepares citizens, young and old, of the impending operation.

Sincere thanks for your service to Wakefield.

Christine Rioux