Notice of Intent (NOI)

Bel Air Dam Removal Project

Application Of:

Massachusetts Department of Conservation and Recreation, Office of Dam Safety

Submitted To:

Pittsfield Conservation Commission
Massachusetts Department of Environmental Conservation

Submitted By:

July 2024

AECOM
250 Apollo Drive
Chelmsford, MA 01824
aecom.com

July 17, 2024

Pittsfield Conservation Commission
70 Allen Street
Pittsfield, MA 01021

Subject: Notice of Intent – Bel Air Dam Removal

Dear Commissioners:

On behalf of the Massachusetts Department of Conservation and Recreation, AECOM is pleased to submit the enclosed Notice of Intent (NOI) for the proposed Bel Air Dam Removal project. This NOI is being filed as an Ecological Restoration Project with the City of Pittsfield. The proposed dam removal will restore the natural connectivity of the West Branch of the Housatonic River, meeting the definition of an Ecological Restoration Project defined in *310 CMR 10.04*.

Bel Air Dam is part of the Massachusetts Department of Conservation and Recreation (MassDCR) Office of Dam Safety's (ODS) pilot Abandoned Dams program. As part of this program, MassDCR is seeking to address safety concerns pertaining to dams in the Commonwealth that have no identifiable owner. In the case of Bel Air Dam, neither the City of Pittsfield nor any other interested party has expressed willingness to take ownership of the dam; therefore, the MassDCR ODS is proposing to remove the dam. The proposed project will remove the Bel Air Dam on the West Branch of the Housatonic River and thereby restore the natural connectivity of a waterway.

The project proposes the removal of the entire dam structure, restoration of a natural stream channel in the area of the current impoundment, establishment of adjacent floodplain, and installation of native herbaceous and woody species. The proposed project would result in temporary and permanent impacts to the Land Under Water, Bank, 200-foot Riverfront Area, Bordering Land Subject to Flooding, and Bordering Vegetated Wetlands.

In accordance with the Massachusetts Wetlands Protection Act regulations, a check for $262.50 is enclosed to facilitate the Conservation Commission's review. Abutters have been notified as detailed in the enclosed information, and a copy of the NOI is being submitted to DEP Western Regional Office. We request that the enclosed NOI be placed on agenda for hearing on August 1, 2024, and look forward to discussing the project with the Conservation Commission.

If you have any questions regarding the enclosed application or would like to schedule a site visit, please contact me at 978-905-2968 or Jennifer.Doyle-Breen@aecom.com.

Sincerely,

Jennifer Doyle-Breen, PWS
Associate Vice President

cc: William Salomaa, MassDCR
MassDEP WR

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands Program

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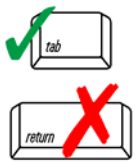
Project Type

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Check the Ecological Restoration type that applies:

☒ 1. Dam Removal

☐ 2. Freshwater Stream Crossing Repair and Replacement*

☐ 3. Stream Daylighting

☐ 4. Tidal Restoration

☐ 5. Rare Species Habitat Restoration

☐ 6. Restoring Fish Passageways

Eligibility Criteria:

☒ I am applying for a Restoration Order of Conditions and meet the General Eligibility Criteria [310 CMR 10.13(1)] as described in Section C1 and the Additional Eligibility Criteria for this Ecological Restoration Project type [310 CMR 10.13(2) through (7)] as described in Section C2.

☒ This Notice of Intent includes the required supporting documents as specified in [310 CMR 10.11, 10.12] and outlined in Appendix 1 and Appendix 2 respectively. The NOI also includes a signed Certification of Eligibility in Section G. Signatures and Submittal Requirements.

A. General Information

1. Project Location:

Wahconah Street
a. Street Address

Pittsfield
b. City/Town

01201
c. Zip Code

Latitude and Longitude*:

42.47107
d. Latitude

73.24823
e. Longitude

f. Assessors Map/Plat Number

H120012021 and H130006020
g. Parcel/Lot Number

2. Applicant:

William
a. First Name

Salomaa
b. Last Name

MassDCR, Office of Dam Safety
c. Organization

* *If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.*

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A. General Information (cont.)

State Transportation Building, 10 Park Plaza
d. Street Address

Boston | MA | 02116
e. City/Town | f. State | g. Zip Code

617-719-1942 | | william.salomaa@mass.gov
h. Phone Number | i. Fax Number | j. Email Address

3. Property Owner (required if different from applicant): ☒ Check and attach list if more than one owner

Joseph | Hollister
a. First Name | b. Last Name

c. Organization

51 Holmes Road
d. Street Address

Pittsfield | MA | 01201
e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

4. Representative (if any):

Jennifer | Doyle-Breen
a. First Name | b. Last Name

AECOM
c. Organization

250 Apollo Drive
d. Street Address

Chelmsford | MA | 01824
e. City/Town | f. State | g. Zip Code

978-905-2968 | | jennifer.doyle-breen@aecom.com
h. Phone Number | i. Fax Number | j. Email Address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form): Category 2 - $500

$500 | $237.50 | $262.50
a. Total Fee Paid | b. State Fee Paid | c. City/Town Fee Paid

6. Property recorded at the Registry of Deeds for:

Berkshire |
a. County | b. Certificate # (if registered land)

1050 | 1041
c. Book | d. Page Number

7. Project Narrative: Describe the project's ecological restoration goals and how it furthers at least one of the interests of the Wetland Protection Act (WPA) M.G.L. c. 131, § 40.

This project will remove the existing Bel Air Dam and restore the connectivity of the West Branch of the Housatonic River. See the full project narrative in Attachment A.

Additional Property Owner

Name	Contact Information	Parcel
City of Pittsfield	City of Pittsfield Mayor Peter M. Marchetti (413) 499-9321	H130006020

CITY OF PITTSFIELD

OFFICE OF THE CITY SOLICITOR, CITY HALL, 70 ALLEN STREET, SUITE 200, PITTSFIELD, MASSACHUSETTS 01201
TEL (413) 499-9352
FAX (413) 499-9354

July 11, 2024

Peter Marchetti, Mayor
Mayor's Office
70 Allen St.
Pittsfield, MA. 01201

Re: Bel Air Dam

Dear Mayor Marchetti:

I am writing at the City's request to confirm my analysis and opinion relative to the City's ability to enter onto the property located at Wahconah Street and identified as Lots H130006020 (the "Hollister Parcel") and H120012021 (the "Bel Air Dam Parcel") on the City Assessor's map and to join with the Commonwealth of Massachusetts in its efforts to secure, improve and maintain the above-captioned parcel, (together the "Subject Property").

The Hollister Parcel is subject to a tax taking recorded in the Berkshire Middle District Registry of Deeds in Book 1460, Page 423. Once a property is "taken" by a municipality through a tax taking, only the right of redemption remains. Title passes to the municipality and that includes the power of the municipality to enter onto a property, seize control of it and take actions as needed to secure, improve or maintain the property. *See* M.G.L. c. 60§§ 53 & 54; *see also* City of Chelsea v. Rivera, 2012 WL 1069294 * 2 n. 11 (Mass. App. Ct.) (unpublished) (expressly confirming the right of a municipality, should it so choose, "to take immediate possession of Defendant's land upon filing the notices of taking"). A municipality's authority to enter onto a property and to take the above-listed actions (amongst others) for properties which it holds a valid tax title is clearly endorsed and supported through the tax title statutory scheme and the decisions from the appellate courts in the Commonwealth. Id.

Please note that the jurisdictional authority is conferred to the City's Treasurer through M.G.L. c. 60. All actions relating to the property should be issued and endorsed by or through the Treasurer.

The Bel Air Parcel has been identified on the City Assessor's records as being owned by the City since the mid 1950's. Since that date, no one has been assessed for real estate taxes, nor has anyone paid the taxes or made any claim or use of the parcel. Unfortunately, the records establishing the City's ownership of the parcel are missing and cannot be found.

As of the 1952 relocation of Wahconah Street, the owner of Bel Air Pond was identified as "Owner Unknown". The last identified owners of Bel Air Pond were James & E. H. Wilson Inc. and the last conveyance from the company was a 1928 deed recorded in 1932.

Based on the existing history of the parcel, it is my opinion that the City has the ability and authority to enter onto the Bel Air Parcel and take actions as needed to secure the property and protect the public.

Out of an abundance of caution, the City intends to take the Subject Property by eminent domain prior to the end of calendar year 2024.

Should you have any questions or concerns about the conclusions stated in this correspondence, please do not hesitate to contact me.

Very truly yours,

Stephen N. Pagnotta
City Solicitor

SNP/hlg

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B. Resource Area Impacts (Temporary & Permanent)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

1. ☒ **Inland Resource Areas**: (See 310 CMR 10.54-10.58)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☒ Bank	2,600 LF 1. linear feet	2,310 LF 2. linear feet
b. ☒ Bordering Vegetated Wetland	54,280 Sq Ft 1. square feet	0 SF 2. square feet
c. ☒ Land Under Waterbodies and Waterways	135,740 Sq Ft 1. square feet	49,200 Sq Ft 2. square feet
	35,000 CY 3. cubic yards dredged	
d. ☒ Bordering Land Subject to Flooding	41,000 Sq Ft 1. square feet	34,000 Sq Ft 2. square feet
	0 CY 3. cubic feet of flood storage lost	N/A: No Compensatory Storage Required 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	 1. square feet	
	 2. cubic feet of flood storage lost	 3. cubic feet replaced
f. ☒ Riverfront Area	West Branch of Housatonic River - inland 1. Name of Waterway (if available) - **specify inland or coastal**	
2. Proposed alteration of the riverfront area:		81,900 Sq Ft a. total square feet

2. ☐ **Coastal Resource Areas:** (see 310 CMR 10.25-10.35)

Check all that apply below. **For coastal riverfront area, see B.1.f. above.**

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	 1. square feet	
	 2. cubic yards dredged	
c. ☐ Barrier Beach**	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	 1. square feet	 2. cubic yards beach nourishment
e. ☐ Coastal Dunes**	 1. square feet	 2. cubic yards dune nourishment

** *Note: No armoring of a Coastal Dune or Barrier Beach is permitted.*

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B. Resource Area Impacts (Temporary & Permanent) (cont.)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

3. ☒ **Restoration/Enhancement**

In addition to the square footage that has been entered in Section B1.b for BVW and B 2.h for Salt Marsh above, please enter the additional amount here for restoration/enhancement.

Land Under Water	49,200 SF
a. Identify the appropriate resource area(s) type/name	Square feet or linear feet
Bank	2,310 LF
b. Identify the appropriate resource area(s) type/name	Square feet or linear feet

C. Ecological Restoration Project Description

1. Check each box below to confirm that the project complies with each Eligibility Criteria required to obtain a Restoration Order of Conditions and provide the appropriate documentation.

☒ This project will have no short term or long-term adverse effects on Estimated Habitat sites of Rare Species located within resource areas that may be affected by the project or will be carried out according to a habitat management plan approved by NHESP.

☒ The project avoids and minimizes adverse impacts to Resource Areas and the interests identified in the WPA, without impeding the achievement of the ecological restoration goals

☒ The project will utilize best management practices to prevent and minimize adverse impacts to Resource Areas and the WPA interests.

☒ This Project will cause NO significant adverse effects on the interests of flood control and storm damage prevention in relation to the built environment (i.e., the project will not result in a significant increase in flooding or storm damage affecting buildings, wells, septic systems, roads or other man-made structures or infrastructure) **and** documentation on how this is achieved.

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C. Ecological Restoration Project Description (cont.)

☐ If the Project involves the dredging of 100 cubic yards of sediment or more or dredging in an ORW, a 401 Water Quality Certification is required and attached. Requires a 401 Water Quality Certification. A 401 application was submitted on June 14, 2024, and a copy will be provided once it is issued.

☒ The Project will not substantially reduce the capacity of a Resource Area to serve the wildlife habitat functions identified in 310 CMR 10.60(2). A project will be **presumed** to meet this eligibility criteria if the NOI will be carried out in accordance with any Time of Year (TOY) restrictions or other conditions recommended by the DMF for coastal waters, and by the DFW for inland waters in accordance with 310 CMR 10.11(3), (4) and (5). A NOI for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) it ***is exempt from performing a wildlife habitat evaluation.***

☐ If the project involves work on a **stream crossing**, the stream crossing has been designed in accordance with 310 CMR 10.24(10) for work in coastal resource areas and 310 CMR 10.53(8) for work in inland resource areas, as applicable. See additional requirements below for Freshwater Stream Crossing Repair and Replacement Projects.

☒ The project will not result in a discharge of dredged or fill material within 400 feet of the high water mark of a Class A surface water (exclusive of its tributaries) unless the project is conducted by a public water system under 310 CMR 22.00 or a public agency or authority for the maintenance or repair of existing public roads or railways in accordance with 314 CMR 4.06(1)(d)1.

☒ The project will not result in a discharge of dredged or fill material to a vernal pool certified by the Massachusetts Division of Fisheries and Wildlife (DFW).

☒ The project will not result in a point source discharge to an Outstanding Resource Water.

☒ The project will not involve the armoring of a Coastal Dune or Barrier Beach.

☒ Describe in detail the project plan for invasive species prevention and control.

☒ Provide any TOY restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4) and (5) with attached copies of their written determinations.
There are no TOY restrictions - see Attachment O

☐ If the project involves the construction, repair, replacement or expansion of infrastructure, a proposed operation and maintenance plan is provided to ensure that the infrastructure will continue to function as designed;

2. Check each box as appropriate to confirm that the project complies with the Eligibility Criteria required for this Ecological Restoration Project type.

Dam Removal

☒ The Ecological Restoration Project is a dam removal project. The project meets the eligibility criteria set forth in 310 CMR 10.13(1)(d).

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C. Ecological Restoration Project Description (cont.)

☒ The Project **is** consistent with the MassDEP guidance entitled *Dam Removal and the Wetlands Regulations*, dated December 2007, and meets the eligibility criteria set forth in 310 CMR 10.13(1).

☐ The Project is NOT consistent with MassDEP's guidance entitled Dam Removal and the Wetlands Regulations, dated December 2007 and meets the eligibility criteria set forth in 310 CMR 10.13(1).

☒ The project will not involve the removal of a dam that was constructed or is managed for flood control by a municipal, state or federal agency.

☒ The project will not adversely impact public water supply wells or water withdrawals permitted or registered under the Water Management Act, M.G.L. c. 21G, and 310 CMR 36.00 within the reach of the stream impacted by the impoundment.

☒ The project will not adversely impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.

☒ The project provides for the removal of the full vertical extent of the dam such that no remnant of the dam will remain at or below the streambed as determined prior to commencement of the dam removal project, or if such determination cannot be made at that time, as determined during construction of the project.

☒ The project provides for the removal of enough of the horizontal extent of the dam such that after removal no water will be impounded during the 500 year flood event.

☒ The project will not involve a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license.

☒ The applicant has obtained from the Department of Conservation and Recreation Office of Dam Safety a written determination in accordance to the General Applicability requirements prior to submitting this NOI.

☒ If the project is exempt from the requirement to obtain a license or permit under 310 CMR 9.05(3)(n), the project will not have an adverse effect on navigation or on any docks, piers or boat ramps authorized under 310 CMR 9.00.

Freshwater Stream Crossing Repair and Replacement (310 CMR 10.13(3))

☐ The Ecological Restoration Project is a freshwater stream crossing repair or replacement project. In addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria that will meet the MA Stream Crossing (SC) Standards that is completely described below or in the attached:

☐ The width of the structure will be at least 1.2 times bankfull width to facilitate the movement of fish and other aquatic organisms and wildlife species that may utilize riparian corridors.

☐ The structure will be an open-bottom span where practicable or if an open-bottom span is not practicable, the structure bottom will be embedded in a substrate that matches the substrate of the stream channel and that shall be designed to maintain continuity of aquatic and benthic elements of the stream including appropriate substrates and hydraulic characteristics within the culvert (water depths, slope, turbulence, velocities, and flow patterns).

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C. Ecological Restoration Project Description (cont.)

- ☐ The structure will have an Openness Ratio of at least 0.82 feet, or as close to 0.82 feet as is practicable.
- ☐ The project includes considerations for site constraints in meeting the SC standards, undesirable effects or risk in meeting the standard, the environmental benefit of meeting the standard compared to the cost in evaluating:
  - ☐ The potential for downstream flooding
  - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
  - ☐ Potential for erosion and head-cutting;
  - ☐ Stream stability;
  - ☐ Habitat fragmentation caused by the crossing;
  - ☐ The amount of stream mileage made accessible by the improvements;
  - ☐ Storm flow conveyance;
  - ☐ Engineering design constraints specific to the crossing;
  - ☐ Hydrologic constraints specific to the crossing;
  - ☐ Impacts to wetlands that would occur by improving the crossing;
  - ☐ Potential to affect property and infrastructure; and
  - ☐ Cost of replacement.

Stream Daylighting

- ☐ The Ecological Restoration Project is a stream daylighting project. In addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria and is completely described narrative below/attached:
  - ☐ The project will meet the applicable performance standards for Bank, 310 CMR 10.54, and Land Under Water Bodies and Waterways, 310 CMR 10.56. As set forth in 10.12(3), a person submitting a Notice of Intent that meets the requirements of 310 CMR 10.12 (1) and (2) for a stream daylighting project is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60, notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 310 CMR 10.56(4)(a)4., and 310 CMR 10.60.
  - ☐ To the maximum extent practicable, the project is designed to include the revegetation of all disturbed areas with noninvasive indigenous species appropriate to the site.

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C. Ecological Restoration Project Description (cont.)

Tidal Restoration Project (310 CMR 10.13(5))

☐ The Ecological Restoration Project is a Tidal Restoration Project designed to restore tidal flow that has been restricted or blocked by a man-made structure. In addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria that is completely described below or in the attached:

- ☐ If the project will involve work in a Coastal Dune and/or a Coastal Beach, the project meets the applicable performance standard(s) at 310 CMR 10.27 and/or 10.28.
- ☐ The project will not include a new or relocated tidal inlet/breach through a Barrier Beach or additional armoring of a Barrier Beach, but may include the modification, replacement or enlargement of an existing culvert or inlet through a Barrier Beach.
- ☐ The project will not involve installation of new water control devices (i.e., tide gates, flash boards and adjustable weirs) or a change in the management of existing water control devices, when the existing or proposed function of said devices is to prevent flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.
- ☐ The project's physical specifications are compatible with passage requirements for diadromous fish runs identified at the project location by the Division of Marine Fisheries.
- ☐ Did the project include considerations for site constraints in meeting the SC standards, undesirable effects or risk in meeting the standard, the environmental benefit of meeting the standard compared to the cost in evaluating:
  - ☐ The potential for downstream flooding
  - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
  - ☐ Potential for erosion and head-cutting;
  - ☐ Stream stability;
  - ☐ Habitat fragmentation caused by the crossing;
  - ☐ The amount of stream mileage made accessible by the improvements;
  - ☐ Storm flow conveyance;
  - ☐ Engineering design constraints specific to the crossing;
  - ☐ Hydrologic constraints specific to the crossing;
  - ☐ Impacts to wetlands that would occur by improving the crossing;
  - ☐ Potential to affect property and infrastructure; and

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C. Ecological Restoration Project Description (cont.)

☐ Cost of replacement.

Rare Species Habitat Restoration (310 CMR 10.13(6))

☐ The Ecological Restoration Project is a Rare Species habitat restoration project. In addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria that is completely described below or in the attached:

☐ The project is exempt from review under 321 CMR 10.00 as a project that involves the active management of Rare Species habitat for the purpose of maintaining or enhancing the habitat for the benefit of Rare Species. A project that involves the active management of Rare Species habitat and is exempt from review under 321 CMR 10.00 may include without limitation the mowing, cutting, burning or pruning of vegetation or the removal of exotic or invasive species.

☐ The project is carried out in accordance with a Habitat Management Plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with this Notice of Intent.

Restoring Fish Passageways (310 CMR 10.13(7))

☐ The Ecological Restoration Project involves the restoration or repair of a fish passageway as identified by the Division of Marine Fisheries in its Marine Fisheries Technical Reports, TR 15 through 18, dated 2004. In addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria that is completely described below or in the attached:

☐ Proof of submission of a Fishway Permit Application to the Division of Marine Fisheries, pursuant to M.G.L. c. 130, §§ 1 and 19, and 322 CMR 7.01(4)(f) and (14)(m); and

☐ The fish passageway will be operated and maintained in accordance with an Operation and Maintenance Plan approved by the Division of Marine Fisheries.

D. Other Applicable Standards and Requirements

A person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) and that contains either a written determination from the Natural Heritage Endangered Species Program (NHESP) that the project will have no short or long term adverse effects on the habitat of the local population of state-listed species, or a Conservation and Management Permit issued by NHESP pursuant to the Massachusetts Endangered Species Act (MESA) Regulations at 321 CMR 10.00 for the project, or a habitat management plan for the project approved in writing by NHESP, will be deemed to have satisfied the requirements in 310 CMR 10.37 and 310 CMR 10.59 of sending the Notice of Intent for the same project for a determination by NHESP. For the purposes of this guidance, the “same project” means either there have been no changes to the project reviewed by NHESP in making its determination or that any subsequent changes to the project since the initial review by NHESP have been reviewed and approved in writing by NHESP.

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D. Other Applicable Standards and Requirements (cont.)

Compliance with the above NHESP-related requirements may be demonstrated by providing the following applicable documentation. See Appendix 1 for a complete description of these requirements. Check the applicable box below.

☒ The project is not within Estimated Habitat of State-Listed Rare Wetlands Wildlife as shown on the most recent Estimated Habitat Maps of State-Listed Rare Wetlands Wildlife published by the Natural Heritage and Endangered Species Program. See Attachment N.

☒ The NHESP has issued the attached written determination that the project will have no short or long term adverse effects on the habitat of the local population of state-listed species.

☐ The NHESP has issued the attached written approval of the attached habitat management plan for this project, which makes it an eligible Rare Species habitat restoration project under 310 CMR 10.13(6).

☐ The NHESP has issued pursuant to the MESA Regulations at 321 CMR 10.00 the attached Conservation and Management Permit for this project.

☐ There have been no changes to the project reviewed by NHESP in making its determination, or if so, any subsequent changes to the project have been reviewed and approved in writing by NHESP and attached hereto.

1. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

   a. ☒ Not applicable – project is in inland resource area only

   b. ☐ Yes ☐ No

   If yes, include proof of mailing, hand delivery, or electronic delivery of written determination to either:

   South Shore – Cohasset to Rhode Island border, and the Cape & Islands:
   Division of Marine Fisheries –
   South Coast Field Station
   Attn: Environmental Reviewer
   1213 Purchase Street – 3rd Floor
   New Bedford, MA 02740-6694
   Email: DMF.EnvReview-South@state.ma.us

   North Shore – Hull to New Hampshire border:
   Division of Marine Fisheries –
   North Shore Field Station
   Attn: Environmental Reviewer
   30 Emerson Avenue
   Gloucester, MA 01930
   Email: DMF.EnvReview-North@state.ma.us

2. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No

   If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP website for ACEC locations).

   b. ACEC

3. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

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D. Other Applicable Standards and Requirements (cont.)

4. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

5. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes ☒ No

   If yes, attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

   ☐ Proprietary BMPs are included in the Stormwater Management System.

6. ☐ If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan has been submitted to ensure that the infrastructure will continue to function as designed.

7. ☐ The project involves the dredging of 100 cubic yards or more of sediment, or dredging of any amount in an Outstanding Resource Water, and a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00 is attached. A 401 application was submitted on June 14, 2024, and a copy will be provided once it is issued.

8. ☐ The Ecological Restoration Project involves work on a stream crossing. Sufficient information has been provided to demonstrate that the design meets the requirements in 310 CMR 10.24(10) for work in coastal resources, and 310 CMR 10.53 (8) for work in an inland resource area.

