

Construction Project Engineer's thoughts on the NEMT Build

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Advocate News

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My name is David Alexander and I am a retired Construction Project Engineer. I have many concerns regarding the clearing and blasting of the volcanic bedrock and ledge on the forested hilltop for the new Northeast Metro Tech School Project. I hope to share the concerns with Taxpayers of the NEMT District and especially with people in the nearby areas of Saugus and Wakefield. It seems an alternate build site must exist at 100 Hemlock Rd that requires less site prep and I hope that is pursued as a better, viable, more cost-effective option for these and other reasons:

1. The cost estimate for the forested hilltop is just that, an estimate. Starting at \$41+Million. Care to guess which is more likely with the current site choice?

A – the project is completed for less than the estimated amount

B – there are complications which incur additional expenses.

Having been around the construction industry in one capacity or another for some 50+ years, my experience says put your money down on B.

2. States regulations on blasting vary. Massachusetts is one of the most regulated and according to Massachusetts 527 CMR 13:00 any structures within 250 feet of a blast hole and not under the control of the project are to be offered a pre-blast survey. Now I don't have an exact map handy, and I'm no expert but ask could this potentially negatively affect minimally around 100 houses that abut the project area?
3. The area to be blasted is ledge. Nobody knows how deep it is or how extensive. This isn't like a big rock sitting in sand that can get blown up with no collateral damage. Blasting contractors are required to use blast pads to prevent any material from flying away from the blast zone. But what happens above ground is not nearly as important as what happens underground. Shock waves from blasting can travel long distances through solid rock potentially impacting abutting houses.
4. The blasting area is very close to massive high voltage electrical transmission towers which are not necessarily designed in this part of the country to be earthquake proof. The shock waves from blasting are roughly equivalent to an earthquake. Safe distances for blasting near electrical transmission towers are not firmly established anywhere that I could find.

5. The proposed blasting area is not far from a neighborhood of private homes. It is unknown to me whether any of these homes have underground natural gas service. The only testing I have seen regarding the safe distance for blasting near underground gas mains were conducted with brand new pieces of piping. The potential damage from blasting operations to older, possibly corroded natural gas piping is unknown.
6. It has been reported that the impact of blasting in this type of rock formation can often release water and gases trapped beneath the surface resulting in an Artesian condition. What is the plan for removing this water from the blast site?
7. Lastly what is the impact of water runoff from the blasting site? What type of explosive material is planned to be used on this project? Some blasting materials are banned to be used near any public waterway. The Saugus River is probably 50 feet from the existing school building. I don't know that the Saugus River is used anywhere along it's way to the Atlantic Ocean. What I do know is that the marshy, ocean end of this waterway supports a tremendous amount of bird species including Bald Eagles.

See: https://www.sherbornma.org/sites/g/files/vyh1if1201/f/uploads/boh_-_bedrock_disruption.pdf <https://www.mass.gov/doc/potential-environmental-contamination-from-the-use-of-perchlorate-containing-explosive-products/download>

Each of these issues requires further investigation, discussion, and input from the community. This is not meant to be an all inclusive list of everything that is wrong with this proposed project. This is just my opinion but each of these issues has the potential to increase the cost.

Thank you,

David Alexander

Construction Project Engineer, retired