



EA Engineering, Science, and Technology, Inc.

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7 July 2009

Mr. Timothy Fleury
RI Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, RI 02908

RE: Revised Remedial Alternatives Analysis
Lincoln Lace & Braid Remediation Project
Ponagansett Avenue
Providence, Rhode Island
EA Project No. 61891.05

Dear Mr. Fleury:

EA Engineering, Science, and Technology, Inc. (EA) is pleased to submit this revised remedial alternatives analysis on behalf of the City of Providence Parks Department to present the proposed remedial alternatives at the above-referenced site and to further expand upon the preferred remedial alternative. Previous investigations at the site had determined that several contaminants, including polycyclic aromatic hydrocarbons (PAHs) and metals, were present within site soils above the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria (RDEC). These contaminants are typical of historic mill operations in an urban setting.

The Site is located along the Woonasquatucket River, adjacent to Merino Park. The Rhode Island Department of Transportation (RIDOT) Engineer has completed 30% design plans for the construction of the Woonasquatucket River Bike Path, which will run through the site. The site is expected to be developed as open space along the bikepath. Due to the sensitivity of the river and the sluiceway at the site, the preferred alternative includes the establishment of buffer areas to improve the quality of the wetland resources and wildlife habitat. EA presents the following three remedial alternatives for comparison and makes a recommendation for the preferred remedial alternative.

Option 1 – No Remedial Action

In this remedial alternative, no significant remedial activities would be conducted at the site. The existing debris would be removed, and the area in the vicinity of the future bikepath would be cleared in accordance with the RIDOT bike path design specifications.

This remedial option does not adequately provide protection from potential exposure to contaminated soils for future site visitors, nor does it prevent future migration of contaminated soils into the adjacent surface water bodies. Furthermore, the sluiceway, inundated with iron flocculation, will continue to detract from the potentially aesthetically appealing area. Therefore, this is not the preferred remedial alternative for the site.



Option 2 – Excavation and Offsite Disposal

In this option, impacted soils within the site would be excavated and transported offsite for disposal at a licensed waste facility. Excavation of soils above the applicable RIDEM RDEC would require the collection of a significant number of surface soil samples to ensure regulatory compliance, as there is no apparent distribution pattern of the non-compliant metal and PAH concentrations. Therefore, it would be difficult to ensure that all contaminated material had been removed. This type of sporadic removal action would cause a significant amount of soil handling and stockpiling, which would increase the likelihood of impacts from contaminated soils to adjacent sensitive environments and residents. Soil disposal would also add significant expense to the overall project budget and would be an inefficient method to address surface soil contamination. Therefore, this is not the preferred remedial alternative.

Option 3 – Engineered Cap Construction, Wetland Restoration, and Implementation of an Environmental Land Use Restriction

The preferred alternative would include the construction of an engineered barrier (cap) throughout the formerly developed portions of the site. This cap would have several configurations but would mainly consist of 1 foot of certified clean fill over a geotextile fabric throughout the majority of the site. An engineered cap constructed in this manner would effectively isolate future site visitors from the impacted soil.

In the wetland buffer areas along the sluiceway and river, the cap would consist of 1 ft of certified clean material without the geotextile material, to allow for the permanent establishment of wetland vegetation. Wetland vegetation would be densely planted in a buffer area between the sluiceway and the proposed landfill cap. This dense vegetation would serve a dual purpose to prevent easy access for the public into the sluiceway and to limit visual impacts some of the iron staining, as discussed with RIDEM on 21 August 2008. RIDEM is aware of the public perception problem that is likely to result in regard to leaving this iron staining in place, and suggested that a public education effort via posted signs and/or brochures be developed. The education effort should provide the public with information that this iron staining does not pose a public health threat and that this particular staining is a naturally occurring phenomenon.

In areas within the 100 year flood plain, the engineered cap would involve excavating one foot of soil prior to filling one foot to maintain the original grade. This methodology would prevent the subtraction of flood volume storage within the Woonasquatucket River watershed.

In addition to the engineered cap, an Environmental Land Usage Restriction (ELUR) would be recorded in the Providence land evidence records describing the extent of the cap and would include a site-specific Soil Management Plan (SMP). This SMP would provide instruction for future cap inspections and the proper measures to take in the event of any construction or cap disturbance, including RIDEM notification and proper soil handling procedures.

Option 3 is the preferred remedial alternative for the site. It would adequately isolate contaminated soils from future direct exposure and would include measures to annually inspect and repair the cap as needed. The engineered cap would improve the site as green space by removing the mill



structure and seeding the area. The wetland plantings will not only greatly improve aesthetically, but will become a greatly improved habitat for all wetland species. It is expected that the site will become a valuable asset to future recreational users of the bike path as well as native flora and fauna.

Due to funding issues and to ensure a high percentage of plant survivals, the City of Providence is currently planning on conducting the project in two phases. The City proposes to complete the wetland plantings in the fall season of this calendar year and will conduct the capping operations in the spring of 2010. All capping operations will be completed within a twelve month period, assuming minimal revision to the proposed remedial measures.

Please do not hesitate to contact me with any questions or concerns on this matter at (401) 736-3440, Ext. 202.

Sincerely,

EA ENGINEERING, SCIENCE,
AND TECHNOLOGY, INC.

A handwritten signature in black ink that reads "Mark K. Speer". The signature is written in a cursive, flowing style.

Mark K. Speer, P.E.
Senior Engineer

MKS/rgm

cc: R. McMahon, Superintendent – Providence Parks Department