E. Additional Information

Check each box for required documents that are attached to this Notice of Intent (NOI). See instructions for details.

1. ☒ Maps and Plans identifying the location of proposed activities relative to the boundaries of each affected resource area [http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/nwi.html]

2. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

   See Table of Contents

   a. Plan Title

   b. Prepared By

   c. Signed and Stamped by

   d. Final Revision Date

   e. Scale

   f. Additional Plan or Document Title

   g. Date

3. ☐ Attach proof of Natural Heritage and Endangered Species Program written determination, if needed.
4. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries Time of Year written determination, if needed.

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E. Additional Information (cont.)

5. ☒ Attach NOI Wetland Fee Transmittal Form.

6. ☐ Attach Stormwater Report, if needed.

F. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

   Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number	3. Check date
4. State Check Number	5. Check date
6. Payor Name on Check: First Name	7. Payor Name on Check: Last Name

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G. Signatures and Submittal Requirements

Certification of Ecological Restoration Project Notice of Intent

I hereby certify under penalties of perjury that **the Ecological Restoration Project Notice of Intent application meets the Eligibility Criteria set forth in 310 CMR 10.13.** I also certify that I am familiar with the information contained in this Notice of Intent application and that the accompanying plans, documents, and supporting data are to the best of my knowledge and belief true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant or Authorized Agent

William C. Salomaa
2. Printed Name of Applicant or Authorized Agent

July 12, 2024
3. Date

4. Signature of Property Owner (if different)

7/12/24
5. Date

Jennifer Doyle-Braun
6. Signature of Representative (if any)

July, 12, 2024
7. Date

The certification must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 6) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

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Appendix 1: Ecological Restoration Notice of Intent (WPA 3a) - Required Actions (310 CMR 10.11)

Complete the Required Actions before submitting a Notice of Intent Application for an Ecological Restoration Project and submit a completed copy of this Checklist with the Notice of Intent.

☒ **Environmental Monitor /Massachusetts Environmental Policy Act (MEPA)** See Attachment G
http://www.mass.gov/eea/agencies/mepa/submitting-notices-to-the-environmental-monitor.html

☒ Submit written notification at least 14 days **prior** to the filing of a Notice of Intent (NOI) to the *Environmental Monitor* for publication. A copy of the written notification is attached and provides at minimum: See Attachment H for notice to be published in the *Environmental Monitor* on July 24, 2024.

- ☒ A brief description of the proposed project.
- ☒ The anticipated NOI submission date to the conservation commission.
- ☒ The name and address of the conservation commission that will review the NOI.
- ☒ Specific details as to where copies of the NOI may be examined or acquired **and** where to obtain the date, time, and location of the public hearing.

☐ **Massachusetts Endangered Species Act (MESA) /Wetlands Protection Act Review**

☐ Preliminary Massachusetts Endangered Species Act Review from the Natural Heritage and Endangered Species Program (NHESP) has been met and the written determination is attached.

☐ Supplemental Information for Endangered Species Review has been submitted.

1. ☐ Percentage/acreage of property to be altered:
   a. Within Wetland Resource Area _____ Percentage/acreage
   b. Outside Wetland Resource Area _____ Percentage/acreage
2. ☐ Assessor's Map or right-of-way plan of site
3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work.
4. ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)
5. ☐ Photographs representative of the site
6. ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm)

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Appendix 1: Ecological Restoration Notice of Intent (WPA 3a) - Required Actions (310 CMR 10.11)

Make check payable to "Commonwealth of Massachusetts - NHESP" and mail to NHESP:

Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

7. Projects altering 10 or more acres of land, also submit:

   a. ☐ Vegetation cover type map of site

   b. ☐ Project plans showing Priority & Estimated Habitat boundaries

OR Check One of the Following:

1. ☐ Project is exempt from MESA review.

Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59 – see C4 below)

2. ☐ Separate MESA review ongoing.

   a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed. Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

☐ **Estimated Habitat Map of State-Listed Rare Wetlands Wildlife**

If a portion of the proposed project is located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP), complete the portion below. To view habitat maps, see the **Massachusetts Natural Heritage Atlas** or view the maps electronically at: http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review

☐ A preliminary written determination from Natural Heritage and Endangered Species Program (NHESP) must be obtained indicating that:

- ☐ Project will NOT impact an area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by *NHESP.*
- ☐ Project will impact an area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP. A copy of NHESP's written preliminary determination in accordance with 310 CMR 10.11(2) is attached. This specifies:
  - ☐ Date of the map: _____

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Appendix 1: Ecological Restoration Notice of Intent (WPA 3a) - Required Actions (310 CMR 10.11)

☐ If the Rare Species identified is/are likely to continue to be located on or near the project, and if so, whether the Resource Area to be altered is in fact part of the habitat of the Rare Species.

☐ That if the project alters Resource Area(s) within the habitat of a Rare Species:

☐ The Rare Species is identified;

☐ NHESP's recommended changes or conditions necessary to ensure that the project will have **no** short or long term adverse effect on the habitat of the local population of the Rare Species is provided; **or**

☐ An approved NHESP habitat management plan is attached with this Notice of Intent.

Send the request for a preliminary determination to:
Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

☐ **Division of Marine Fisheries**

☐ If the project will occur within a coastal waterbody with a restricted Time of Year, [see Appendix B of the Division of Marine Fisheries (DMF) Technical Report TR 47 "Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects" dated April 2011 http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/MADMFTR-47.pdf].

☐ Obtain a DMF written determination stating:

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. Specific recommended TOY restriction and recommended conditions on the proposed work is attached.

☐ If the project may affect a diadromous fish run [re: Division of Marine Fisheries (DMF) Technical Reports TR 15 through 18, dated 2004: http://www.mass.gov/eea/agencies/dfg/dmf/publications/technical.html]

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☐ Obtain a DMF written determination stating:

☐ The design specifications and operational plan for the project are compatible with the passage requirements of the fish run.

☐ The design specifications and operational plan for the project are not compatible with the passage requirements of the fish run.

Send the request for a written determination to:

South Shore – Cohasset to Rhode Island border, and the Cape & Islands:
Division of Marine Fisheries –
South Coast Field Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF_EnvReview.South@state.ma.us

North Shore – Hull to New Hampshire border:
Division of Marine Fisheries –
North Shore Field Station
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF_EnvReview.North@state.ma.us

☒ **Division of Fisheries and Wildlife –** http://www.mass.gov/eea/agencies/dfg/dfw/

☒ Projects that involve silt-generating, in-water work that will impact a non-tidal perennial river or stream and the in-water work will ***not*** occur between May 1 and August 30.

☒ Obtain a written determination from the Division of Fisheries and Wildlife (DFW) as to whether the proposed work requires a TOY restriction. See letter from DFW in Attachment O

☒ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. The DFW determination with TOY restriction and other conditions is attached.

☒ **MassDEP Water Quality Certification**

☐ Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water (ORW). A copy and proof of the MassDEP Water Quality Certification pursuant to 314 CMR 9.00 is attached to the NOI.

A 401 application was submitted on June 14, 2024, and a copy will be provided once it is issued.

☐ This project is a Combined Permit Application for 401 Dredging and Restoration (BRP WW 26).

☐ **MassDEP Wetlands Restriction Order**

Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

☐ Yes ☐ No

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Appendix 1: Ecological Restoration Notice of Intent (WPA 3a) - Required Actions (310 CMR 10.11)

☒ **Department of Conservation and Recreation**

Office of Dam Safety A Dam Safety Permit is required and pending, it will be provided once available.

☐ For Dam Removal Projects, obtain a written determination from the Department of Conservation and Recreation Office of Dam Safety that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00, a written determination that the dam removal does not require a permit under 302 CMR 10.00 or a permit authorizing the dam removal in accordance with 302 CMR 10.00 has been issued.

Areas of Critical Environmental Concern (ACECs)

Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations).

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Appendix 2: Ecological Restoration Notice of Intent (WPA 3a) - Minimum Required Documents (310 CMR 10.12)

Complete the Required Documents Checklist below and provide supporting materials before submitting a Notice of Intent Application for an Ecological Restoration Project.

☒ This Notice of Intent meets all applicable requirements outlined in for Ecological Restoration Projects in 310 CMR 10.12. Use the checklist below to insure that all documentation is included with the NOI.

At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

☒ Description of the project's ecological restoration goals;

☒ The location of the Ecological Restoration Project;

☒ Description of the construction sequence for completing the project;

☒ A map of the Areas Subject to Protection Under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas.

☒ The method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.) is attached with documentation methodology.

☒ List the titles and dates for all plans and other materials submitted with this NOI.

See Table of Contents
a. Plan Title

b. Prepared by

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

☒ If there is more than one property owner, attach a list of these property owners not listed on this form.

☒ Attach NOI Wetland Fee Transmittal Form.

☒ An evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;

☒ A plan for invasive species prevention and control;

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Appendix 2: Ecological Restoration Notice of Intent (WPA 3a) - Minimum Required Documents (310 CMR 10.12)

- [x] The Natural Heritage and Endangered Species Program written determination in accordance with 310 CMR 10.11(2), if needed; Refer to Attachment N
- [x] Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4), (5), if needed; See Attachment O
- [ ] Proof that notice was published in the *Environmental Monitor* as required by 310 CMR 10.11(1; See Attachment H, notice will be published July 24, 2024.
- [x] A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13;
- [ ] If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;
- [ ] If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00; A 401 application was submitted on June 14, 2024, and a copy will be provided once it is issued.
- [ ] If the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and
- [ ] If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.
- [ ] This project is subject to provisions of the MassDEP Stormwater Management Standards. A copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) is attached.
- [x] Provide information as the whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.

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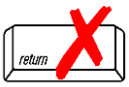
NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Wachonah Street	Pittsfield
a. Street Address	b. City/Town
	$500
c. Check number	d. Fee amount

2. Applicant Mailing Address:

William		Salomaa
a. First Name		b. Last Name
MassDCR, Office of Dam Safety		
c. Organization		
State Transportation Building, 10 Park Plaza		
d. Mailing Address		
Boston	MA	02116
e. City/Town	f. State	g. Zip Code
617-719-1942		william.salomaa@mass.gov
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Joseph		Hollister
a. First Name		b. Last Name
c. Organization		
51 Holmes Road		
d. Mailing Address		
Pittsfield	MA	01201
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

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NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2	1	$500	$500

Step 5/Total Project Fee:

Step 6/Fee Payments:

Total Project Fee:	500 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	262.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Attachment A
Detailed Project Description

Attachment A Table of Contents

1.0 Introduction

On behalf of the Massachusetts Department of Conservation and Recreation (MassDCR), Office of Dam Safety (ODS), AECOM is submitting this Notice of Intent (NOI) for an Ecological Restoration Project application pursuant to the Massachusetts Wetlands Protection Act (*WPA; MGL Ch. 131 s. 40*) and its implementing regulations (*310 CMR 10.00*) for the removal of Bel Air Dam. Bel Air Dam is located in the City of Pittsfield, Massachusetts in Berkshire County, east of Wahconah Street and west of Fairview Avenue. A locus map of the project location and surrounding area is provided in **Attachment B**.

Bel Air Dam is part of the Massachusetts Department of Conservation and Recreation (MassDCR) Office of Dam Safety's (ODS) pilot Abandoned Dams program. As part of this program, MassDCR is seeking to address safety concerns pertaining to dams in the Commonwealth that have no identifiable owner. In general, MassDCR seeks to partner with a municipality or other interested party in order to implement a Repair Alternative. If a municipality or other interested party will commit to achieving property ownership, then MassDCR will implement required dam repairs prior to property acquisition by others. Given no municipal or private party interest in achieving dam ownership, the Full or Partial Removal Alternatives are preferred. In the case of Bel Air Dam, neither the City of Pittsfield nor any other interested party has expressed willingness to take ownership of the dam; therefore, the MassDCR ODS is proposing to remove the dam. The proposed project will remove the Bel Air Dam on the West Branch of the Housatonic River and thereby restore the natural connectivity of a waterway, meeting the definition of an Ecological Restoration Project defined in *310 CMR 10.04*.

The proposed project is a Dam Removal Project as listed in *310 CMR 10.13(2)*, and proposes removal of the entire dam structure, restoration of a natural stream channel in the area of the current impoundment, establishment of adjacent floodplain, and installation of native herbaceous and woody species. The project area historically contained riparian habitat which has been degraded due to the impoundment. Changes to the environment caused by the presence of the dam include alteration of water temperatures and chemistry, river flow characteristics, and silt loads. The proposed project will also remove contaminated sediment that has accumulated upstream of the dam and includes elevated levels of chromium, arsenic, lead, polynuclear aromatic hydrocarbons (PAHs), and extractable petroleum hydrocarbons (EPHs). Project activities will occur within jurisdictional areas protected under the Massachusetts Wetlands Protection Act and its implementing regulations, including Land Under

Water (LUW), Bordering Vegetated Wetlands (BVWs), Bank, 200-foot Riverfront Area, and Bordering Land Subject to Flooding (BLSF).

1.1 Project Site Description and Background

The Bel Air Dam is located east of Wahconah Street and west of Fairview Avenue in Pittsfield, MA. The construction of Bel Air Dam was contracted in 1832. The dam was originally used for power generation for a woolen mill until the 1920s. The original sluiceway along the left side of the dam directed flow into a canal to power the carding machines and looms operated by the mill. The canal ran parallel to the West Branch of the Housatonic River for approximately 1,500 feet. In the 1940s, plans were developed to abandon the canal as the mill was no longer used for wool production. A cutoff wall was constructed that now directs the sluiceway flow into the river directly downstream of the dam.

According to records at the Berkshire Middle District Registry of Deeds and on the City of Pittsfield Tax Assessor records, the owner of the parcel including Bel Air Dam is identified as J. Barry Hollister and the owner of the parcel including the impoundment upstream of the dam is identified as the City of Pittsfield. However, additional legal research has been unable to confirm that the City of Pittsfield is the current owner of the upstream parcel, which was never conveyed from a previous owner who is deceased with no identifiable heirs. No tax taking by the City of Pittsfield has been found. J. Barry Hollister is also deceased with no heirs for the dam identified, and in addition Mr. Hollister owed unpaid real estate taxes on the parcel before his death. The City is in the process of taking both properties under eminent domain to facilitate implementation of the dam removal construction activities. See **Attachment C** for abutter information.

Bel Air Dam impounds the West Branch of the Housatonic River approximately 1.1 miles downstream of Pontoosuc Lake. The West Branch watershed is approximately 22.8 square miles at the Bel Air Dam site. Downstream of the dam the West Branch continues flowing south through the Berkshires in Massachusetts and through New York to Long Island Sound. The impoundment has a normal water surface area of 3 acres and is reported to have a storage capacity of 56 acre-feet, although sediment accumulation has reduced this capacity. The water elevation on the upstream side of the Dam is 1,026.0 feet NAVD88 and is controlled by the spillway outlet elevation, while the water elevation on the downstream side of the dam is approximately 1,014 feet. NAVD88

Bel Air Dam is a combined earthen embankment, stone masonry, and concrete structure. Looking downstream from right to left, the dam consists of an earthen embankment, a stone masonry auxiliary spillway (original principal spillway), an earthen and stone masonry embankment, a stone masonry and concrete sluiceway structure, and an earthen bank. The auxiliary spillway is uncontrolled and has a length of 56.5 feet, a crest width of 5 feet, and structural height of 26.5 feet. The sluiceway consists of two stone culverts side by side, each culvert being 3 feet wide, 4 feet high, and 8 feet long. The total length of the dam is approximately 200 feet, including the embankments and masonry structures.

The sluiceway currently acts as the principal spillway. Flow passes through the sluiceway culvert entrance (invert El. 1026) on the left side of the dam and flows into a diversion channel that turns 90 degrees to the right and discharges directly downstream of the auxiliary spillway. The level of the impoundment was previously controlled by sluice gates installed on the upstream face of the sluiceway entrance. MassDCR ODS removed the sluice gates in 2007 to lower the level of the impoundment behind the dam. Since the removal of the gates, flow has been observed passing over the uncontrolled auxiliary spillway when the capacity of the sluiceway is exceeded. There are no trash racks on the sluiceway, which has led to debris restricting its capacity and increasing the frequency of flow passing over the auxiliary spillway. There is no known low-level outlet for emergency draw down.

A Phase II visual, structural, and geotechnical investigation was conducted by AECOM in 2019 (AECOM, 2020). The condition of the dam was found to be UNSAFE and STRUCTURALLY DEFICIENT. The results of the Phase II Investigation are summarized below and excerpted text from the Phase II Report are provided in **Attachment D**:

- Earthen embankments on both sides of the dam: Overgrown with dense trees and shrubs; erosion is observed on both sides near the abutment area; exposed tree roots and depressed areas are noted on the left abutment contact area; downstream slopes exhibit steep earth slopes with no apparent surficial protection.

- Masonry retaining walls: The mortar joints are deteriorated and exhibit areas where voids from missing mortar and/or missing stones exist, as well as areas where vegetation is growing in or adjacent to the stone masonry components and their joints.

- Masonry sluiceway and auxiliary spillway: The mortar joints are deteriorated and exhibit areas where voids from missing mortar and/or missing stones exist, as well as areas

where vegetation is growing in or adjacent to the stone masonry components and their joints; seepage is exhibited in many areas across the auxiliary spillway section.

- Hydraulic Compliance: The dam does not have adequate spillway capacity. Under the existing conditions, it is estimated that the water surface level will reach El. 1,042.4 feet-NAVD88, or approximately 5.8 feet above the top of the dam during the Spillway Design Flood event.

- Embankment Stability: Factors such as the steep downstream slope and the loose density of the embankment and native soils are triggering low factors of safety along the right embankment. Analyses indicate that the saturated, native loose silty sands, are susceptible to liquefaction.

- Structural Stability: The existing auxiliary spillway section did not meet the required factors of safety for a High Hazard Potential dam.

- Sediment Quality: Sample results demonstrate that the impounded sediment may not be suitable for release downstream during construction or reuse on site due to the levels of detected contaminants including metals, polycyclic aromatic hydrocarbons (PAHs), extractable petroleum hydrocarbons (EPHs), polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs).

Additionally, a pedestrian bridge crosses above the auxiliary spillway and is constructed of steel beams and a concrete deck. The bridge has been condemned by the City of Pittsfield and is fenced off due to the deterioration of the structural elements being deemed to make the bridge unsafe for occupants. A gated chain link fence and no trespassing signs restrict access to the bridge. Debris has accumulated along the auxiliary spillway around the concrete piers supporting the bridge.

At the northern end of the parcel that includes the impoundment, the water surface consists of approximately 800 feet of linear, confined stream channel flowing under Wahconah Street and continuing south before discharging to the ponded area extending approximately 400 feet upstream of the dam. The impoundment is bordered by relatively dense vegetation on both sides, including many invasive species. On the eastern side of the impoundment the bank is steep and abuts residential properties on Lenox Avenue. The western edge of the ponded impoundment borders Wahconah Street and is within close proximity to the toe of the

embankment along Wahconah Street. In the upstream extent, grades on the west are substantially less steep between the edge of the stream and the toe of the embankment along the road. There are four stormwater outfalls discharging into the impoundment and tributary stream on the western bank. See site photographs in **Attachment E**.

Bel Air Dam is located upstream of several business and residences, and according to the dam's Emergency Action Plan (**Attachment F)** "*a flood resulting from a dam failure would pose a threat to life and property in areas downstream of Bel Air Dam* (MassDCR ODS, 2017)." A failure of the dam may cause loss of life and substantial damage to buildings, roadways, and other infrastructure. Therefore, the dam is classified as a High Hazard potential dam. AECOM conducted a visual structural and geotechnical condition assessment on May 23, 2019. Consistent with previous inspections, the condition of the dam was found to be Unsafe and Structurally Deficient. Measures must be taken for the Bel Air dam to become compliant with the State's Dam Safety Regulations.

1.2 Coordination with the City of Pittsfield

The Office of Dam Safety and AECOM met with staff from the City of Pittsfield on May 5, 2019, to gather additional background information and discuss the goals of the project as part of a preliminary community outreach effort. The City of Pittsfield has expressed support for the proposed dam removal, as there has been a history of public safety concerns associated with the dam site. The project will address safety concerns of the dam and will ultimately create accessible recreational space for adjacent communities. The integration of community greenspace will have significant human and environmental health benefits for the City of Pittsfield. On December 5, 2023, MassDCR and AECOM held a public outreach meeting, for Pittsfield residents, to provide information and updates on the project. A website is under development to provide the community updates and information on this project.

2.0 Ecological Restoration Project

This NOI is being filed as an Ecological Restoration Project with the City of Pittsfield. The proposed dam removal will restore the natural connectivity of the West Branch of the Housatonic River, meeting the definition of an Ecological Restoration Project defined in *310 CMR 10.04.* The project area historically contained riparian habitat which has been degraded due to the impoundment. Changes to the environment caused by the presence of the dam include the alteration of water temperatures and chemistry, river flow characteristics, and silt

loads. A Notice of Ecological Restoration was sent to the MEPA office on February 7, 2024. No determination was made within 10 days of the close of the comment period, that an Environmental Notification Form was required to be submitted. The MEPA decision further indicated that “Accordingly, any Agency Action required for the Project may be taken at this time if required to obtain a Restoration Order of Conditions, provided that the Agency Action is deemed to be conditioned on the ultimate issuance of the Restoration Order of Conditions.” No Environmental Notification Form is required – see **Attachment G**. The Bel Air Dam removal project is eligible for a Restoration Order of Conditions (*310 CMR 10.13*).

The project furthers the following WPA (*M.G.L. c. 131, § 40*) interests: flood control, storm damage prevention, prevention of pollution, and the protection of fisheries and wildlife habitat. Removal of the dam will remove a hazard that could lead to substantial downstream storm damage if the dam were to fail. The creation of floodplain habitat adjacent to the restored stream channel will contribute to the flood control interest of the WPA and its implementing regulations. Removal of the accumulated sediment will remove a source of pollution. Removal of the dam will allow for the restoration of the stream channel, which will contribute to fisheries habitat by improving hydrologic connectivity and water quality. Planting native species will contribute to enhancing wildlife habitat along the restored stream corridor. A notice of this NOI will be published in the July 24, 2024, *Environmental Monitor*, see **Attachment H**.

2.1 Ecological Restoration Goals

Goals of the Bel Air restoration project include:

- Improve hydrologic connectivity, restore a natural hydrologic regime, and increase sediment transport by the removal of a dam and reconstruction of approximately 1,200 feet of stream channel.
- Lower risk of flooding in the immediate project vicinity by lowering the 100-year floodplain elevation.
- Improve water quality by removing accumulated sediment in the existing ponded impoundment and tributary stream and restoring a natural flow regime.
- Improve wildlife habitat adjacent to the restored stream by removal of invasive species and installation of native seed and plants.

To achieve the project’s restoration goals, the removal of the Bel Air Dam structure and the reconstruction of a stream channel is proposed. There will no longer be an impoundment,

instead there will be a free-flowing river, which will improve aquatic resource and riparian habitat functions. This project would restore the environment to its historic condition by reconnecting the West Branch of the Housatonic River, which will offset the temporary impacts and loss of Land Under Water (LUW) in the proposed project location.

3.0 Project Design Components

The full removal of the Bel Air Dam will include the demolition of the existing dam to eliminate the impoundment, restoration of the hydraulic connectivity of the original waterway by the reconstruction a stream channel, the dredging of accumulated contaminated sediment, bank stabilization, and revegetation with native species. No new impervious surface will be created as a result of this project, as a result no Stormwater Report is included in the NOI however, a Stormwater Report Checklist is included as **Attachment I**. See Project Plans in **Attachment J** and the Construction Sequence in **Attachment K**. The approximate cost of dam removal is estimated to be approximately $20 million. The Commonwealth of Massachusetts has designated a portion of federal funds received as part of the American Rescue Plan Act (ARPA) to be used to fund the construction project needed to remove the Bel Air Dam.

