October 22, 2019

Fireworks RAP Comments
c/o Tetra Tech, Inc.
160 Federal Street 3rd Floor
Boston MA 02110

Via email: FireworksRAPcomments@tetratech.com

RE: Fireworks I Site Hanover MA Draft Phase III Remedial Action Plan

To Whom It May Concern:

The North and South Rivers Watershed Association (NSRWA) and the undersigned would like to offer the following comments regarding the Draft Phase III Remedial Action Plan (RAP) dated July 17, 2019 for the clean-up of the Former Fireworks Facility in Hanover MA.

The RAP identifies that the contamination at the site primarily consists of mercury and lead in sediments as well as significant munitions and explosives of concern (MEC) and material potentially presenting an explosive hazard (MPPEH). The RAP does not address the removal of the MEC and MPPEH in the upland areas because the the work to remove these contaminants is ongoing and will be completed independent of a final site-wide remedy. The RAP focuses on remedies for removing the remaining lead and mercury and co-located contaminants both in upland soils and sediments within the waterways and ponds between Forge dam and Factory Pond dam and the remaining MEC/MPPEH in Factory Pond. Three alternatives remedial actions were identified and compared.

1) Temporary Solution (minimum remedial activities)
2) Permanent Solution with Conditions (Clean up to achieve project-specific remediation objectives)
3) Permanent Solution with Conditions (Clean-up to achieve or approach background levels)

Alternative 1 was not evaluated because other feasible alternatives exist. Alternatives 2 and 3 both meet the remedial objectives with Alternative 3 being more protective of terrestrial species relative to the soil. The recommendation from the report is Alternative 2 as it meets all of the proposed remedial objectives at the lowest cost and with the least adverse impact to the Site.

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We disagree that Alternative 2 is the best choice and would prefer to see Alternative 3 chosen as it is more protective of the ecology of the area. We believe choosing this more protective alternative, while slightly more costly, will not cause more disturbance and or require more construction mobilization. The cost differences are approximately $5 million (Table 1), which is approximately 5% of the total estimated cost of Alternative 2 and well within the range of costs estimated (cost estimates provide a $40 million range). Our preferred choice therefore is Alternative 3 – to remove contamination to background levels - because it removes more of the contamination from the site, is more protective of terrestrial species, does not appear to create more disturbance than Alternative 2 nor is significantly different in cost when compared to the overall cost of the project.

Table 1. Cost Estimates from Draft RAP III 2019

Alternative 2	$92,200,000	Range ($78,400,000-$115,300,000)
Alternative 3	$97,100,000	Range ($82,500,000-$121,300,000)

Factory Pond Dam Potentially Undersized and Maintenance History

The NSRWA is concerned about the long term issues surrounding the Factory Pond dam, its structural integrity and long term viability. The Draft RAP III notes that the structural integrity of the dam is "unknown" and there may need to be a buffer or work set back distance to the dam (Page 4 -13 of the Draft RAP III 2019).

If contamination is left close to the dam because of the need to create a work set back distance, that may preclude any potential future dam removal at this site and/or would leave the downstream river vulnerable to contamination if the dam should fail. The clean-up of the sediments in Factory Pond should allow for future consideration of removing this dam and reconnecting and restoring this river habitat. The towns of Hanover and Hanson, owners of the dam, should not be responsible for maintaining this dam in perpetuity because there are contaminated sediments within the buffer to the dam.

In 2013 the state Office of Dam Safety issued a certificate of noncompliance to the towns of Hanover and Hanson for the Factory Pond dam due to structural defects and lack of maintenance. In 2011 an engineering report on the condition of the dam cited that there was no hydrologic/hydraulic analysis available to determine if this dam's spillway is large enough to allow larger storm events to pass without breaching. While there has been a dam at this site since 1712, the primary spillway was reportedly reconstructed circa 1942-1943. At the time of the 2011 engineering report the dam was

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rated in “Poor” condition and is classified as a High Hazard dam. In 2014, the state provided a $150,000 grant for repairs at the Factory Pond dam, improving its condition for now.

The size of the spillway is relevant because it is our experience that most dams built in the same era would not meet today’s flood control engineering design standards. To further exacerbate this, our current design standards may not be protective of future climate change predictions of increased intense precipitation events. The alternatives should examine the design flows that this dam can pass and a remedy proposed for clean-up that is supportive of future dam removal. If the dam is to stay in place, there should be some assurance it won’t fail with larger storm events predicted in the future. Even if citizens today are not supportive of dam removal now, this option should not be taken away from future generations, nor should the towns be burdened in perpetuity with maintaining this dam if they no longer wish to or can’t afford to because the contamination was not removed to allow for restoration of the river corridor.

In conclusion, the NSRWA prefers to see Alternative 3 chosen as it is more protective of the environment, does not cost significantly more and will not be substantively more disturbing to the environment compared to Alternative 2 to implement. The NSRWA requests that DEP and the Potential Responsible Parties evaluate the structural integrity of Factory dam and its flood control capacity. The remedy chosen should allow for future removal of the dam and protect in perpetuity the rest of the river downstream from the potential for this dam to fail.

Sincerely,

Samantha Woods
Executive Director

Cc: Senator Patrick O’Connor
Representative David DeCoste
Representative Josh Cutler
Hanover Selectmen
Hanson Selectmen
Hanover Conservation Commission
Hanson Conservation Commission
Senator Ed Markey
Senator Elizabeth Warren

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