The following sections describe the design and the construction work that will occur on the individual components of the dam.

3.1 Dam Removal

Work will include clearing vegetation on both sides of the existing dam within the limit of work (LOW) for construction access, excavation, and grading. It is anticipated that a phased breach would be completed by removing individual courses of rock at one-foot intervals to slowly dewater the impoundment. The final breach would be carried down to El. 1,014 feet-NAVD88. Removal of the dam will include demolition of the existing stone masonry, dam spillway, and appurtenant structures to eliminate the impoundment. The auxiliary spillway and training walls will also be demolished. The adjacent embankment will be reconstructed by backfilling the principal spillway with salvaged masonry stone and other suitable material that was recovered during the dam demolition process. Additionally, the pedestrian bridge over the dam will be removed. The bridge is immediately above the dam and must be removed to access the dam to implement removal activities.

3.2 Dredging

Massachusetts dredging guidelines are provided in the 401 Water Quality Certification (WQC) regulations (*314 CMR 9.00*). The 401 WQC regulations are intended to protect Massachusetts waters and wetlands by requiring that all dredging projects meet surface water quality standards and comply with the Wetlands Protection Act regulations (*310 CMR 10.00*). The proposed removal of the impoundment and the reconstruction of the stream channel will require management of sediment that is remaining on-site as well as excess sediment that will be disposed out-of-state.

Based on the analysis of accumulated sediment in the Bel Air impoundment (**Attachment L**) it is estimated that approximately 35,500 cubic yards of sediment will be dredged from the impoundment area to establish a new stream profile, banks, and 20-foot floodplain bench. The selection of either hydraulic dredging under wet conditions, mechanical dredging under partially dry conditions, or a combination of the two, will be decided by the construction contractor selected to implement the work in order to maximize value for the Commonwealth and to encourage innovative approaches that efficiently and effectively accomplish the project goals. However, regardless of the selected dredging technique(s), the contractor will be held to performance criteria which are identified below for each technique and will be described in a performance specification developed for bidding. The LOW and associated impacts to LUW will be the same regardless of which technique is implemented.

The Dredge Contractor will be responsible for providing a Dredge Work Plan for review and approval by MassDCR prior to starting work at the site. Side slopes for all dredging activities will be no steeper than 3H:1V, the estimated natural angle of repose, unless otherwise specified on the project drawings. For either dredging approach, it is anticipated that a flow by-pass system will be established to divert typical stream flows around the work area. This would be accomplished by installing a cofferdam immediately downstream of the Wahconah Street culvert which would divert typical streamflow into a by-pass channel along the western edge of the work area. As needed the cofferdam may be adjusted as construction proceed but will be within the limit-of-work shown on the project plans.

For either dredging approach, the Dredge Contractor will be required to install BMPs implemented to minimize generation of suspended solids from dredging activities. All work areas will be surrounded by compost filter sock product which shall be Filtrexx SiltSoxx®, with 12-inch diameter and green color mesh, or equivalent. Filter socks will be inspected weekly and

after each runoff event. Damaged socks shall be re-secured according to manufacturer's specifications or replaced within 24 hours of inspection. Sediment shall be removed and appropriately dispose of any accumulated sediment when it reaches 1/2 inch above ground height of the barrier. If filter socks are needed on the concrete pad at the staging area, they will be anchored with 50 lb (min.) sandbags every 10-ft on center.

Turbidity curtains will be installed prior to start of dredging. If river conditions allow, the turbidity curtain(s) shall enclose the entire dredge area and swing radius of the mechanical excavator at the transloading area. Landside and in-water anchor locations shall be coordinated with MassDCR or their representative at the time of construction based on field conditions. The Dredge Contractor shall submit to MassDCR or their representative the following for acceptance prior to procurement of turbidity curtain materials: manufacturer, supplier, dimensions, skirt length, float diameter, fabric type(s), ballast and middle loadline, anchor weight, buoy diameters, rope diameter and type, and other specifications required by the Engineer.

3.2.1 Mechanical Dredging

Mechanical dredging may be preferred by the contractor in all or some of the areas identified for dredging, particularly in the upper reaches of the stream tributary to the ponded portion of the impoundment, since water is shallower upstream of the ponded area and may not be conducive to hydraulic dredging. If the contractor elects to conduct mechanical dredging, it is anticipated that an amphibious excavator or an articulated long-reach excavator would be used and be either barge-mounted or used from shore. Work areas would be surrounded by sediment erosion controls to limit sediment generation, and these would be relocated as necessary as work proceeds from one location to another within the dredge area.

There are two approaches that are acceptable for sediment management after mechanical dredging:

1. Management of sediment near the point of dredging to allow for gravity draining, water management, and receiving facility required sampling prior to being loaded into transport trucks.

2. Transloading of sediment using the dredge machine into trucks for transport to the adjacent staging area for management and sampling prior to off-site, out-of-state disposal. The Dredge Contractor will be responsible for preventing water from leaking from the trucks.

3.2.2 Hydraulic Dredging

Hydraulic dredging would use a suction, high-pressure discharge, high-heated centrifugal pump, or suitable equivalent on a modular floating barge used to agitate consolidated sediment from the dredge prism and pump the slurry via a fused for flexible HPDE-pipeline to the staging area. If hydraulic dredging is used, the dredge head would be enclosed by a turbidity curtain to minimize sediment resuspension. Additional controls that may be implemented by the contractor to minimize sediment resuspension include:

- Flush lines to prevent backflow;
- Raise cutterhead to hover above sediment surface;
- Maintain constant control of cutterhead to optimize slurry solids;
- Adjust dredge rate;
- Dredge from upstream to downstream;
- Perform incremental cuts; and
- Conduct comprehensive debris clearance.

The Dredge Contractor would be responsible for installing a 6-inch HPDE pump to the staging area where dredge slurry is to be chemically conditioned and dewatered using geotextile tubes. Material would then be sampled from the tubes in accordance with the receiving facility's requirements prior to being trucked off-site for ultimate out-of-state disposal.

3.3 Staging and Access

All work will take place either on the impoundment's parcel, parcel H130006020, located in the City of Pittsfield or in the construction staging and sediment management at 370 Wahconah Street (parcel H120012021), downstream of the dam. This parcel was previously used for light industrial activities and contains concrete slabs of former building footprints that remained from former mill buildings. In September 2010, the City of Pittsfield engaged a consultant to perform a Method 1 Risk Characterization, which was concluded that the conditions on site did not pose a significant risk to human health, public safety, public welfare, or environment (TRC, 2010).

It is anticipated a lane closure will be necessary on Wahconah Street to facilitate construction traffic and sediment transport from the dredging area to the staging area. Although much of the means and methods of construction will be determined by the contractor, it is expected that construction access to the parcel upstream of the dam will be accomplished at the northern end

of parcel along Wahconah Street between the two most northern outfalls due to presence of steep slopes adjacent the road in the southern portion.

3.4 Stream Channel Restoration

With the proposed dam removal, the connectivity of the West Branch of the Housatonic River will be restored. Following sediment removal, a stream channel will be constructed, and bank grading and stabilization will occur. The preliminary stream channel design assumes that the channel alignment would closely follow the drainage pattern depicted in the existing bathymetric survey.

A HEC-RAS model at Bel Air Dam was developed to evaluate the full removal alternative. The model was developed using a design approach that considered natural channel design principals to restore channel conditions through the location of the existing dam. This approach uses regional hydraulic regression curves that relate drainage area to bankfull discharge and bankfull channel dimensions (width, depth, and cross-sectional area) at surveyed gaged locations within a physiographic region.

Bankfull discharge is an important stream feature for determining the relationships between drainage area size and stream channel dimensions. Bankfull discharge is the transition between the channel and its floodplain and is thus a morphologically significant streamflow (Leopold et al, 1964). Bankfull discharge is the flow that moves the most sediment over time and occurs every one to two years or 1.5 years on average.

The entire state of Massachusetts is located in the New England Province. There are no published regional hydraulic regression curves for the New England Province. Therefore, regional hydraulic regression curves from other physiographic regions were considered that would have similar physiographic conditions. These curves include Scientific Investigations Report 2005-5147 (Appalachian Plateau, Ridge and Valley and Piedmont Provinces), Scientific Investigations Report 2004-5247, (Appalachian Plateau Province) and Vermont Regional Hydraulic Geometry Curves, 2006 (New England Province).

Bankfull channel templates were prepared and added to the design channel invert at the base of the dam. These templates were then added to the existing cross sections upstream of the dam using the proposed profile where sediment refusal depths are projected. Bankfull floodplain benches were added to both sides of the bankfull design channel to provide additional flow capacity.

The resulting HEC-RAS model consists of a 1,600-foot-long reach of the West Housatonic River extending from about 80 feet downstream of the dam location to about 50 feet upstream of the Wahconah Street bridge upstream of the dam. The restored reach begins about 1,200 feet upstream of the dam location and consists mainly of a 40-foot-wide channel with a maximum bankfull depth of 3.5 feet and approximately 20-foot-wide floodplain benches along the stream channel except at the outside outer bends adjacent to pools and/or where existing topography and property lines limit the extent of achievable floodplain, see **Figure 1**.

Downstream boundary conditions were estimated based on the tailwater rating curve developed from the FEMA Flood Insurance Study (FIS) results. Flow profiles were calculated for the 2-year flood to evaluate the stream stability under normal flow conditions, and for the flows used in the FIS, i.e., 10-, 50-, 100- and 500-year floods (**Table 1**). The hydraulic profile for the 2-year flow indicates uniform hydraulic depths ranging from 2 to 3 feet over the length of the restored channel with maximum flow velocities of 7.0 feet per second in the steepest section of the reach. The shear stresses at the bottom of the channel were calculated to range from 1.0 to 2.0 pounds per square foot.

Table 1. HEC-RAS Simulation – Boundary Conditions

Flood Event	Discharge (cfs)	Downstream W.S El. (feet-NAVD88)
2-year	**340**	**1015.0**
10-year	**1,040**	**1016.9**
50-year	**2,016**	**1019.6**
100-year	**2,476**	**1020.6**
500-year	**4,234**	**1023.5**

Due to the velocities anticipated to occur during storm events, the stream channel has been designed to include a reinforced bed consisting of a mix of small and large rock, which is natural in color. The project drawings include the details of the stream substrate material, which will be placed to a depth of 12-inches in the pools and 24-inches in riffle sections. In order to place the stream substrate material, all existing sediment will be excavated to a depth at, or below, denser material (based on sediment sampling conducted to date). It is anticipated that removal of all finer-grained sediment from the stream channel and immediate banks will remove sources of contamination, however the placement of 12 – 24 inches of rock material will provide an additional level or protection against migration of any fine materials downstream.

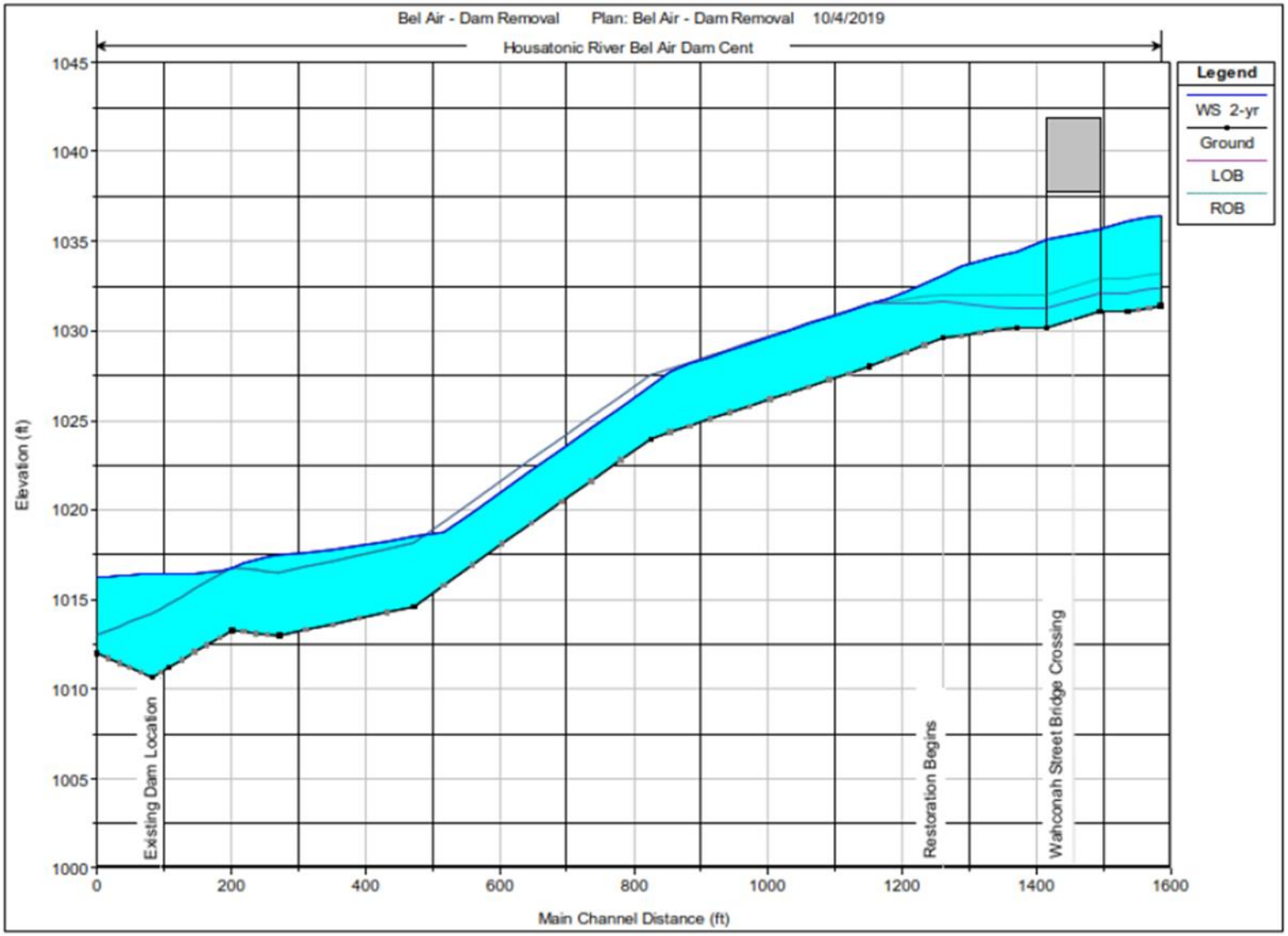
The removal is the Bel Air Dam will significantly lower the water surface elevation between Wahconah Street bridge and the location of the removed dam. Based on the hydraulic analysis completed for the development of the channel restoration design, the dam removal will lower the water surface elevation upstream of the Wahconah Street bridge by approximately 2.0 feet during the 100-year flood event. Along the reach between the bridge and the location of the removed dam, the water surface elevation in the restored channel will be lowered by between 1.1 feet immediately downstream of the bridge, and 16.8 feet at the location of the removed dam. Due to the very small storage capacity provided by Bel Pond, the dam does not affect the flow rate during flood events. As a result, during the 100-year flood event, the water surface elevation downstream of the removed dam will not be impacted by the removal of the dam. The Bel Dam Removal Project will not adversely impact flooding in relation to the built environment.

A subsurface investigation was conducted at Bel Air Dam to assess the subsurface conditions at the site with a particular interest in the existing underwater sediments that will remain at the stream channel banks once the dam is removed. The subsurface investigation was performed by Geologic Earth Exploration of Norfolk, MA between February 14 and 19, 2024. A total of eighteen borings were performed and nine vibracores were collected from a small barge within the impoundment. The findings indicate that weak organic silts are present just below the existing mudline of the channel and extend to depths varying between 8 and 17 feet below the bottom of the channel. Laboratory testing was performed on the sediment samples to obtain strength properties for analysis. The current proposed configurations of the channel bank slopes were analyzed for slope stability and veneer stability (in areas where surficial geotextile treatments are proposed) using engineering software and accepted geosynthetic theory. The analyses results show that the proposed configurations have acceptable factors of safety, therefore confirming the proposed banks will be stable under the anticipated conditions.

Final construction activities will include the stabilization of remaining exposed sediment with a native seed mix and erosion control blankets. In two areas where steep slopes prevail, contaminated sediments will be entirely removed along the stream channel, allowing the installation of “Bio-D” blocks planted with live woody stakes. In addition, three areas that will be disturbed for construction access will be restored with native woody plantings, including the areas at the northwestern and northeastern ends of the project near the discharge of the existing stream below Wahconah Street and the area near the existing dam, as depicted on the project plans. Three drainage channels from the stormwater outfalls on the west side of the

impoundment (Wahconah Street) will be constructed and armored with stone to withstand potentially high velocity of water discharging from the outfalls during large storm events.

Figure 1. 2-Year Hydraulic Profile after Full Dam Removal



4.0 Sediment Management

The sediment within the inundated areas upstream of Bel Air Dam has been characterized during two sampling events occurring in 2019 and 2021 (**Attachment L**). The sediment sampling results were compared against the MCP Method 1 S-1, RCS-1, and MassDEP published background levels for polycyclic aromatic hydrocarbons (PAHs) and metals in natural soils to assess sediment management options. The results indicated that there are elevated levels of chemical parameters exceeding MCP RCS-1 and RCS-2 reporting limits for chromium (Cr), lead (Pb), arsenic (As), Polycyclic aromatic hydrocarbons (PAH), and Extractable Petroleum Hydrocarbons (EPHs).

4.1 Off-Site Sediment Management

The construction of the new stream channel and adjacent banks is estimated to generate approximately 35,500 cubic yards of excess sediment requiring off-site disposal. Sediment within the stream channel itself will be excavated to refusal. However, existing data does not characterize the denser material below accumulated sediments. Therefore, a mix of small and large rock, which is natural in color. will be placed on the stream channel - both to provide a stable substrate that will not erode and to also to provide an impenetrable barrier above remaining denser material, which will prevent animals burrowing or people digging into the area below the stream channel. The project drawings include the details of the stream substrate material, which will be placed to a depth of 12-inches in the pools and 24-inches in riffle sections. In order to place the stream substrate material, all existing sediment will be excavated to a depth at, or below, denser material (based on sediment sampling conducted to date). It is anticipated that removal of all finer-grained sediment from the stream channel and immediate banks will remove sources of contamination, however, the placement of 12 - 24 inches of rock material will provide an additional level or protection against migration of any fine materials downstream.

As a result of sediment data collected to date, the material excavated to create the new stream channel, banks, and floodplain will be required to be disposed of out-of-state. The table below, **Table 2**, includes potential disposal sites.

Table 2. Sediment Disposal Locations

Vendor	Landfill/Reuse Facility		Type
Green Rock	LaFarge Holcim	Ravena, New York	Beneficial Reuse
Green Rock	Seneca Meadows Landfill	Waterloo, New York	Beneficial Reuse as Alternative Daily Cover
Green Rock	Seneca Medows Landfill	Waterloo, New York	Disposal in Landfill
Waste Management	Turnkey Landfill	Rochester, New Hampshire	Disposal in Landfill
Waste Management	High Acres Landfill	Perinton/Macedon, New York	Disposal in Landfill

4.2 On-Site Sediment Management

After the full dam removal, and subsequent elimination of the impoundment, the lowering of the current water level will result in the exposure of sediment beyond the edge of the stream banks/floodplain. Once exposed sediments in the upland area qualify as soil, under the MCP, the material is then subject to notification requirements to MassDEP. Due to the RC exceedances, a risk assessment screening determined that that the material that will become soil in the future is not suitable for direct exposure to humans or wildlife. Consequently, material remaining outside of the future stream channel will be covered with an impenetrable “cap” consisting of an 8-inch deep geocell layer which will be covered by 12-inches of clean fill. Due to the need to avoid penetration of the cap, woody plantings will not be installed in areas that include the cap; these areas will instead be seeded with a native seed mix and covered with a degradable erosion control blanket. Geotextile fabric would be placed at the interface of the sediments and the geocell as a physical marker.

4.3 Effluent Control and Dewatering

Based on receiving landfill information gathered in 2021, sediment management at the project site will include gravity dewatering to remove free-draining liquids and the addition of a solidification reagent before transportation off site. Removed sediment will either be placed temporarily on the adjacent downstream parcel, or, as noted above, may be managed on-site prior to being loaded onto trucks for out-of-state disposal.

4.3.1 Dewatering – Mechanical Dredge

Passive dewatering of sediments from the mechanical dredge within the site may be allowed provided that the Dredge Contractor has prepared for adequate space for temporary stockpiling

and management of the decant water, solidification reagent, and mixing operation. Operational requirements include but will not be limited to:

- Installation of sediment and erosion controls to clear trees and brush.
- Removal and management of trees and brush for transportation offsite.
- Grading and lining of area set aside for temporary stockpiling of sediment such that decant water can be collected for temporary storage, settling and testing prior to onsite discharge or offsite management.
- Lining should prevent unrestricted percolation of decant water and a finish work surface which allows for use of equipment to enhance dewatering including but not limited methods such as turning, mechanical augers and windrowing may be used to enhance the dewatering process and reduce dewatering time. The base of the area would consist of compacted sub-grade, free of protrusions and lined with non-woven geotextile (8 oz./SY) subject to Engineer approval. A woven coated polyethylene (WCPE) of 20-mil thickness extending ten (10) feet beyond the SMA top of berm will be installed on top of the geotextile liner.
- The maximum amount of time sediments may be stockpiled on site is 48 hours.
- The addition of solidification/stabilization reagents (e.g., Portland cement, Calciment™ or lime kiln dust) may be used to enhance the dewatering process.
- Managed sediments must meet over-the-road requirements for transport and disposal.
- If after allowing 48 hours of dewatering sediment cannot meet requirements, material must be transported to the staging area for further management.
- Decant water would be discharged back into the West Branch of the Housatonic River. Sampling would be done to confirm that the effluent meets the discharge requirements of the US EPA Dewatering and Remediation General permit.

4.3.2 Dewatering – Hydraulic Dredge

Dewatering of hydraulically dredged sediment would take place at the staging area downstream of the dam. The Dredge Contractor shall install an HDPE pipe of 6” minimum diameter to the sediment dewatering area (SDA) where dredge slurry is to be chemically conditioned and dewatered using geotextile tubes. Operational requirements include but will not be limited to:

- Sediment Disposal Area (SDA) Layout: There is an existing concrete pad at the staging area that will be used for laying-out the geotubes. Prior to construction of the SDA, a sump location will be established in an existing low point within the existing dewatering

area. Sump design and location will be determined by the Contractor performing the work and shall be subject to approval by MassDCR and/or their representative. The base of the SDA will consist of graded and compacted subgrade, free of protrusions, and will be lined with a non-woven geotextile (8 oz./SY) subject to Engineer approval. A woven coated polyethylene (WCPE) of 20-mil thickness extending ten (10) feet beyond the SMA top of berm will be installed on top of the geotextile liner.

- Polymer Delivery System: The flocculant will be introduced to the dredge discharge line prior to the geotextile tube manifold system to expedite containment and consolidation of the sediment while simultaneously releasing low turbidity filtrate from the tubes. Main components of the polymer make-down system comprise of an activation chamber, dilution water chamber, NEMA 4X control system, and a neat polymer pump. A VeloBlend Model VM-30P-6000-Rp-1-A-2 Liquid Polymer Blending System, with polymer flow rates ranging from 1.5 to 30 gallons per hour (GPH) and dilution water flow rates ranging from 60 to 6000 GPH or comparable will be used for flocculant injection or. similar for Engineer review and approval. The system shall consist of pumps and make-down delivery systems, hoses, piping, valves, fittings and necessary injection port appurtenances to deliver and control the necessary chemical conditioning program to the dredge discharge pipeline prior to the geotextile tubes. Dewatering polymers (coagulants, and flocculants), water treatment system and chemicals, fuels, pumps, and generators shall be placed in secondary containment. A clean water intake pump shall be installed to pull fresh water from the river and discharge it to the flocculant make-down unit. This water should be managed by a HH125C pump or equivalent.
- Geotextile Tube System: Slurry that has been mixed with the polymers will be conveyed to the header pipe and into geotextile tubes that have been opened for flow. Geotextile tube filling shall be performed as per the manufacturer’s recommendations. The tubes shall not be filled higher than the manufacturer’s recommended height. Other height and width specifications may be required by the Engineer to assure sliding, overturning, bearing capacity, and global stability of the tube system. The Sediment Dewatering Contractor shall submit a plan for filling of the geotextile tube with dredged material to the Engineer for approval.
- Decant water would be discharged back into the West Branch of the Housatonic River. Sampling would be done to confirm that the effluent meets the discharge requirements of the US EPA Dewatering and Remediation General permit.

4.0 Alternative Analysis Summary

4.1 No Action

The no action alternative would result in no removal or modification to the existing Bel Air Dam. The dam is currently in unsafe condition and structurally deficient with deteriorating infrastructure and observed seepage. Based on a Phase II Dam Inspection, the dam has been determined to be Unsafe. The dam is classified as a High Hazard Potential Dam (Class 1) in accordance with Massachusetts Dam Safety Regulations (*302 CMR 10.00*). The dam must comply with the Massachusetts Dam Safety Regulations, which require that the dam safely pass the current safety design flood (SDF), which is the FEMA 100-year flood. Under current conditions, Bel Air dam cannot pass the 100-year flood. For these reasons, the no-action alternative was dismissed.

4.2 Repair

The repair alternative would involve restoring the dam to meet the latest Massachusetts Dam Safety Regulations (*302 CMR 10.00*) design parameters. The recommended repairs, discussed in the Phase II Report, would involve lengthening the principal spillway to span 125 linear feet in order to pass the SDF. Approximately 34 linear feet of new spillway and a new training wall would be constructed along the right side of the dam as part of the spillway lengthening. A new mass concrete section would be added to the downstream side of the existing dam to address stability deficiencies. A geomembrane liner was proposed for the upstream face of the existing stone masonry dam to mitigate seepage. Ground improvements, such as soil grouting were recommended along the remaining portions of the right embankment in order to address deficiencies in slope stability.

Sediment removal quantities necessary under a repair alternative would range from approximately 6,500 cubic yards which would be limited to the construction area needed to implement dam repairs, to 40,000 cubic yards, which would involve the removal of upstream sediment that exceeds Massachusetts Contingency Plan Method S-1 and RCS-1 soil standards.

This alternative would involve ongoing operation and maintenance (O&M) costs of a High Hazard dam. Estimated O&M costs ranged from approximately $4,500 to $9,500 per year. Construction costs ranged from $8.4 million to $16.3 million for this alternative, depending on the dredging extent.

MassDCR ODS has consulted extensively with the City of Pittsfield regarding Bel Air Dam, and the City does not wish to take long-term ownership of the dam and implement required ongoing operation and maintenance tasks, due to costs and lack of municipal staffing. Therefore, the repair alternative was dismissed.

4.3 Partial Removal

The partial removal of the dam would reduce the height and storage capacity of the spillway, resulting in the dam being reclassified as non-jurisdictional by the Office of Dam Safety (ODS). As defined in the Dam Safety Regulations, a non-jurisdictional dam must be under 6 feet in height or have a storage capacity of less than 15 acre-feet. This alternative was eliminated from consideration after consultation with the ODS and based on the lack of public interest in keeping the impoundment. The costs for this alternative have not been evaluated.

4.4 Full Removal

The preferred and selected alternative for the Bel Air Dam is a full dam removal. The full removal alternative would consist of the demolition of the existing dam structure to eliminate the impoundment. A stream channel would be reconstructed and approximately 35,500 cubic yards of contaminated sediment would be dredged. This alternative is preferred as there would be no ongoing costs for the operation and maintenance of the dam and the City of Pittsfield and residents expressed no interest in keeping the impoundment or owning the dam. The full removal will have ecological benefits of restoring the connectivity the West Branch of the Housatonic River. This alternative will also provide environmental and health benefits from the removal of contaminated sediments within the impoundment and capping of sediments remaining in the future above the stream water level.

5.0 Wetlands Investigation

5.1 Methodology of Wetland Investigation

An off-site wetlands investigation was conducted in addition to on-site wetland delineations. This desktop investigation included the consultation of various sources of information relevant to topography, wetlands, flood plains, rare wetland species, and other sensitive receptors in the vicinity of the proposed project area. Off-site resources consulted included the U.S. Geological Survey (USGS) topographic map, the Federal Emergency Management Agency (FEMA) flood zone maps, the MassDEP wetlands MassGIS data overlay, the Massachusetts Natural Heritage and Endangered Species Program (NHESP) MassGIS overlay for Estimated Habitat of Rare

Wildlife, Priority Habitat of Rare Species, Certified Vernal Pools, and the Areas of Critical Environmental Concern (ACEC) Program MassGIS layer, among others.

In addition to the consultation of existing mapping materials and documents, an AECOM professional wetland scientist (PWS) conducted onsite resource area delineations at the project site June 5-6, and 20-22, 2023 in accordance with Section 404 of the Clean Water Act (*33 CFR 328*); the Corps of Engineers Wetlands Delineation Manual (*Technical Report Y-87-1; ACOE 1987*) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE 2012); the Massachusetts Wetlands Protection Act (WPA) regulations (*310 CMR 10.00*); and MassDEP's publication entitled Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act. Delineation data sheets are provided as **Attachment M**.

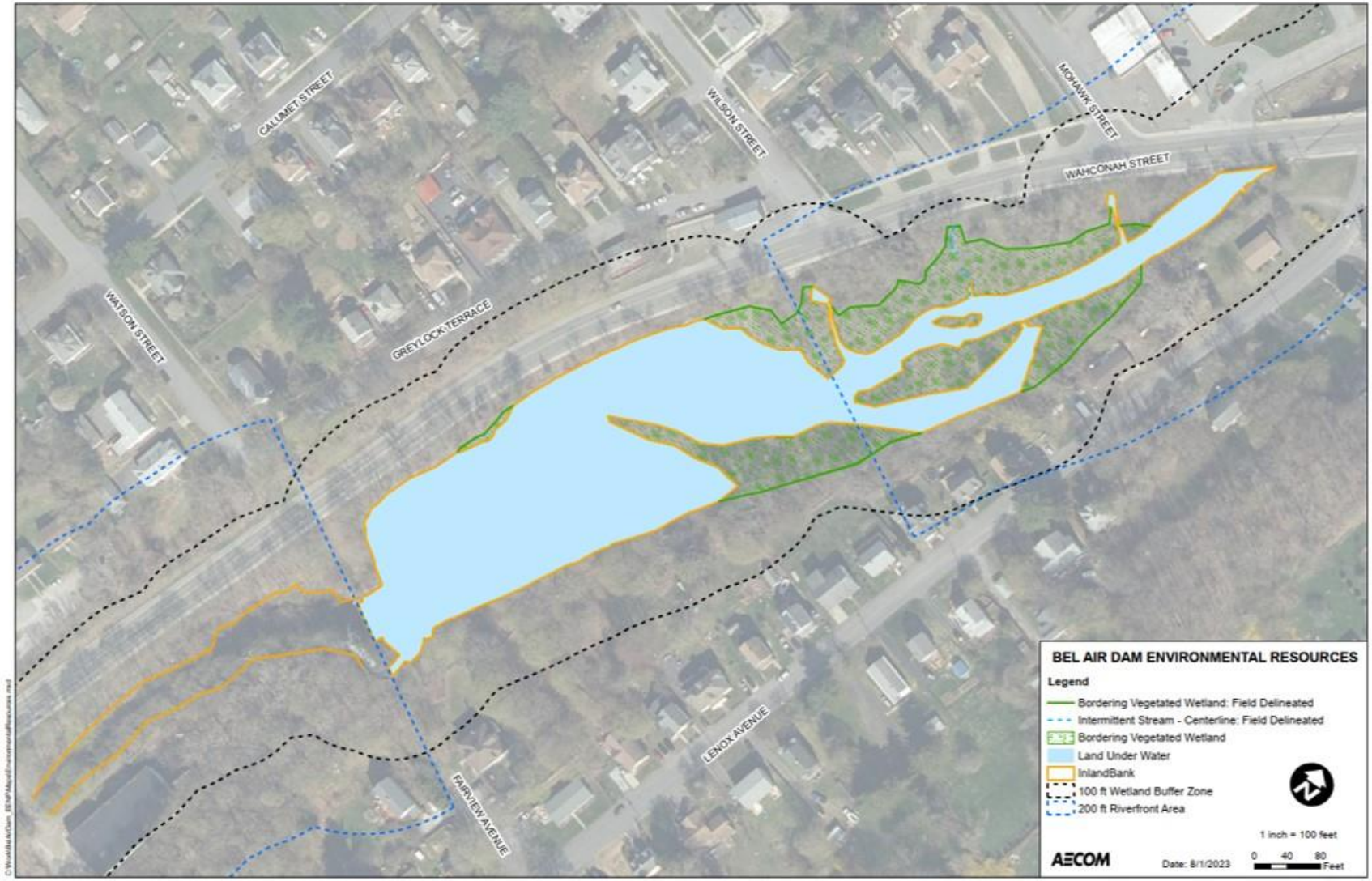
5.2 Findings of Wetland Investigation

Wetland resource areas protected under the Massachusetts Wetlands Protection Act and implementing regulations (*310 CMR 10.00*) that are present at the site include Land Under Water (LUW), Bordering Vegetated Wetlands (BVWs), Bank, 200-foot Riverfront Area, and Bordering Land Subject to Flooding (BLSF). In addition, a 100-foot Buffer Zones to BVW and Bank are present at the site. The boundaries of these resource areas are illustrated on Sheet C-101 in **Attachment J** and on **Figure 2**. The off-site investigation concluded that no portion of the LOW is located within mapped NHESP Habitats, Certified Vernal Pools, or within an ACEC, see **Attachment N**.

5.2.1 Land Under Water

LUW is present within the West Branch of the Housatonic River, upstream of the dam and within the discharge stream. The mean annual flood level was determined using a HEC-HMS model of the watershed that was developed to simulate a range of flood events. These elevations, as well as field confirmation, were used to identify the LUW limits in the project area, as illustrated on Sheet C-101 in **Attachment J.**

Figure 2. Bel Air Dam Environmental Resources



5.2.2 Bordering Vegetated Wetlands

Five BVWs were identified at the project site during an August 2023 site visit, as described below and in the wetland delineation data sheets provided in **Attachment M:**

Wetland W1

The “W1” flagging series includes wetland flag segments W1-001 to W1-003, W1-101 to W1-121, and W1-201 to W1-209 and demarcates the upper boundary of BVW located along the western shore of the West Branch of the Housatonic River. Wetland W1 is a combination of Palustrine Emergent Marsh (PEM) and Palustrine Forested Wetland (PFO). Dominant vegetation includes box elder (*Acer negundo*; FAC) and American elm (*Ulmus americana*; FACW) in the tree stratum, box elder in the sapling/shrub stratum, and spotted Joe Pye weed (*Eutrochium maculatum*; OBL), giant goldenrod (*Solidago gigantea*; FACW), and moneywort (*Lysimachia nummularia*; FACW) in the herb stratum.

Wetland W2

The “W2” flagging series includes wetland flag segment W2-001 to W2-008 and demarcates the upper boundary of a narrow BVW fringe located along the western shore of the dam impoundment. The downgradient boundary of this wetland fringe is demarcated by a discernible break in slope as delineated by Bank segment B1-101 to B1-108. Wetland W2 is a PEM dominated by herbaceous vegetation. Herbaceous vegetation present includes a mix of giant goldenrod, creeping buttercup (*Ranunculus repens*; FAC), a variety of sedges (*Carex* spp.), reed canary grass (*Phalaris arundinacea*; FACW), among other species.

Wetland W3

The “W3” flagging series includes wetland flag segments W3-001 to W3-007 and demarcates the upper boundary of BVW located along the eastern shore of the West Branch of the Housatonic River. Wetland W3 is a combination of PEM and PFO. Dominant vegetation includes box elder and American elm in the tree stratum, box elder and silky dogwood (*Cornus amomum*; FACW) in the sapling/shrub stratum, and giant goldenrod in the herbaceous stratum.

Wetland W4

The “W4” flagging series includes wetland flag segments W4-001 to W4-007 and demarcates the upper boundary of BVW located along the eastern shore of the West Branch of the Housatonic River. Wetland W4 is a combination of PEM and Palustrine Scrub-Shrub (PSS) wetland. Dominant vegetation includes a few American elm and silver maple (*Acer saccharinum*; FACW) in

the tree stratum, silky dogwood, boxelder, and glossy buckthorn (*Frangula alnus*; FAC) in the sapling/shrub stratum, and Joe Pye weed, fringed loosestrife (*Lysimachia ciliata*; FACW), and giant goldenrod in the herbaceous stratum.

Wetland W5

Wetland W5 is a small, low vegetated island located in the middle of (surrounded by) the West Branch of the Housatonic River. This BVW is a PEM and is bounded on all sides by the upper boundary of Bank demarcated by flagging series B1-501 to B1-511. Wetland W5 is dominated by reed canary grass, with lesser coverages of phragmites (*Phragmites australis*; FACW), forget-me-not (*Myosotis scorpioides*; OBL), and smallspike false nettle (*Boehmeria cylindrica*; OBL), among others.

5.2.3 Bank

Bank is present adjacent to the LUW of the West Branch of the Housatonic River and the discharge channel between the mean annual flood level and the mean annual flow level. As with LUW, estimated mean annual flood level and field conditions were used to identify the limits of Bank as illustrated on the drawings in **Attachment J**. The upper limit of Bank was determined by data regarding water level control at the dam combined with field observations of the transition from primarily vegetated wetland to open water area. At the project site the Bank consists of a steep downstream eastern slope, the western bank is significantly less steep in grade. The upstream slope grades at approximately 2.2:1 (horizontal: vertical), and the downstream slope grades at approximately 1:1 (horizontal: vertical). The upstream toe of the slope is approximately El. 1027.6 feet, and the downstream toe of the slope is approximately El.1013.5 feet.

5.2.4 200-Foot Riverfront Area

The 200-foot riverfront area is found along the stream of the West Branch of the Housatonic River. The area within the LOW for the Project is within 200-Foot Riverfront Area. Within the limits of work, the 200-foot Riverfront Area includes some native and non-native trees and shrubs and remnant stone walls and building foundations.

5.2.5 Bordering Land Subject to Flooding

BLSF coincides with the FEMA 100-year floodplain. The FEMA 100-year flood plain is approximately co-incident with the impoundment upstream and continues downstream parallel to the West Branch of the Housatonic River. Upstream of the dam is El. 1038.0 feet and

downstream of the dam is El. 1020.0 feet.

6.0 Impacts to Resource Areas and Compliance

The resource areas that will be impacted by the proposed removal of Bel Air Dam and its associated construction work are LUW, BVW, Bank, Riverfront Area, and BLSF. Project activities and their associated impacts are categorized and quantified in **Table 3**. The project qualifies for consideration under an Ecological Restoration Project (*310 CMR 10.13*), regarding the removal of the dam to restore the previously existing waterway.

Table 3. Resource Area Impacts

Resource Area	Impacts	Created	Net Permanent Gain/Loss
Land Under Water	135,740 SF of permanent impacts from the impoundment's removal	49,200 SF new stream channel	Loss of 86,540 SF of LUW
Bank	2,600 LF from the impoundment's removal	2,310 LF from the reconstruction of the stream channel	Loss of 290 LF of Bank
Riverfront Area	81,900 SF from construction period impacts	120,000 SF of new Riverfront Area	Gained 202,000 SF of Riverfront Area
Bordering Land Subject to Flooding	41,000 SF from construction period impacts	34,000 SF of new BLSF from the removal of the impoundment	Gained 75,000 SF of BLSF
Bordering Vegetated Wetlands	54,280 SF of permanent impact to BVWs	0 SF	Loss of 54,280 SF of BVW

* All areas are approximate SF=Square Feet; LF=Linear Feet

6.1 Land Under Water

Within the regulated area of LUW, impacts to LUW will occur upstream of the existing spillway. During construction approximately 135,740 square feet of LUW in the Bel Air impoundment will be disturbed. Permanent LUW impacts will occur due to the pool elevation being lowered to approximately El. 1,014 feet-NAVD88. This will be a phased dewatering of one-foot intervals by removing individual courses of rock. With the removal of the existing dam, the impoundment will be eliminated, significantly reducing the LUW area. However, the construction of a stream channel will include 49,200 square feet of new LUW. Therefore, the net loss of LUW will be approximately 86,540 square feet.

Additional impacts to LUW will be from the dredging of 35,500 cubic yards of accumulated contaminated sediment. This one-time dredging event will alter approximately 96,500 square feet of LUW immediately upstream of the existing spillway. This is considered a permanent impact however, there will be no resulting loss of LUW as a result of dredging.

6.2 Bordering Vegetated Wetlands

Five BVWs were identified during onsite delineations, totaling approximately 54,280 square feet. As a result of the removal of the dam and construction of a stream channel, it is anticipated that the BVWs will be eliminated and replaced with another beneficial riparian or upland resource area. Permanent impacts to BVW will be approximately 54,280 square feet.

6.3 Bank

During construction approximately 2,600 linear feet of Bank will be permanently affected due to the removal of the dam and the elimination of the impoundment and approximately 2,310 linear feet of bank will be created as a result of the stream channel restoration. Bank will be stabilized, and native plantings will be installed after the stream channel is constructed. In total there will be a loss of 290 linear feet of bank.

6.4 200-Foot Riverfront Area

The project area is contained within the 200-foot Riverfront Area. Temporary impacts from construction are approximately 81,900 square feet due to the removal of vegetation needed for construction access; excavation and grading will also occur. With the removal of the dam and the subsequent elimination of the impoundment it is anticipated that 202,000 square feet of Riverfront Area will be gained in the project area.

6.5 Bordering Land Subject to Flooding

Temporary impacts from construction are anticipated to be 41,000 square feet. A HEC-RAS Model conducted with and without the dam determined there will be an increase of BLSF once the dam is removed and approximately 75,000 square feet of BLSF will be gained in the project area.

7.0 Compliance with Ecological Restoration Requirements

The text below describes how the Bel Air Dam Removal Project complies with the Massachusetts Wetlands Protection Act Regulations regarding General Eligibility requirements regarding Ecological Restoration Projects (i.e., *310 CMR 10.13(1)*).

(*1) An Ecological Restoration Project shall be permitted by a Restoration Order of Conditions if it meets all of the following eligibility criteria:*

(a) The project is an Ecological Restoration Project as defined in 310 CMR 10.04, is a project type listed in 310 CMR 10.13(2) through (7), and the applicant has submitted a Notice of Intent that meets all applicable requirements of 310 CMR 10.12.

The proposed project is a dam removal project, which is described in *310 CMR 10.13(2).* Mass DCR Office of Dam Safety (ODS) has submitted this Notice of Intent to the Pittsfield Conservation Commission that meets all requirement of *310 CMR 10.12.*

(b) The project will further at least one of the interests identified in M.G.L. c. 131, § 40.

The Bel Air Dam Removal Project furthers the following interests identified in *M.G.L. c. 131, § 40*: flood control, storm damage prevention, prevention of pollution, and the protection of fisheries and wildlife habitat. Removal of the dam will remove a hazard that could lead to substantial downstream storm damage if the dam were to fail. The creation of floodplain habitat adjacent to the restored stream channel will contribute to the flood control interest of the WPA and its implementing regulations. Removal of the accumulated and contaminated sediment will remove a source of pollution. Removal of the dam will allow restoration of the channel, which will contribute to fisheries habitat by improving hydrologic connectivity and water quality. Planting of native species will contribute to enhancing wildlife habitat along the restored stream corridor. This NOI includes the following information to support the determination that the project will further the interests identified above:

- Excerpts of the DCR ODS Phase II investigation report documenting the existing Unsafe condition of the dam (**Attachment D**)
- Excerpts of the Emergency Action Plan identifying the storm damage that would occur if the dam were to fail, (**Attachment F**)
- Calculations regarding flood storage capacity of Bordering Land Subject to Flooding maintained/created (Section 6.5)
- Sediment sampling results documenting the contamination present (**Attachment L**)
- Design drawings illustrating proposed stream channel layout, profile, and cross-sections as well as details regarding post-construction native plantings, construction phasing, water management, and sediment/erosion control Best Management Practices (BMPs) (**Attachment J**)
- Hydrologic and Hydraulic model results documenting current flows as well as anticipated flows after dam removal and stream restoration (Section 3.4)
- Geotechnical data regarding stability of designed stream channel banks (Section 3.4)

(c) The project will not have any short-term or long-term adverse effect, as identified by the procedures established by 310 CMR 10.11, on specified habitat sites of Rare Species located within the Resource Areas that may be affected by the project or will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

This project will not have any short or long-term adverse effects as there are no identified Rare Species at the project site and the project location is not within Estimated

or Priority Habitat as identified by the Natural Heritage and Endangered Species Program. This was confirmed by doing an offsite investigation using the MassGIS online Map Viewer tool and confirmed via email with NHESP staff (**Attachment N**).

(d) To the maximum extent practicable, the project will:

1. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals;

The Bel Air Dam Removal project will avoid adverse impacts to Resource Areas wherever possible by following best management practices and restoring habitats post-construction. This NOI includes design drawings illustrating proposed elevations and stream configuration as well as plantings and construction period stormwater management BMPs (**Attachment J**).

2. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals; and

The Bel Air Dam Removal project will avoid adverse impacts to Resource Areas wherever possible by following best management practices and restoring habitats post-construction. The NOI includes design drawings illustrating proposed elevations and stream configuration as well as plantings and construction period stormwater management BMPs (**Attachment J**).

3. *utilize best management practices such as erosion and siltation controls and proper construction sequencing to prevent and minimize adverse construction impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40.*

An erosion and sedimentation control program will be implemented during the pre-construction and construction phases to minimize impacts to Resource Areas on the project site (Section 8.0). This NOI includes design drawings illustrating details of construction period sediment and erosion controls, such as silt socks, turbidity curtains, sedimentation basins, and other stormwater management BMPs. The project will seek approval under the US EPA Construction General Permit, and a copy of the Stormwater Pollution Prevention Plan (SWPPP) will be provided to the Pittsfield Conservation Commission.

(e) *The project will not have significant adverse effects on the interests of flood control and storm damage prevention in relation to the built environment (i.e., the project will not result in a significant increase in flooding or storm damage affecting buildings, wells, septic systems, roads or other human-made structures or infrastructure).*

The proposed project will not have significant adverse effects on the interest of flood control and storm damage prevention, in relation to the built environment. If the Bel Air Dam were to fail, downstream properties and infrastructure would be immediately affected and experience significant damage. The NOI includes the following to support the conclusion that there will be no adverse effect on these interests:

- Excerpts of the DCR ODS Phase II investigation report documenting the existing Unsafe condition of the dam (**Attachment D**)
- Excerpts of the Emergency Action Plan identifying the storm damage that would occur if the dam were to fail, (**Attachment F**)
- Calculations regarding flood storage capacity of Bordering Land Subject to Flooding maintained/created (Section 6.5)
- Hydrologic and Hydraulic model results documenting current flows as well as anticipated flows after dam removal and stream restoration (Section 3.4)

(f) *If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a Water Quality Certification issued by the Department in accordance with 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth.*

The proposed project will involve dredging over 100 cubic yards of sediment. As a result, this project has submitted a 401 Water Quality Certification on June 14, 2024, to MassDEP. The issued Certificate will be submitted to the Pittsfield Conservation Commission when available.

(g) *The project will not substantially reduce the capacity of a Resource Area to serve the habitat functions identified in 310 CMR 10.60(2). A project will be presumed to meet this eligibility criteria if the project as proposed in the Notice of Intent will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters, and by the Division of Fisheries and Wildlife for inland waters in accordance with 310 CMR 10.11(3) through (5). As set forth in 310 CMR 10.12(3), a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.*

The proposed project will not substantially reduce the capacity of a resource area to serve the habitat functions identified in *310 CMR 10.60(2).* No time of year restrictions have been identified in accordance with *310 CMR 10.11(3) through (5)* (**Attachment O**). The proposed project meets the requirement of *310 CMR 10.12(1) and (2)* is exempt from the requirement to perform a wildlife habitat evaluation in accordance with *310 CMR 10.60.*

(h) *If the Ecological Restoration Project involves work on a stream crossing, the stream crossing has been designed in accordance with 310 CMR 10.24(10) for work in coastal Effective 10/24/2014 310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION resource areas and 310 CMR 10.53(8) for work in inland resource areas, as applicable.*

The proposed Bel Air Dam Removal project will not involve work on a stream crossing.

(i) *The Ecological Restoration Project will not result in a discharge of dredged or fill material within 400 feet of the high water mark of a Class A surface water (exclusive of its tributaries) unless the project is conducted by a public water system under 310 CMR 22.00: Drinking Water or a public agency or authority for the maintenance or repair of existing public roads or railways in accordance with 314 CMR 4.06(1)(d)1.*

The proposed project will not result in a discharge of dredged or fill material within 400 feet of the high water mark of a Class A surface water. All dredged material will be temporarily stored on-site before being disposed of out-of-state.

j) *The Ecological Restoration Project will not result in a discharge of dredged or fill material to a vernal pool certified by the Division of Fisheries and Wildlife.*

The discharge of dredged or fill material will not occur in a certified vernal pool, as there are no vernal pools certified by the Division of Fisheries and Wildlife at the project site.

(k) The Ecological Restoration Project will not result in a point source discharge to an Outstanding Resource Water.

The proposed Bel Air Dam Removal will not create a point source discharge, nor is the Bel Air impoundment classified as an Outstanding Resource Water.

7.1 Compliance with Ecological Restoration Dam Removal Project

The text below describes how the Bel Air Dam Removal Project complies with the MA WPA Regulations regarding Dam Removal projects related to Ecological Restoration Projects (i.e., *310 CMR 10.13(2)):*

(2) Additional Eligibility Criteria for Dam Removal Projects. If the Ecological Restoration Project is a dam removal project, the project shall be presumed to meet the eligibility criteria set forth in 310 CMR 10.13(1)(d), if the project is consistent with the Department's guidance entitled Dam Removal and the Wetlands Regulations, dated December 2007. If the Ecological Restoration Project is a dam removal project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

(a) The project will not involve the removal of a dam that was constructed or is managed for flood control by a municipal, state or federal agency

The Bel Air dam is not a flood control dam.

(b) The project will not adversely impact public water supply wells or water withdrawals permitted or registered under the Water Management Act, M.G.L. c. 21G, and 310 CMR 36.00: Massachusetts Water Resources Management Program within the reach of the stream impacted by the impoundment.

The Bel Air Dam does not impound a water supply. The dam removal will have no impact on the City of Pittsfield water supply, which is related to other water sources in the City and not related to any impoundments or wells located upstream of the Bel Air Dam on Wahconah Street.

(c) The project will not adversely impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.

The Bel Air Dam removal will have no impact on private wells. Based on a review of City of Pittsfield GIS data, there are no private wells located upstream of the Bel Air Dam.

(d) The project provides for the removal of the full vertical extent of the dam such that no remnant of the dam will remain at or below the streambed as determined prior to commencement of the dam removal project, or if such determination cannot be made at that time, as determined during construction of the project.

The proposed project will fully remove the entire vertical extent of the Bel Air Dam.

(e) The project provides for the removal of enough of the horizontal extent of the dam such that after removal no water will be impounded during the 500-year flood event.

The full horizontal extent of the Bel Air Dam will be removed so that no water will be impounded during the 500-year flood event.

(f) The project will not involve a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license.

This project does not involve a hydroelectric facility. The Bel Air Dam was a formerly used for manufacturing and is no longer being used for that purpose.

(g) The applicant has obtained from the Department of Conservation and Recreation Office of Dam Safety a written determination that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00: Dam Safety, a written determination that the dam removal does not require a permit under 302 CMR 10.00: Dam Safety or a permit authorizing the dam removal in accordance with 302 CMR 10.00: Dam Safety has been issued.

The Department of Conservation and Recreation (DCR) Office of Dam Safety (ODS) has determined that the Bel Air Dam is under jurisdiction of the Office of Dam Safety and will require a Chapter 253 Permit. DCR ODS intends to issue a permit for the dam repair, and this will be submitted to the Pittsfield Conservation Commission when available.

(h) If the project is exempt from the requirement to obtain a license or permit under 310 CMR 9.05(3)(n), the project will not have an adverse effect on navigation or on any docks, piers or boat ramps authorized under 310 CMR 9.00: Waterways. (3) Additional Eligibility Criteria for Freshwater Stream Crossing Repair and Replacement.

Section *310 CMR 9.05(3)* only includes subsection a through m. However, the proposed project is not exempt from the requirement to obtain a Chapter 91 license. A pre-application meeting has been held with MassDEP Waterways regarding the requirements of the application and the Chapter 91 license is anticipated to be submitted July 2024. The project will not have an adverse effect on navigation or on any docks, piers, or boat ramps.

8.0 Mitigation and Minimization of Adverse Impacts

To the maximum extent possible the project will avoid and minimize impacts to Resource Areas where is does not impede the project's ecological restoration goals, and the project will utilize best management practices to prevent and minimize adverse construction period impacts.

While the removal of the dam will require a significant amount of dredging and construction, it is ultimately a mitigation effort in and of itself. The removal of the Bel Air Dam will restore the physical, chemical, and biological integrity of the West Branch of the Housatonic River and its associated riparian habitat; there will be a net increase in aquatic resource functions as a result of the dam removal due to the restoration of hydrologic connectivity for fish habitat and passage, removal and/or capping of sediments with elevated chemical constituents, and removal of invasive plant species present at the site. As a result of these improvements, water quality will improve.

8.1 Erosion and Sediment Controls

Construction period impacts to the West Branch of the Housatonic River will be minimized through the use of erosion and sedimentation controls. Erosion control barriers such as silt fences, and straw bales will be implemented. Additionally, erosion-control blankets will be installed on the cleared embankment and if dewatering occurs outside of the concrete pad in the staging area, then polyethylene sheeting will be installed to line the area used to stockpiled material. During construction, a temporary cofferdam will be installed upstream of the existing spillway, inside of the proposed limit of work, to by-pass flow around the work area.

Measures will be taken to control turbidity during project activities. Silt curtains will be used around any dredging occurring under wet conditions, and the work area to be surrounded by sediment and erosion controls for any dredging occurring under dry conditions. A flow by-pass system would be installed to divert flowing water away from active dredge areas. This would allow for the flow to be by-passed around the active dredge areas at the project site to minimize the potential for sediment re-suspension or turbidity. The selected flow diversion or bypass pump must be able to handle a minimum of 80% of the daily flow or 20 cubic feet per second (10,000 gallons per minute). Any turbidity generated during this activity would be addressed through the use of a settling basin or frac tanks. During deep excavation events, water would be excluded from the excavation area. If excessive turbidity is produced, a small diameter (2-inch or larger) pump can be used to pump water to the channel or to a filter bag to remove suspended fine materials. If material is collected in filter bags, it would be added to the sediment stockpile for sampling and disposal.

Temporary devices and structures to control erosion and sedimentation in and around the site will be properly maintained and removed and properly disposed of as soon as the site is stabilized following restoration. Filter socks will be inspected weekly and after each runoff event. Sediment will be removed and accumulated sediment over 0.5-inches above ground height of the barrier will be appropriately disposed of. Turbidity curtains will be installed prior to the start of fill, dredge, and excavation activities. If river conditions allow, the turbidity curtains will enclose the entire dredge area and swing radius of the mechanical excavation and hydraulic dredge head at the transloading area. Any sediment collected by these devices will be removed and placed in an upland location in a manner that prevents its erosion and transport to wetlands or waterways or disposed of off-site. Areas cleared of vegetation for construction access will be revegetated with native plants through a combination of seeding and shrub/tree planting.

8.2 General Construction Procedures

General construction safety procedures will be followed to minimize the potential for events which could result in spills, releases, or other environmental damage. During construction, work locations will be secured to prevent unauthorized entry. Supplemental signs, construction barriers, etc. will be used as necessary to provide safety to construction workers during the construction process in accordance with OSHA and other applicable regulations. Waste material, debris, and trash will be cleaned from the work site at the end of each day and placed

in trash barrels and/or dumpsters, which will be disposed of off-site. Dumping of spoils material, waste, or other debris into wetland resource areas and/or buffer zones will not be allowed.

Emissions that exceed national or state air quality standards are not expected, however short-term impacts to air quality in the project area may occur. Impacts may be due to the temporary operation of heavy machinery associated with construction activities. Short-term impacts to air quality could occur due to stockpiling and on-site management of contaminated sediments before transport out-of-state for final disposal. Best management practices such as reducing idling times of construction vehicles, watering exposed sediment, and continuous air quality monitoring will be implemented during construction. If air exceedances of chemical constituents in the sediment are detected, then construction activities will halt while measures are implemented to assess and address the exceedances.

Short-term impacts to traffic on the project area roads during construction would be minimal. Increased activity of the project site could temporarily disrupt local vehicle and pedestrian traffic on Wahconah Street due to the presence of construction equipment traveling on the street and the potential need for a lane closure. This impact will be mitigated through the preparation of a Traffic and Pedestrian Management Plan by the contractor and coordinated with the City of Pittsfield.

8.3 Invasive Species

The area within and adjacent to the existing impoundment includes non-native fish and vegetation species. During wetland delineation work at the site, non-native carp were observed within the impoundment and the following invasive plant species were noted: multiflora rose (*Rosa multiflora*), common barberry (*Berberis thunbergia*), Norway maple (*Acer platanoides*), common buckthorn (*Rhamnus cathartica*), garlic mustard (*Allaria petioloata*), dames rocket (*Hesperis matronalis*), moneywort (*Lysimachia nummularia*), gill-over-the-ground (*Glechoma hederacea*), oriental bittersweet (*Celastrus orbiculatus*), reed canary-grass (*Phalaris arundinacea*), phragmites (*Phragmites australis*), true forget-me-not (*Myosotis scorpioides*), creeping buttercup (*Ranunculus repens*), Tatarian honeysuckle (*Lonicera tatarica*), and celandine (*Chelidonium majus*).

Restoring the hydrologic connectivity of this segment of the West Branch of the Housatonic River will improve water quality, which will allow native fish species to compete against the non-native carp. In addition, the work would remove the numerous invasive plant species and install

native species – see the attached *Invasive Species Management Plan* (**Attachment P**). Due to the need for a sediment cap in many portions of the site, it will not be possible to plant woody species everywhere, however live willow (*Salix* spp) stakes will be installed in the two areas where sediment will be removed and replaced along with a “Bio-D” toe treatment (refer to Drawings). The areas of the cap will be seeded with a fast-growing native seed mix similar to New England Wetland Plants New England Conservation/Wildlife Mix, which will provide erosion control as well as valuable wildlife habitat. The areas at the far northwestern and northeastern ends of the site as well as the area near the existing dam will be planted with native trees and shrubs in addition to a native seed mix (refer to Drawings), since this area does not include sediments with elevated chemical constituents. A mix of native trees and shrubs will be re-planted in this area, including black cherry (*Prunus serotina*), box elder maple (*Acer negundo),* speckled alder (*Alnus incana*) and silky dogwood (*Cornus amomum*). Revegetation the area with native species will improve wildlife habitat value and aesthetics and help to mitigate the loss of LUW at the site.

9.0 Summary

The MassDCR, Office of Dam Safety is proposing the removal of Bel Air Dam located in Pittsfield, Massachusetts. The dam has been deemed hazardous and requires action in order to be compliant with the Dam Safety Regulations. Removal is suggested to mitigate public and environmental health risks. Proposed construction and redevelopment will impact LUW, BVW, Bank, Riverfront Area, and BLSF. Mitigation methods will be implemented during construction to prevent any unintentional effects on nearby environmental resources.

The MassDCR, Office of Dam Safety respectfully requests that the Pittsfield Conservation Commissions find the measures described above adequately protective of the interests identified in the WPA and issue Orders of Conditions approving the work described in this NOI and as shown on the accompanying plans.

10.0 References

AECOM, February 2020*. Bel Air Dam (MA01061) Phase II Investigation and Alternatives Analysis Evaluation Report*. Prepared for Massachusetts Department of Conservation and Recreation, Office of Dam Safety.

Chaplin, Jeffery J., 2005. Development of Regional Curves Relating Bankfull Channel Geometry and Discharge to Drainage Area for Streams in Pennsylvania and Selected Areas of Maryland: U.S Geological Survey Scientific Investigations Report 200-5147, 34 p.

Leopold, L. B., Wolman, M. G., and Miller, J. P, 1964. Fluvial processes in geomorphology. San Francisco, Calif., W.H. Freeman and Co.

Massachusetts Department of Conservation and Recreation, Office of Dam Safety, (MassDCR ODS) 2017. *Emergency Action Plan* for Bel Air Dam.

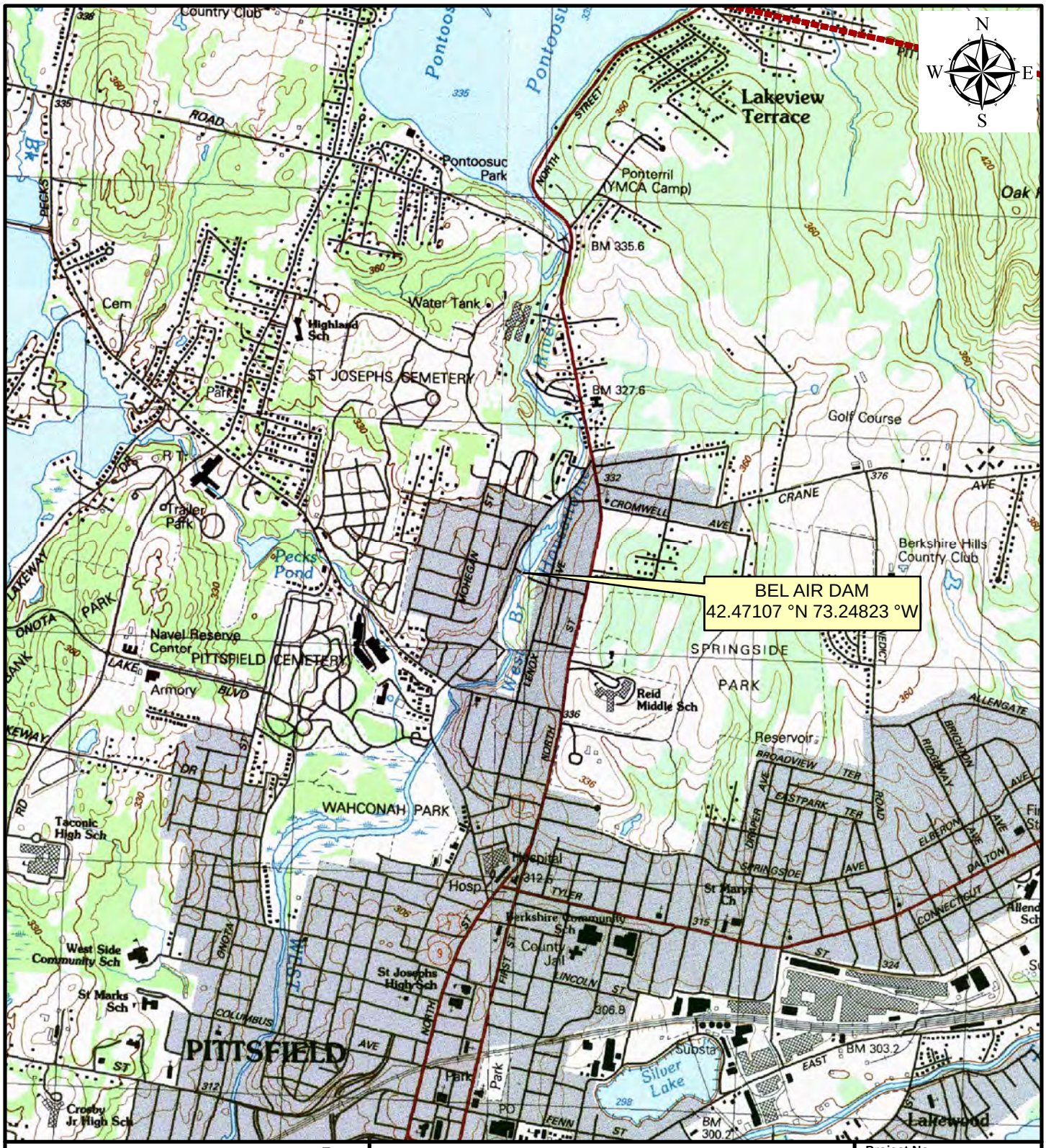
River Management Program, Vermont Department of Environmental Conservation, 2006. Vermont Regional Hydraulic Geometry Curves.

TRC Environmental Corporation, 2010. Evaluation of Remedial Options 370 Wahconah Street, Pittsfield, Massachusetts. Memorandum to City of Pittsfield.

Westergard, B.E. Mulvill, C.I. Ernst, S.G. and Baldigo, B.P, 2005. Regional Equations for Bankfull Discharge and Channel Characteristics in New York State-Hydrologic Region 5 in Central New York: U.S. Geological Survey Scientific Investigations Report 2004-5

Attachment B

Locus Map



LOCUS MAP

Bel Air Dam
NID# MA01061
Pittsfield, Massachusetts

BASE MAP: USGS Topographic Map
PITTSFIELD EAST 1988 AND PITTSFIELD WEST 1988

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

Project No:	01.0018802.42
Drawn by:	PJS
Checked by:	TEJ
Date:	JUNE 2015
Figure No:	1

Attachment C
Abutter Information

LIST OF ABUTTERS

JULY 17, 2024

APPLICANT: JAMES MCGRATH

OWNERS: CITY OF PITTSFIELD MISCELLANEOUS

LOCATION: WAHCONAH ST (H13-0006-020)

LIST OF ABUTTERS: I CERTIFY THAT THE ATTACHED LIST CONTAINS THE NAMES AND ADDRESSES OF THE ABUTTERS AND THE OWNERS OF LAND NEXT TO AND ADJOINING THE LAND OF THE ABUTTERS TO THE PROPERTY COVERED BY THIS APPLICATION.

MEMBER – BOARD OF ASSESSORS Emily A Schilling

Addr	Address Street	ID	Owner 1
	WAHCONAH ST	H120012021	HOLLISTER J BARRETT
98	GREYLOCK TER	H130005002	SMARGIE CHRISTOPHER E
1	WILSON ST	H130005003	PEASLEE SHANE A 1/2@
400	WAHCONAH ST	H130006001	FOUR HUNDRED WAHCONAH LLC
55	FAIRVIEW AVE	H130006003	BAILLARGEON ROBERT G JR
	FAIRVIEW AVE	H130006004	CHUNG THIEU
54	FAIRVIEW AVE	H130006005	CHUNG THIEU
293	LENOX AVE	H130006008	GUERRERO LOUIS R
297	LENOX AVE	H130006009	J REALTY TRUST
299	LENOX AVE	H130006010	GAUDETTE MICHAEL J
305	LENOX AVE	H130006011	KOPKA NICOLE L
311	LENOX AVE	H130006012	GILES NATHAN T
315	LENOX AVE	H130006013	HARRIS EVERETT E E/O
317	LENOX AVE	H130006014	MCCARRON MATTHEW
323	LENOX AVE	H130006015	BERKSHIRE HOME RENTALS LLC
329	LENOX AVE	H130006016	POLIDORO CINDY M
331	LENOX AVE	H130006017	SUPPLE THANOM
339	LENOX AVE	H130006018	DEZIECK KEITH
341	LENOX AVE	H130006019	CRENNAN RON E/O T/L
349	LENOX AVE	H130006022	BUTTERFIELD JOSEPH D
	MOHAWK ST	H130020001	VETERANS HOUSING AUTHORITY
501	WAHCONAH ST	H130020002	OUIMET RONALD N
483	WAHCONAH ST	H130022007	LAPOINTE CLIFFORD A E/O
487	WAHCONAH ST	H130022008	LIN ALLEN
491	WAHCONAH ST	H130022009	BEHANZIN KOTTI ROLAND
495	WAHCONAH ST	H130022010	QUINN NOMINEE TRUST
	WAHCONAH ST	H130022011	VETERANS HOUSING AUTHORITY

Owner 2	Owner Address	Owner City	Owne
	51 HOLMES RD	PITTSFIELD	MA
	98 GREYLOCK TER	PITTSFIELD	MA
PEASLEE ALEXANDER S 1/2@	11 KEELER ST	PITTSFIELD	MA
	82 WENDELL AVE #100	PITTSFIELD	MA
REILLY-BAILLARGEON KAREN ANNE	55 FAIRVIEW AVE	PITTSFIELD	MA
NGO MINH CHIEU H&W	56 FAIRVIEW AVE	PITTSFIELD	MA
NGO MINH CHEIU H&W	56 FAIRVIEW AVE	PITTSFIELD	MA
GUERRERO LOIS M	293 LENOX AVE	PITTSFIELD	MA
	PO BOX 1	DALTON	MA
GAUDETTE TINA M	301 LENOX AVE	PITTSFIELD	MA
	305 LENOX AVE	PITTSFIELD	MA
GILES TISHA R	311 LENOX AVE	PITTSFIELD	MA
HARRIS MARTHA R	315 LENOX AVE	PITTSFIELD	MA
MCCARRON JESSICA	317 LENOX AVE	PITTSFIELD	MA
	6581 SOUTH COOK WAY	CENTENNIAL	CO
	72 HOWE RD	PITTSFIELD	MA
SUPPLE ROBERT	47 SEYMOUR ST	PITTSFIELD	MA
	339 LENOX AVE	PITTSFIELD	MA
CRENNAN ARNOLD R	319 FENN ST-#2	PITTSFIELD	MA
	349 LENOX AVE	PITTSFIELD	MA
%PITTSFIELD HOUSING AUTHORITY	65 COLUMBUS AVE	PITTSFIELD	MA
	194 LANESBORO RD	CHESHIRE	MA
LAPOINTE DORIS T	485 WAHCONAH ST	PITTSFIELD	MA
	1623 THIRD AVE #38J	NEW YORK	NY
	491 WAHCONAH ST	PITTSFIELD	MA
DAVID J SHUFELT TR	P O BOX 606	PITTSFIELD	MA
%PITTSFIELD HOUSING AUTHORITY	65 COLUMBUS AVE	PITTSFIELD	MA

Owner Zip
01201
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01201
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01201
01201
01201
01226
01201
01201
01201
01201
01201
80121
01201
01201
01201
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01201

Attachment D
Excerpt from Phase II Report

AECOM Imagine it. Delivered.

FINAL DRAFT
Bel Air Dam (MA01061)
Phase II Investigation and Alternatives Analysis Evaluation Report

Massachusetts Department of Conservation and Recreation
Office of Dam Safety, Dam Maintenance and Repair Unit

February 2020

Prepared for:

Massachusetts Department of Conservation and Recreation
Office of Dam Safety, Dam Maintenance and Repair Unit
251 Causeway Street, Suite 600
Boston, MA 02114-2119

Prepared by:

AECOM
250 Apollo Drive
Chelmsford, MA 01824
aecom.com

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Figures

Tables

Appendices

Executive Summary

The Department of Conservation and Recreation Office of Dam Safety, Dam Maintenance and Repair Unit (Office of Dam Safety) retained AECOM to prepare a Phase II Investigation and Alternatives Analysis Evaluation Report for the Bel Air Dam (MA01061). The purpose of the report is to investigate the structural integrity of the dam and to evaluate alternatives for complete repair, full removal, and partial removal.

The Bel Air Dam is located in the City of Pittsfield in Berkshire County, Massachusetts, and impounds the West Branch of the Housatonic River, approximately 1.1 miles downstream of Pontoosuc Lake. The West Branch watershed is approximately 22.8 square miles at the Bel Air Dam site. The dam is a combined earthen embankment, stone masonry, and concrete structure with a maximum structural height of approximately 26.5 feet. The reported maximum impoundment storage capacity is 56 acre-feet, although sediment accumulation has reduced this capacity. The dam is classified as a HIGH (Class I) Hazard Potential dam in accordance with Massachusetts Dam Safety Regulations (302 CMR 10) (Dam Safety Regulations). Based on both height and storage, the dam is categorized as an INTERMEDIATE size structure.

The Bel Air Dam investigation was divided into the following parts:

1) Obtain and review available reports, investigations, construction records and data previously submitted pertaining to the dam and appurtenant structures;
2) Perform a condition assessment to evaluate the current condition of the dam;
3) Complete a topographic and bathymetric survey, including sediment sampling and analysis;
4) Perform hydrologic and hydraulic studies to assess the spillway hydraulic adequacy;
5) Perform a subsurface investigation program;
6) Perform stability and seepage analyses of the dam;
7) Perform a structural assessment of the dam; and
8) Develop preliminary designs for the complete repair, full removal, and partial removal of the dam.

AECOM conducted a visual structural and geotechnical condition assessment on May 23, 2019. Consistent with previous inspections, the condition of the dam was found to be UNSAFE and STRUCTURALLY DEFICIENT. The following bullets summarize the findings of the condition assessment, as well as the findings of the hydraulic, sediment, structural and geotechnical analyses.

- **Condition Assessment:**
  - *Earthen embankments on both sides of the dam:* Overgrown with dense trees and shrubs; erosion is observed on both sides near the abutment area; exposed tree roots and depressed areas are noted on the left abutment contact area; downstream slopes exhibit steep earth slopes with no apparent surficial protection.
  - *Masonry retaining walls:* The mortar joints are deteriorated and exhibit areas where voids from missing mortar and/or missing stones exist, as well as areas where vegetation is growing in or adjacent to the stone masonry components and their joints.
  - *Masonry sluiceway and auxiliary spillway:* The mortar joints are deteriorated and exhibit areas where voids from missing mortar and/or missing stones exist, as well as areas where vegetation is growing in or adjacent to the stone masonry components and their joints; seepage is exhibited in many areas across the auxiliary spillway section.

  - *Pedestrian bridge:* Exhibits spalling concrete, exposed rebar, and large collapsed portions of the deck slab; the steel beam and column supports for the concrete deck are rusted and deteriorated; the railing is rusted with missing portions.

- **Hydraulic Compliance:** The dam does not have adequate spillway capacity. Under the existing conditions, it is estimated that the water surface level will reach El. 1,042.4 feet-NAVD88, or approximately 5.8 feet above the top of the dam during the Spillway Design Flood event.
- **Embankment Stability:** Factors such as the steep downstream slope and the loose density of the embankment and native soils are triggering low factors of safety along the right embankment. Analyses indicate that the saturated, native loose silty sands, are susceptible to liquefaction.
- **Structural Stability:** The existing auxiliary spillway section did not meet the required factors of safety for a High Hazard Potential dam.
- **Sediment Quality:** Sample results demonstrate that the impounded sediment may not be suitable for release downstream during construction or reuse on site due to the levels of detected contaminants including metals, polycyclic aromatic hydrocarbons (PAHs), extractable petroleum hydrocarbons (EPHs), polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs).

The above findings were used to develop the preliminary alternative designs and opinion of probable construction costs. As previously stated, the three design alternatives evaluated include complete repair, full removal, and partial removal of the dam. The repair alternative involves restoring the dam to a condition that meets the design parameters of the latest Dam Safety Regulations. The full removal alternative involves the demolition of the existing dam to eliminate the impoundment and restore the hydraulic connectivity of the original waterway. The partial removal alternative would result in the dam being reclassified as non-jurisdictional. As defined in the Dam Safety Regulations, a non-jurisdictional dam would be under 6 feet in height or have a storage capacity less than 15 acre-feet.

To develop planning level costs, AECOM used the American Association of Cost Estimating (AACE) five-level classification system to develop a planning level opinion of construction cost. AACE identifies Class 5 as most preliminary and Class 1 as most accurate and complete. Planning level costs are considered Class 4. The engineering design is typically 1% to 15% complete for a Class 4 estimate. The opinion of construction cost estimate shows that the repair and removal alternatives have similar costs when factoring in the uncertainty in the sediment management approach that will be selected by the stakeholders, and the accuracy of the Class 4 estimate. The environmental benefits of the removal alternative and the cost of ongoing operation and maintenance associated with the repair alternative are not reflected in the construction cost estimate.

Table ES-1 presents a summary of the design evaluation of each alternative and estimated opinion of construction costs. The alternatives are presented for review and selection by the Office of Dam Safety and stakeholders. Potential next steps are provided below.

1. Consult with stakeholders and select preferred alternative.
2. Develop a strategy to proceed with the project that addresses property ownership, responsible parties upon project completion, government/public approvals, and funding.
3. Consult with MassDEP to review sediment analysis. Perform additional sediment sampling and develop a preferred sediment management approach in accordance with MassDEP guidance.
4. Proceed with final design of selected alternative.
5. Perform wetland delineation and update topographic survey.
6. Confirm the applicability of environmental permits.
7. Finalize construction documents and obtain necessary regulatory approvals.

Attachment E
Representative Site Photos

AECOM

PHOTOGRAPHIC LOG

Client Name: Massachusetts Department of Conservation and Recreation (DCR)	**Site Location:** Bel Air Dam - Pittsfield, MA	**Project No.** 60604936

Photo No. 1	**Date:** 05/23/2019

Description:

View of pedestrian bridge deterioration looking from right side of dam

Photo No. 2	**Date:** 05/23/2019

Description:

View of down slope of right embankment looking downstream.

AECOM

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Massachusetts Department of Conservation and Recreation (DCR)	Bel Air Dam - Pittsfield, MA	60604936

Photo No. 3	Date: 05/23/2019

Description:

View of upstream side of dam. Silt and debris build up above normal operating pool.

Photo No. 4	Date: 05/23/2019

Description:

View of vegetation growing from crest of auxiliary spillway and the bottom side of pedestrian bridge.

AECOM

PHOTOGRAPHIC LOG

Client Name: Massachusetts Department of Conservation and Recreation (DCR)	**Site Location:** Bel Air Dam - Pittsfield, MA	**Project No.** 60604936

Photo No. 5	**Date:** 05/23/2019

Description:

View of sluiceway from upstream side of dam.

Photo No. 6	**Date:** 05/23/2019

Description:

View of auxiliary spillway from downstream side of dam.

AECOM

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Massachusetts Department of Conservation and Recreation (DCR)	Bel Air Dam - Pittsfield, MA	60604936

Photo No. 7	Date: 05/23/2019

Description:

View of sluiceway from downstream side of dam.

Photo No. 8	Date: 05/23/2019

Description:

View of transition between original masonry wall and concrete training wall on right side of sluiceway looking at the downstream face of dam.

AECOM

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Massachusetts Department of Conservation and Recreation (DCR)	Bel Air Dam - Pittsfield, MA	60604936

Photo No. 9	Date: 05/23/2019

Description:

View of auxiliary spillway from downstream side of dam.

Photo No. 10	Date: 05/23/2019

Description:

View of earthen embankment between sluiceway and primary spillway from downstream side of dam.

AECOM

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Massachusetts Department of Conservation and Recreation (DCR)	Bel Air Dam - Pittsfield, MA	60604936

Photo No. 11	Date: 05/23/2019

Description:

View of concrete training wall on downstream side of dam sluiceway direction the flow towards river.

Photo No. 12	Date: 05/23/2019

Description:

Close up view of end of concrete training wall on downstream side of dam sluiceway direction the flow towards river where it abuts to the original masonry structure.

AECOM

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Massachusetts Department of Conservation and Recreation (DCR)	Bel Air Dam - Pittsfield, MA	60604936

Photo No. 13	Date: 05/23/2019

Description:

View of the top of sluiceway from the downstream side of dam.

Photo No. 14	Date: 05/23/2019

Description:

View of the right side of sluiceway from the upstream side of dam.

Attachment F
Excerpt from Emergency Action Plan

EMERGENCY ACTION PLAN

Bel Air Dam-MA01061

Pittsfield, MA

Prepared by DCR-Office of Dam Safety

April 19, 2017

APPROVAL OF EMERGENCY ACTION PLAN

SAMPLE APPROVAL OF EMERGENCY ACTION PLAN

NATID: **MA01061**
Dam Name: **Bel Air Dam**
Location: **Pittsfield**
Owner: **N/A**
EAP Effective/Review Date: April 2017

The following verification of Emergency Action Plan (EAP) review is required under MGL Chapter 253 and 302 CMR 10.00. This verification of review is to become a part of the EAP and is to accompany the EAP copies submitted to the Department of Conservation and Recreation Office of Dam Safety and Massachusetts Emergency Management Agency. The purpose of this verification is to document that the Emergency Management Director has received and reviewed a draft copy of the EAP and provided comments if necessary.

Signing of this document by the Emergency Management Director acknowledges that the above described review process has taken place.

EMERGENCY MANAGEMENT DIRECTOR

Name: Robert Czerwinski

Title/Town: City of Pittsfield

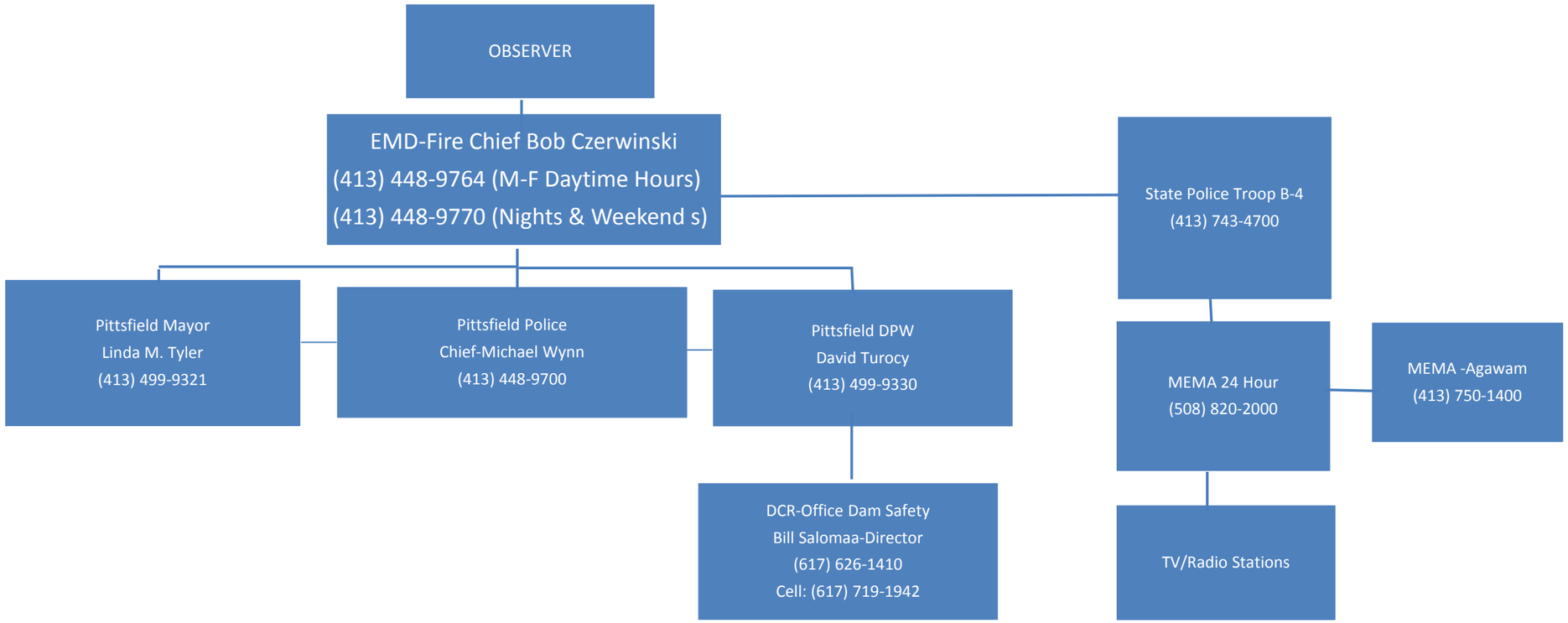
Signature: Robert Czerwinski

Date: May 3, 2017

TABLE OF CONTENTS

NOTIFICATION FLOWCHART

EMERGENCY NOTIFICATION FLOW CHART



STATEMENT OF PURPOSE

SCOPE

STATEMENT OF PURPOSE

This draft Emergency Action Plan (EAP) for Bel Air Dam has been prepared by the Department of Conservation and Recreation Office of Dam Safety and addresses (in a cursory level of detail) the DCR, City of Pittsfield, and other state agencies' response to an emergency situation associated with a rapid, sudden, uncontrolled release of water from Bel Air Dam. The operational concepts presented within this plan focus on a disaster which would require other than normal, routine responses. A flood resulting from a dam failure would pose a threat to life and property in areas downstream of Bel Air Dam. This dam is classified as a High Hazard, Intermediate Size structure in Unsafe condition.

This draft EAP is a management document intended to be read and understood before an emergency situation occurs. It is intended to outline the activities of local and state emergency management officials.

SCOPE

The EAP sets forth basic procedures, duties and responsibilities to be implemented by the DCR, the City of Pittsfield and other key operational and public safety personnel in the event of an emergency condition at Bel Air Dam.

An "emergency," for the purposes of this EAP, is defined as an impending or actual sudden uncontrolled release of water from Bel Air Dam. This might involve failure of embankments, spillways or other dam related structures.

The major focus of the EAP is the delineation of the extent of inundation resulting from a hypothetical flood associated with a dam failure. A notification plan has been developed that assigns responsibilities to quickly and efficiently warn key operational personnel, local public safety agencies, and state law enforcement and emergency management agencies.

Attachment G

MEPA Review

From: Mejia, Josbel (EEA) <Josbel.Mejia@mass.gov>
Sent: Monday, March 11, 2024 7:41 AM
To: Flanagan, Jillian
Cc: Wu, Christina Y (DEP); Wong, David W (DEP)
Subject: Ecological Restoration Notice: Bel Air Dam
Attachments: Notice of Ecological Restoration - Bel Air Dam

Hello,

This is to confirm that, under 301 CMR 11.01(2)(b)4., the Secretary has not issued a determination, within 10 days of the close of the comment period, that an ENF is required for this project.

Accordingly, any Agency Action required for the Project may be taken at this time if required to obtain a Restoration Order of Conditions, provided that the Agency Action is deemed to be conditioned on the ultimate issuance of the Restoration Order of Conditions.

If the Restoration Order of Conditions is denied, or if the project is permitted as an Ecological Restoration Limited Project under 310 CMR 10.24(8) and 10.53(4), then the project must undergo MEPA review, and any conditional Agency Actions shall not become effective until MEPA review is completed. Consistent with 301 CMR 11.12(6), the Agency may reconsider the Agency Action and any conditions thereof following the completion of MEPA review.

Sincerely,

Josbel Mejia (Joe)
Pronouns: He/Him
Mass. Environmental Policy Act (MEPA) Office
100 Cambridge Street – Boston, MA 02114

Attachment H
Environmental Monitor Notice

Notification of the filing of an Ecological Restoration Notice of Intent to the Pittsfield Conservation Commission

Bel Air Dam is part of the Massachusetts Department of Conservation and Recreation (MassDCR) Office of Dam Safety's (ODS) pilot Abandoned Dams program. As part of this program, MassDCR is seeking to address safety concerns pertaining to dams in the Commonwealth that have no identifiable owner. In the case of Bel Air Dam, neither the City of Pittsfield nor any other interested party has expressed willingness to take ownership of the dam; therefore, the MassDCR ODS is proposing to remove the dam. The proposed project will remove the Bel Air Dam on the West Branch of the Housatonic River and thereby restore the natural connectivity of a waterway, meeting the definition of an Ecological Restoration Project as defined in *310 CMR 10.04*.

The proposed project is a Dam Removal Project as listed in *310 CMR 10.13(2)*, and proposes removal of the entire dam structure, restoration of a natural stream channel in the area of the current impoundment, establishment of adjacent floodplain, and installation of native herbaceous and woody species. The project area historically contained riparian habitat which has been degraded due to the impoundment. Changes to the environment caused by the presence of the dam include alteration of water temperatures and chemistry, river flow characteristics, and silt loads. The proposed project will also remove contaminated sediment that has accumulated upstream of the dam which includes elevated levels of chromium, arsenic, lead, polynuclear aromatic hydrocarbons (PAHs), and extractable petroleum hydrocarbons (EPHs). Project activities will occur within jurisdictional areas protected under the Massachusetts Wetlands Protection Act and its implementing regulations, including Land Under Water (LUW), Bordering Vegetated Wetlands (BVWs), Bank, 200-foot Riverfront Area, and Bordering Land Subject to Flooding (BLSF).

The anticipated NOI submission date to the Pittsfield Conservation Commission is July 18, 2024. The hearing is anticipated to be held August 1, 2024, at 70 Allen Street Pittsfield, MA 01201 in City Council Chambers at 6:00 PM. A copy of the NOI will be available at the Pittsfield Conservation Commission office and a hard copy may be obtained by contacting Jennifer Doyle-Breen by phone at 978-905-2968 or by email at jennifer.doyle-breen@aecom.com.

Attachment I

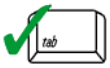
Stormwater Report Checklist

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

July 12, 2024
Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☐ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☒ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☒ Other (describe): There will be no new impervious surface developed as a result of this project.

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

N/A - There will be no net increase in impervious surface.

Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

N/A - There will be no new net increase in impervious surface.

Standard 3: Recharge

- ☐ Soil Analysis provided.
- ☐ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - ☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]
- ☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
  - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
  - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

N/A – no new BMPs are proposed

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

N/A – no new BMPs are proposed

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

N/A – no new BMPs are proposed

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

N/A – no new BMPs are proposed

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☒ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

See project plans in Attachment H and Section 8.0 of Attachment A Narrative

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

N/A – no new BMPs are proposed

Standard 9: Operation and Maintenance Plan

☐ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

No new stormwater connections are proposed; there four existing stormwater outfalls on the project site - however there are no known existing or proposed illicit discharges

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

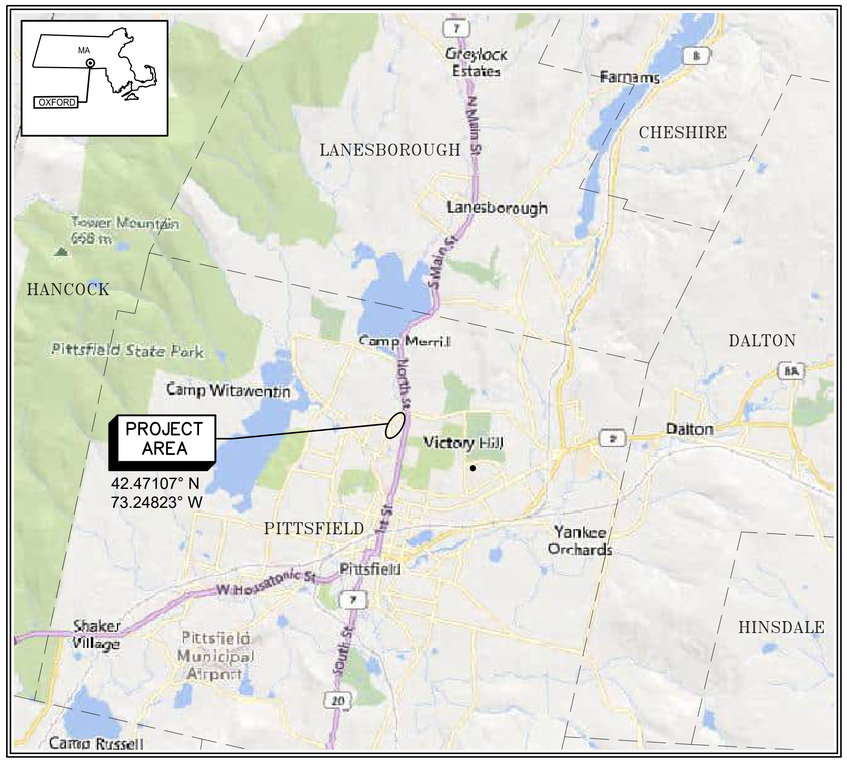
☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Attachment J

Project Plans

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION
BEL AIR DAM REMOVAL
PITTSFIELD, MA

JUNE 2024



LOCATION PLAN

APPROXIMATE SCALE: 1" = 1 Mile

0 1 2 3

SCALE: 1" = 1 MILE

N

INDEX OF DRAWINGS

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation
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REGISTRATION

PERMIT REVIEW SET
PRELIMINARY COPY
NOTE: This document is preliminary only and is not intended for any purpose except review and comment by the owner and its agents.

ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**JDB**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

GENERAL

SHEET TITLE

BEL AIR DAM REMOVAL

COVER SHEET, LOC. PLAN AND INDEX OF DRAWINGS

SHEET NUMBER

00 G-001

PATH/FILENAME: C:\USERS\NAPOLITAN\OS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\G\BEL AIR DAM\00 G-001 BEL PERMIT.DWG
LAST UPDATE: Monday, June 24, 2024 10:25:58 AM
PLOT DATE: Monday, June 24, 2024 10:27:24 AM

GENERAL PLAN NOTES

1. TOPOGRAPHIC SURVEY IS BASED ON AN ON-THE-GROUND SURVEY PERFORMED ON JUNE 4TH AND 5TH, 2019, BY ALPHA SURVEY GROUP, LLC.
2. THE HORIZONTAL DATUM FOR THIS PROJECT IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), CORS ADJUSTMENT (NA2011/GEOID 12a) AS DETERMINED BY REDUNDANT GPS OBSERVATIONS MADE ON MAY 20TH, 2019 UTILIZING KEYSTONE PRECISION INSTRUMENTS' KEYNET GPS VIRTUAL REFERENCE SYSTEM (VRS) NETWORK.
3. NO UTILITY INVESTIGATION WAS PERFORMED FOR THIS PROJECT. UTILITY LOCATION SHALL BE PERFORMED BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY WORK. CALL "DIG SAFE" AT 811.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE EXISTING FEATURES AND STRUCTURES WITHIN AND ADJACENT TO THE WORK. IN THE EVENT OF DAMAGE, THE REPAIRS OR REPLACEMENT SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AS APPROVED BY THE ENGINEER.
5. ALL PIPES OR OTHER UTILITIES DAMAGED DURING THE CONTRACTOR'S OPERATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE AT NO COST TO THE OWNER.
6. EXISTING CONDITIONS ARE SHOWN ON THE PLANS IN A SCREENED (LIGHTER) PENWEIGHT. PROPOSED WORK IS SHOWN IN BOLDER PENWEIGHT.
7. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK AS INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER OR OWNER IN CONFORMANCE WITH ALL APPLICABLE CODES AND IN A PROPER AND WORKMANLIKE MANNER.
8. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL WASTE BUILDING MATERIAL, CONCRETE, MASONRY, TREES, SHRUBS, DEBRIS AND OTHER MATERIALS NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK AND AS REQUIRED BY THE OWNER. CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LOCAL STREET OPENING OR BUILDING PERMITS AND FOR COORDINATING INSPECTIONS AS REQUIRED. PERMIT FEES SHALL BE PAID DIRECTLY BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE APPROPRIATE ITEM OF THE BID. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE PERMITS OBTAINED BY THE OWNER AND REFERENCED IN SPECIFICATION 0110.

DEMOLITION NOTES

1. DAMAGE DUE TO DEMOLITION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
2. PATCH AND FINISH EXPOSED SURFACES TO MATCH THE ADJACENT AREA UNLESS OTHERWISE INDICATED OR SPECIFIED.

EROSION PROTECTION NOTES

1. EROSION PROTECTION MEASURES SHALL BE CHECKED AND MAINTAINED ON A DAILY BASIS. SEDIMENT DEPOSITS UPSTREAM OF THE BALES SHALL BE REMOVED ON A REGULAR BASIS.
2. REPAIR OR REPLACEMENT OF EROSION CONTROL MEASURES SHALL BE MADE PROMPTLY AS NEEDED, OR AS DIRECTED BY THE ENGINEER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED BY THE OWNER DUE TO CONTRACTOR NEGLIGENCE SHALL BE REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
3. EROSION CONTROL BLANKETS SHALL BE INSTALLED AS QUICKLY AS POSSIBLE ALONG DISTURBED SLOPES WITH POTENTIAL TO ERODE.
4. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, THE CONTRACTOR SHALL FOLLOW THE GENERAL CONSTRUCTION SEQUENCE SHOWN BELOW. MODIFICATIONS TO THE SEQUENCE NECESSARY TO THE CONTRACTOR'S SCHEDULE SHALL BE SUBMITTED IN WRITING AND APPROVED BY THE OWNER AND ENGINEER PRIOR TO PROCEEDING. ANY WORK PERFORMED WITHOUT THE APPROVAL IS AT THE RISK OF THE CONTRACTOR. INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
   - A. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS AND AS INDICATED BY THE EROSION PROTECTION NOTES PRIOR TO THE COMMENCEMENT OF EARTH WORK.
   - B. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUN-OFF QUALITY.
   - C. A SILT FENCE SHALL BE CONSTRUCTED AROUND MATERIAL STOCKPILES IN A MANNER TO PROVIDE ACCESS AND AVOID EROSION OUTSIDE OF THE AREA.
   - D. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
   - E. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED, MULCH AND RIPRAP.
   - F. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.
   - G. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND CONSTRUCTION IS COMPLETE.
   - H. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, FROM DRAIN PIPES, DITCHES, CURB LINES, ETC., RESULTING FROM SOIL EROSION AND/OR CONSTRUCTION OPERATIONS. MATERIAL SHALL NOT BE DEPOSITED NEAR WETLANDS AND/OR WATER COURSES.
   - I. DISCHARGES INTO STREAMS OR WATERWAYS SHALL BE IN ACCORDANCE WITH THE CONTRACTORS WATER MANAGEMENT PLAN.

TRAFFIC MANAGEMENT

1. CONTRACTOR SHALL COORDINATE A TRAFFIC MANAGEMENT PLAN WITH LOCAL AUTHORITIES PRIOR TO THE START OF THE PROJECT PER SPECIFICATION 01063.
2. CONTRACTOR TO PROVIDE ALL REQUIRED SIGNAGE, FLAGGING, AND TRAFFIC CONTROL DEVICES AS PART OF THE TRAFFIC MANAGEMENT PLAN.

LEGEND

EXISTING

- BOUND FOUND
- BENCH MARK
- UTILITY POLE
- GUY WIRE
- CATCH BASIN
- DRAIN MANHOLE
- UTILITY MANHOLE
- DIRECTIONAL FLOW ARROW
- 1041.9'± X — EXISTING SPOT GRADE
- TP — STAKE LOCATED
- WATER SHUTOFF
- APPROXIMATE PROPERTY LINE
- 1027 — EXISTING CONTOUR
- EDGE OF GRAVEL
- EDGE OF BITUMINOUS
- EDGE OF WATER
- RIVER THREAD
- METAL HAND RAIL
- WIRE FENCE
- CHAIN LINK FENCE
- METAL GUARDRAIL/DECK RAILING
- UNDERGROUND STORMDRAIN
- OVERHEAD WIRES
- EDGE OF BRUSH/TREELINE
- DECIDUOUS TREE (SIZE)

PROPOSED

- LIMIT OF WORK
- TEMPORARY CONSTRUCTION ENTRANCE
- EROSION CONTROL BARRIER
- DEMOLITION
- STRUCTURE
- 471 — MINOR CONTOUR
- 470 — MAJOR CONTOUR
- 476.5+ — SPOT ELEVATION
- NEW TREELINE
- CHAIN LINK FENCE
- N 2864701.10 E 557175.70 — COORDINATE LOCATION
- SEED MIX

ABBREVIATIONS

BIT.	BITUMINOUS
BOT	BOTTOM
C.I.P.	CAST IRON PIPE
C.M.P.	CORRUGATED METAL PIPE
CONC.	CONCRETE
DH	DRILL HOLE
EL./ELEV.	ELEVATION
INV	INVERT
MAG	MAG NAIL
ELEV.	RETAINING
R.O.W.	RIGHT-OF-WAY
RR	RAILROAD
S&M	STONE AND MORTAR
SPK	SPIKE
UP	UTILITY POLE
VGC	VERTICAL GRANITE CURB
W.S.	WATER STOP

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation
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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**BR**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

BEL AIR DAM REMOVAL

LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET NUMBER

00 C-001

PATH/FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\00 C-001 BEL.DWG
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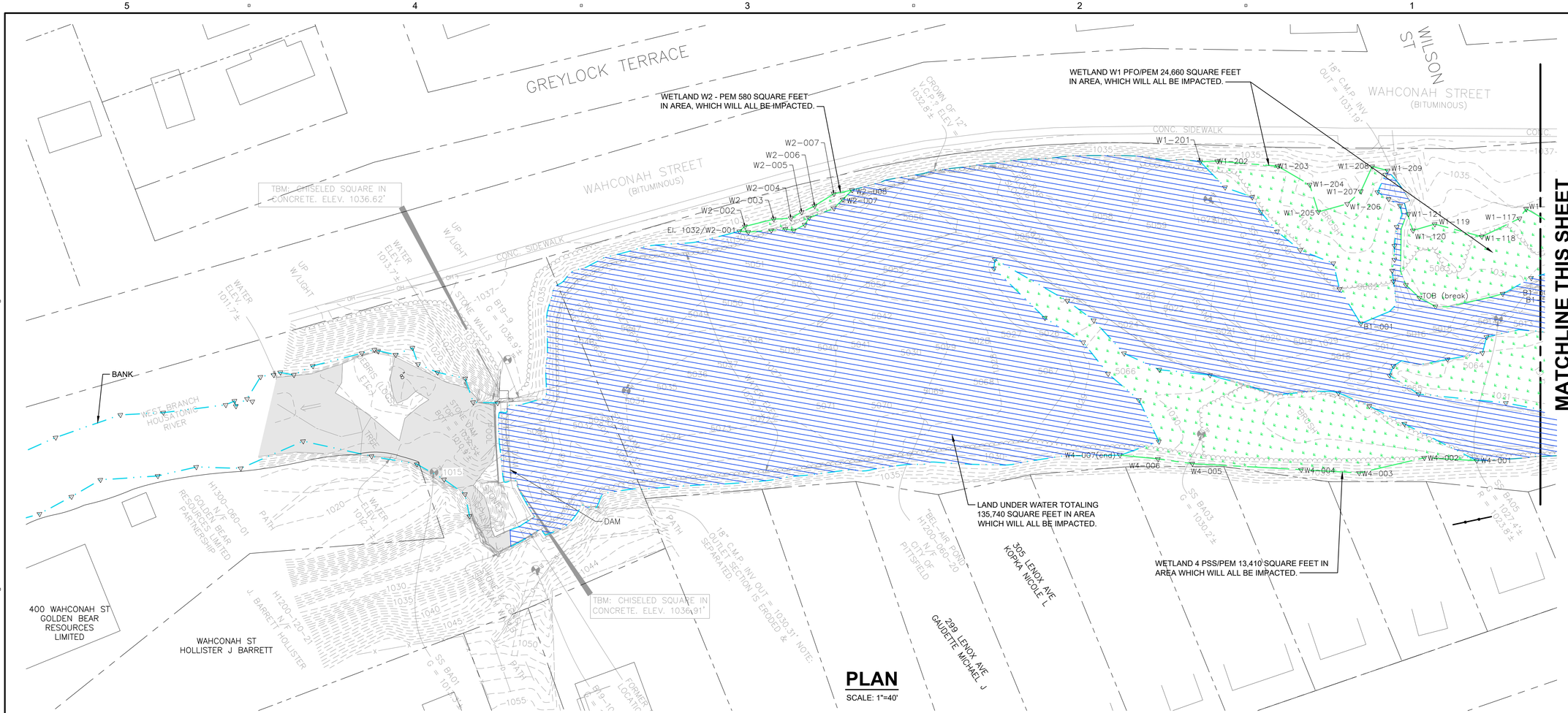
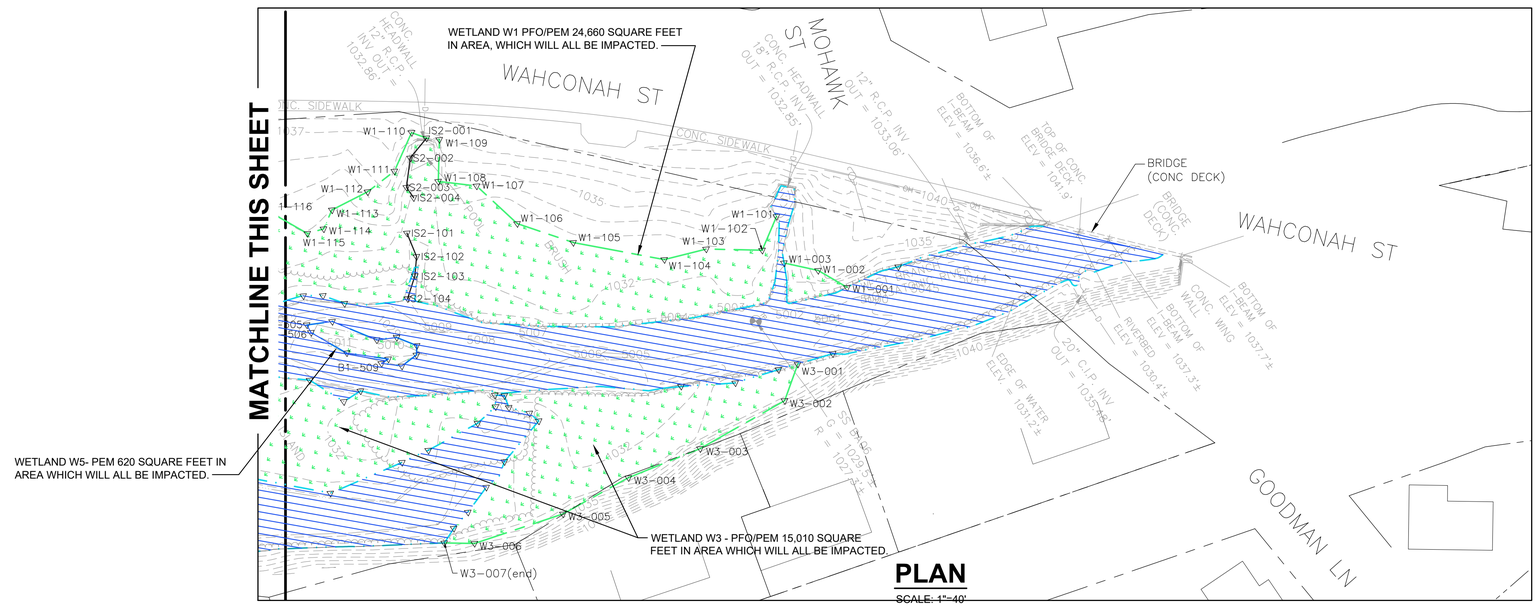
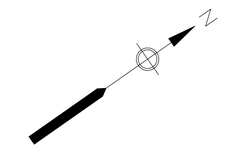
PLOT DATE: Monday, June 24, 2024 10:27:43 AM







LEGEND

- BANK
- LAND UNDER WATER
- BORDERING VEGETATED WETLANDS

1"=40' 40' 20' 0 40' 80'

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LAST UPDATE: Wednesday, July 3, 2024 11:06:05 AM
PLOT DATE: Friday, July 12, 2024 1:10:02 PM

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation
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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	JPM
Drawn By:	SN
Dept Check:	CB
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	AS NOTED

DISCIPLINE

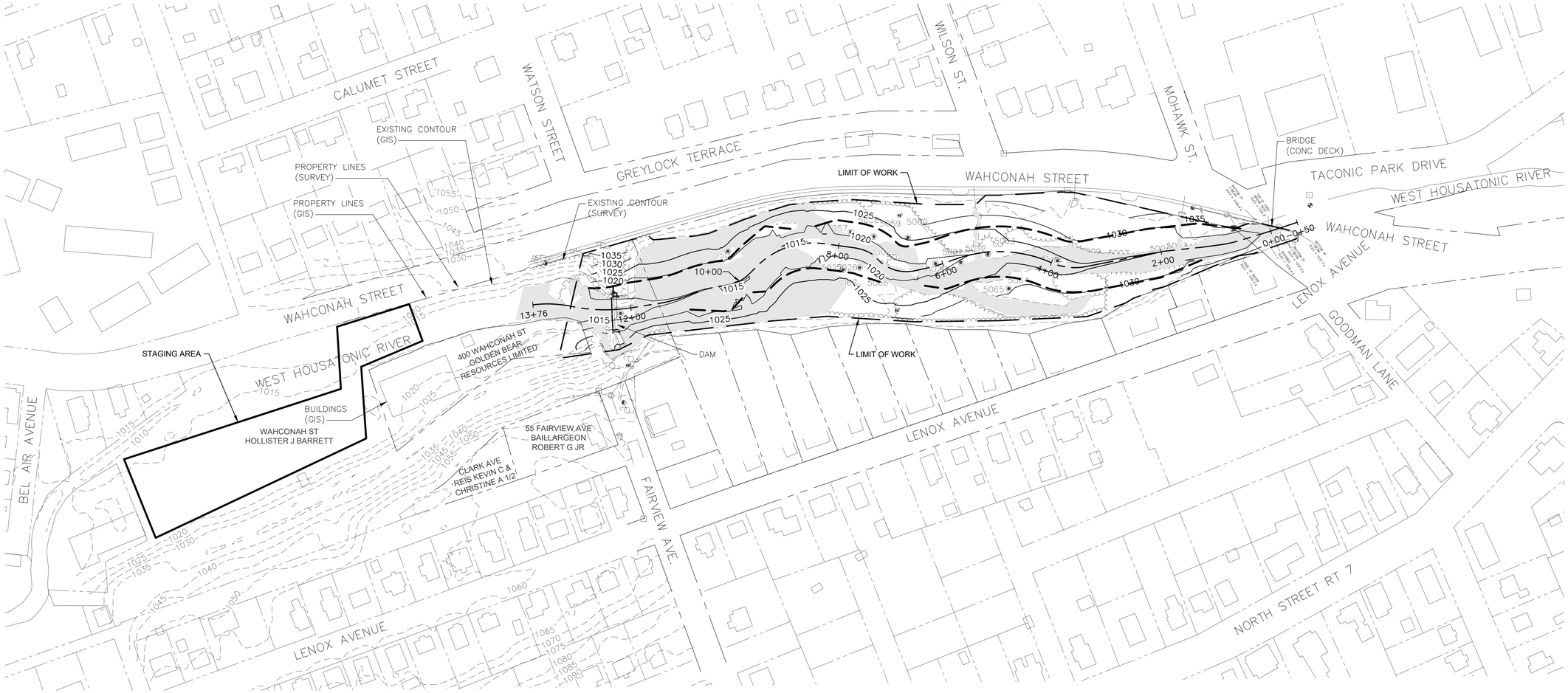
CIVIL

SHEET TITLE

EXISTING CONDITIONS AND IMPACTED LUW PLAN

SHEET NUMBER

00 C-101



PLAN

SCALE: 1"=100'

PATH/FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CBEL AIR\00 C-102 BEL.DWG
LAST UPDATE: Thursday, June 20, 2024 2:02:16 PM
PLOT DATE: Monday, June 24, 2024 10:40:02 AM

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation

251 Causeway Street, Suite 600
Boston, MA 02114-2119
617.626.1250 tel 617.626.1351 fax
www.mass.gov/orgs/department-of-conservation-recreation

CONSULTANT

AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE
CHELMSFORD, MA 01824
PHONE: (978) 905-2100
www.aecom.com

REGISTRATION

PERMIT REVIEW SET
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NOTE: This document is preliminary only and is not intended for any purpose except review and comment by the owner and its agents.

ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**JPM**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

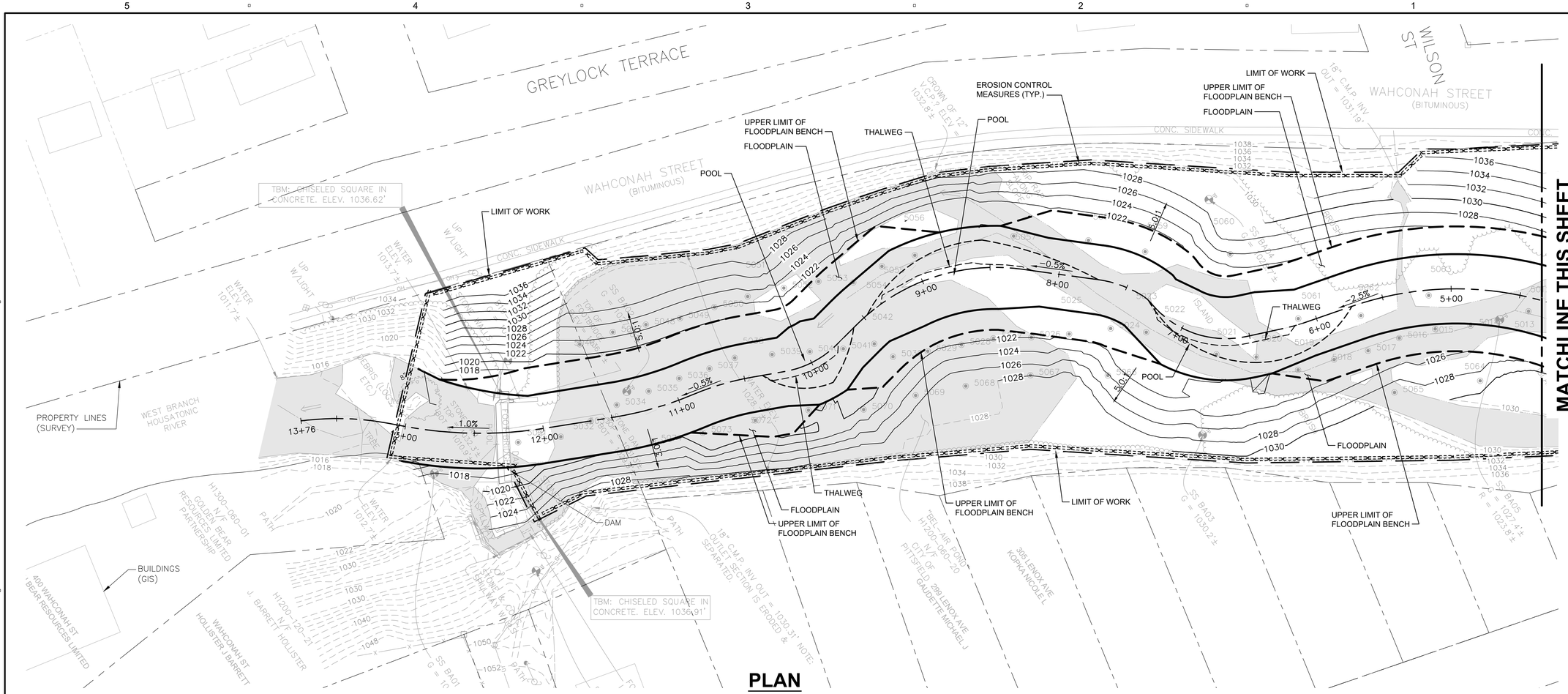
SHEET TITLE

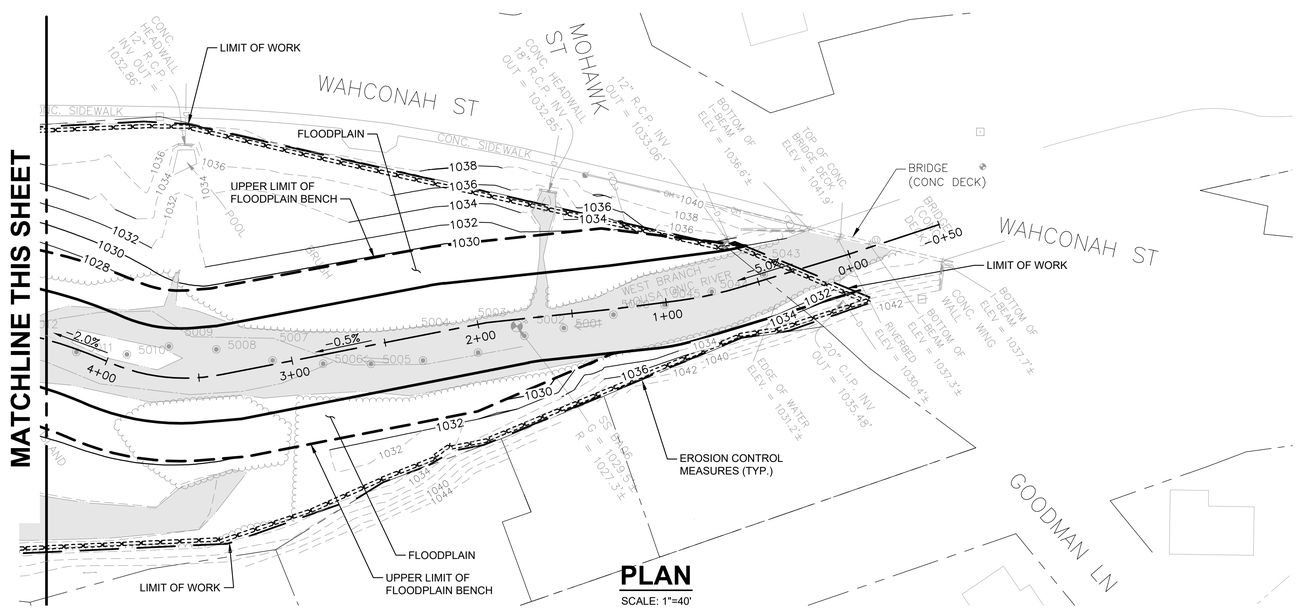
BEL AIR DAM REMOVAL

STAGING AND SITE ACCESS PLAN

SHEET NUMBER

00 C-102





AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**JPM**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

BEL AIR DAM REMOVAL

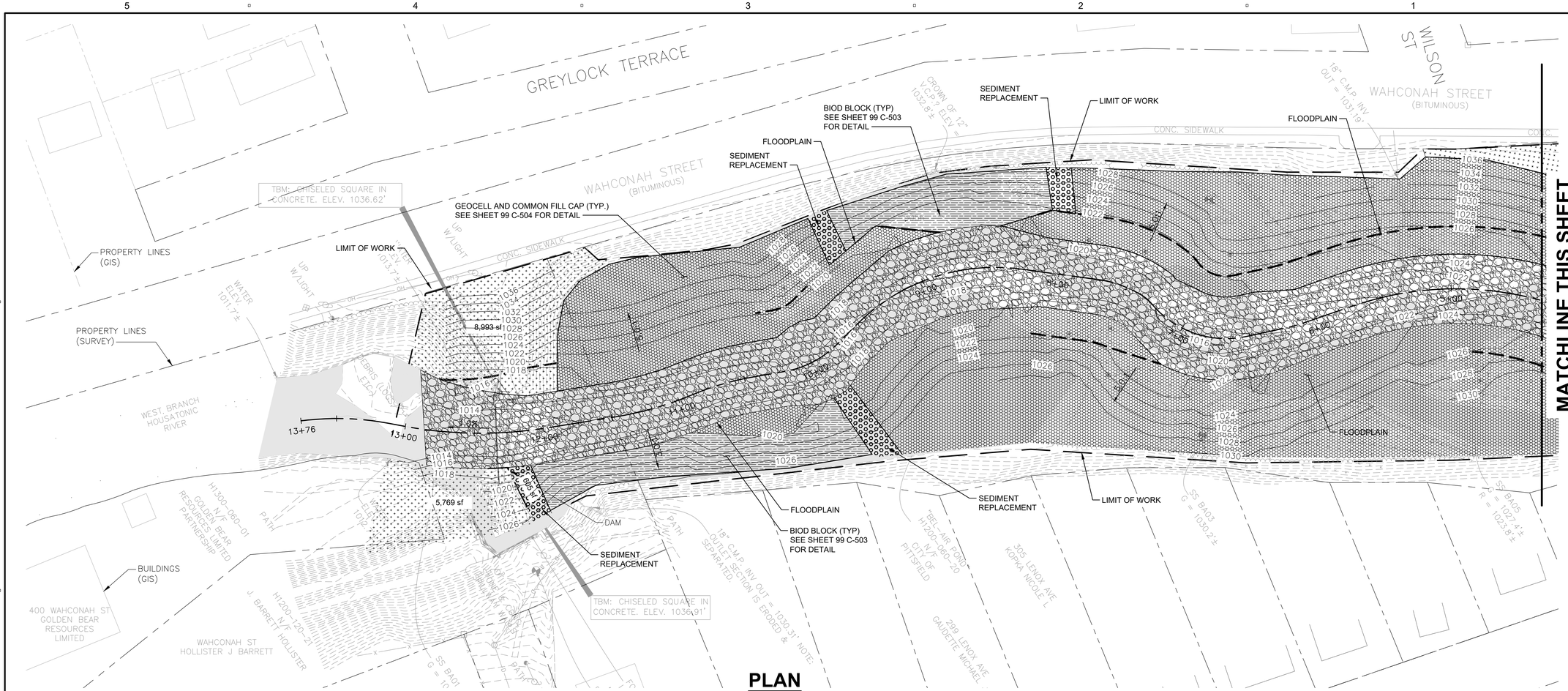
PROPOSED CHANNEL GRADING PLAN

SHEET NUMBER

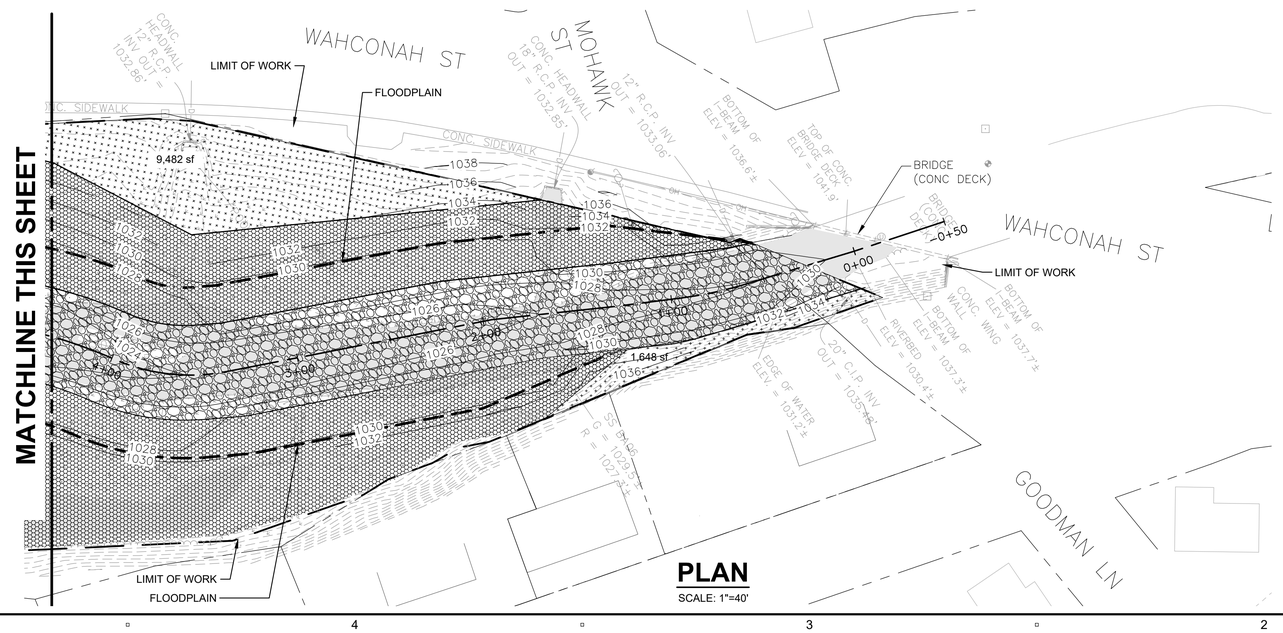
00 C-103

1"=40' 40' 20' 0 40' 80'

PATH\FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\00 C-103 BEL AIR PERMIT.DWG
LAST UPDATE: Wednesday, June 26, 2024 1:26:43 PM
PLOT DATE: Wednesday, June 26, 2024 1:30:50 PM



PLAN
SCALE: 1"=40'



PLAN
SCALE: 1"=40'

LEGEND

- PROPOSED REINFORCED BED MATERIAL
- PROPOSED SEDIMENT REPLACEMENT
- PROPOSED GEOCELL AND COMMON FILL CAP WITH NATIVE SEED MIX AND EROSION CONTROL BLANKET APPLIED ABOVE CAP.
- PROPOSED BIO-D BLOCK OR SIMILAR WITH LIVE WOODY STAKE PLANTINGS OF SALIX SPP.
- RESTORE AREA TO EXISTING CONDITIONS AND RE-PLANT WITH NATIVE SEED MIX AND NATIVE WOODY SPECIES PER SPECIFICATIONS. WOODY SPECIES TO BE PLANTED INCLUDE BLACK CHERRY (Prunus serotina), BOX ELDER MAPLE (Acer negundo), SPECKLED ALDER (Alnus incana), AND SILKY DOGWOOD (Cornus amomum). IN THE NORTHWESTERN SUB-AREA, APPROXIMATELY 25 TREES WILL BE PLANTED AND 100 SHRUBS, WITH TREES SPACED AT 10 - 20 FOOT INTERVALS, AND SHRUBS INSTALLED IN CLUMPS, AT 5 - 8 FOOT ON-CENTER SPACING. A SIMILAR DENSITY WILL BE PLANTED IN THE SOUTHERN AREA AROUND THE DAM FOOTPRINT, WITH APPROXIMATELY 40 TREES AND 125 SHRUBS. IN THE NORTHEASTERN NARROW STRIP, APPROXIMATELY 20 SHRUBS WILL BE PLANTED.

N

40' 20' 0 40' 80'
1"=40'

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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REGISTRATION

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**BR**
Drawn By:	**SN**
Dept Check:	**JDB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

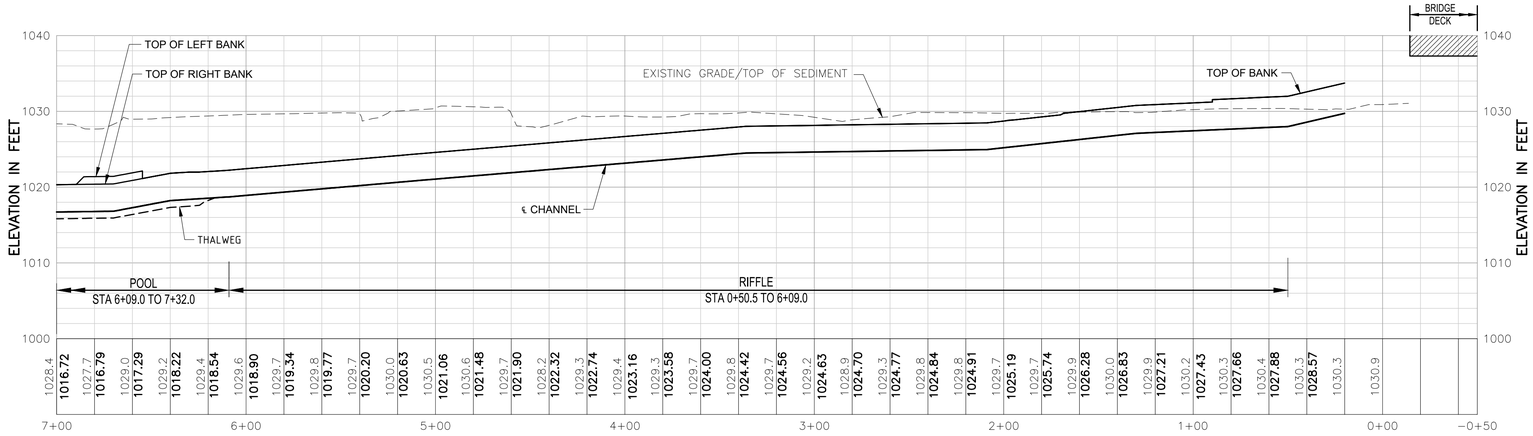
BEL AIR DAM REMOVAL
MATERIALS PLAN

SHEET NUMBER

00 C-104

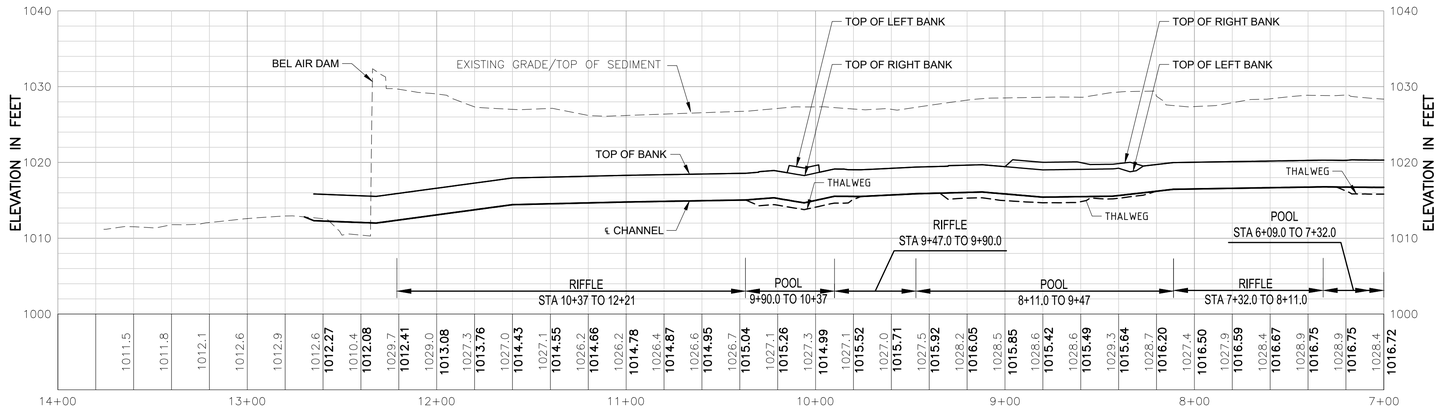
PATH\FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CBEL AIR\00 C-104 BEL.DWG
LAST UPDATE: Thursday, June 27, 2024 8:11:34 AM
PLOT DATE: Thursday, June 27, 2024 8:29:30 AM

CONTINUATION THIS SHEET



PROFILE - BEL AIR CHANNEL

SCALE: 1"=40 HORZ
1"=10' VERT



PROFILE - BEL AIR CHANNEL

SCALE: 1"=40 HORZ
1"=10' VERT

CONTINUATION THIS SHEET

10' 5' 0 10' 20'
1"=10'

40' 20' 0 40' 80'
1"=40'

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**JM**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

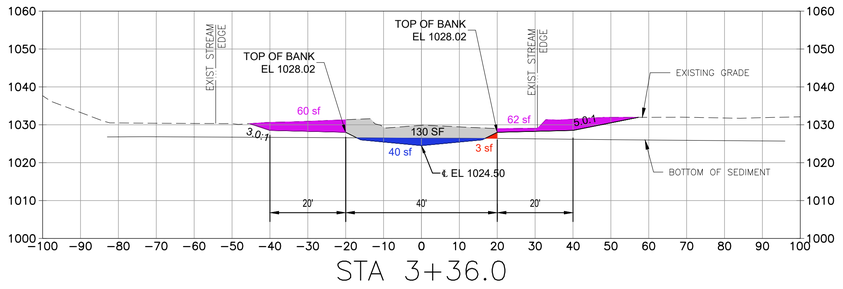
BEL AIR DAM REMOVAL

PROPOSED CHANNEL PROFILE

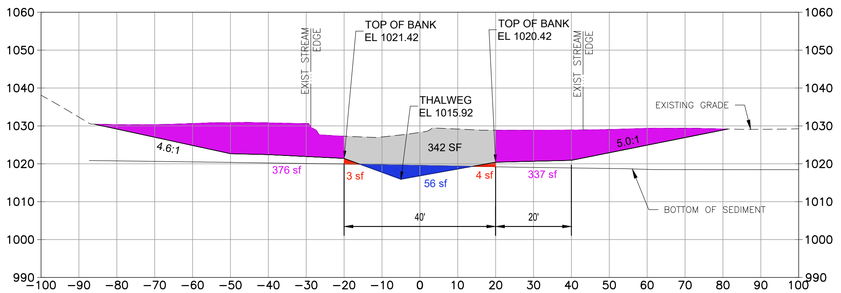
SHEET NUMBER

00 C-201

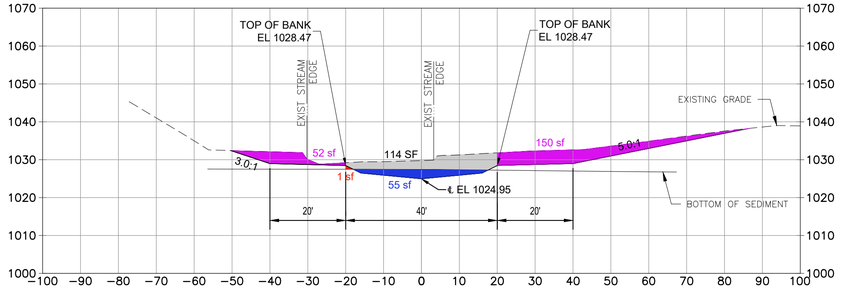
PATH/FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\00 C-201 BEL.DWG
LAST UPDATE: Wednesday, June 5, 2024 1:56:48 PM
PLOT DATE: Monday, June 24, 2024 10:31:11 AM



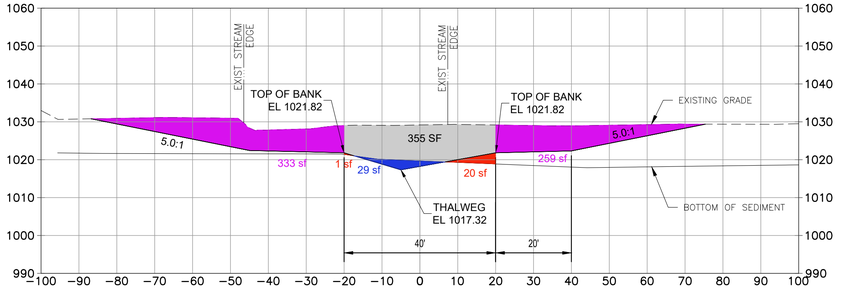
STA 3+36.0



STA 6+70.0 – POOL



STA 2+09.0



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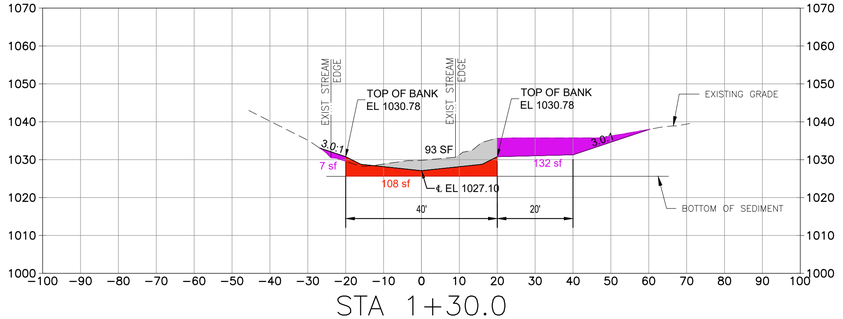
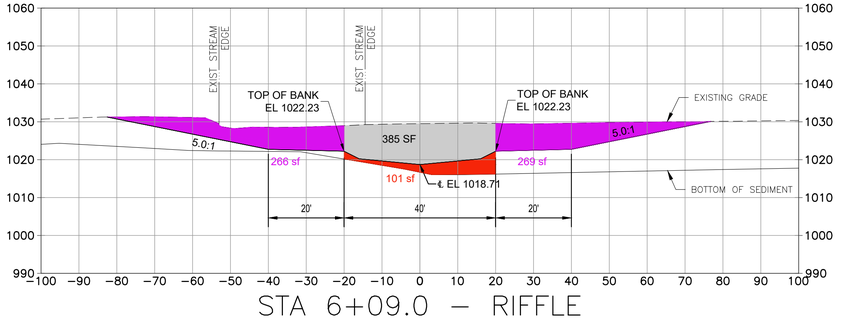
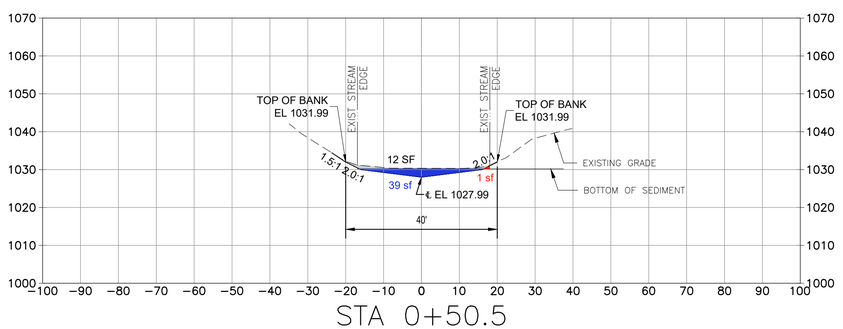


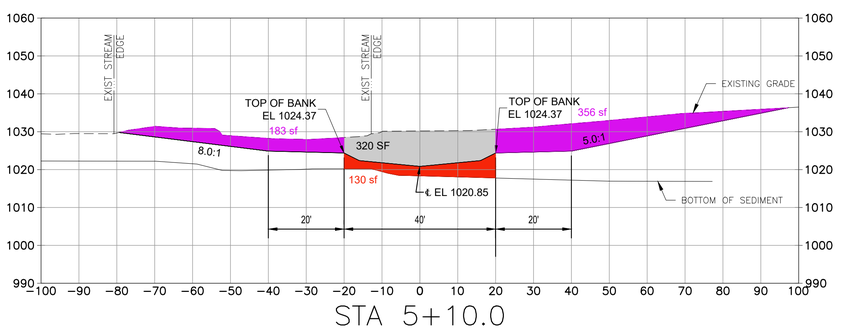
STA 1+30.0



STA 6+09.0 – RIFFLE



STA 0+50.5



STA 5+10.0

LEGEND

- SEDIMENT TO BE EXCAVATED TO CREATE STREAM PROFILE
- COARSE MATERIAL TO BE EXCAVATED TO CREATE STREAM PROFIE
- SEDIMENT TO BE EXCAVATED TO CREATE FLOODPLAIN BENCH
- SEDIMENT TO BE EXCAVATED AND REPLACED WITH STONE TO CREATE STREAM PROFILE

SECTIONS - BEL AIR CHANNEL

SCALE: 1"=20 HORZ
1"=20' VERT

1"=20' (20' 10' 0 20' 40')

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston, MA 02114-2119
617.626.1250 tel 617.626.1351 fax
www.mass.gov/orgs/department-of-conservation-recreation

CONSULTANT

AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE
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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	JPM
Drawn By:	SN
Dept Check:	CB
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	AS NOTED

DISCIPLINE

CIVIL

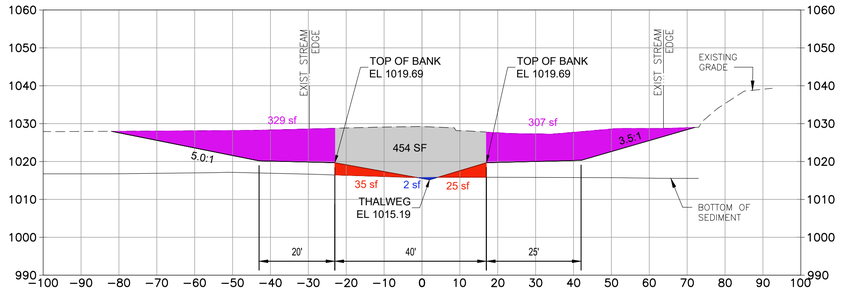
SHEET TITLE

BEL AIR DAM REMOVAL
SECTIONS 1 OF 3

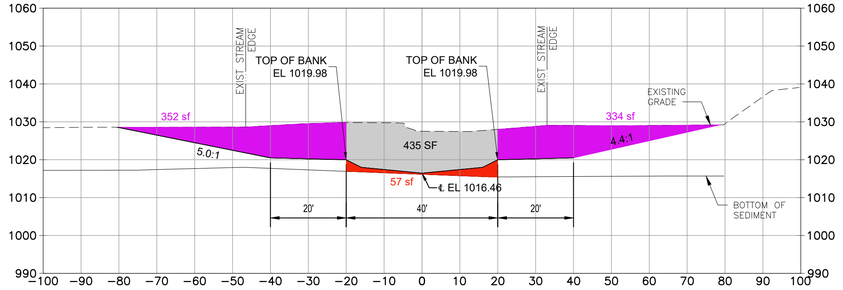
SHEET NUMBER

00 C-301

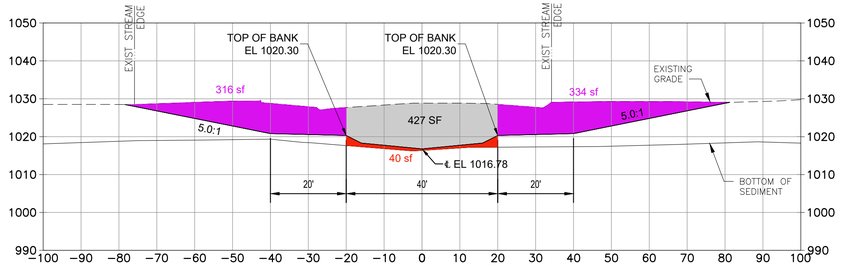
PATH/FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\00 C-301-303 BEL.DWG
LAST UPDATE: Wednesday, June 5, 2024 1:57:19 PM
PLOT DATE: Monday, June 24, 2024 10:31:23 AM



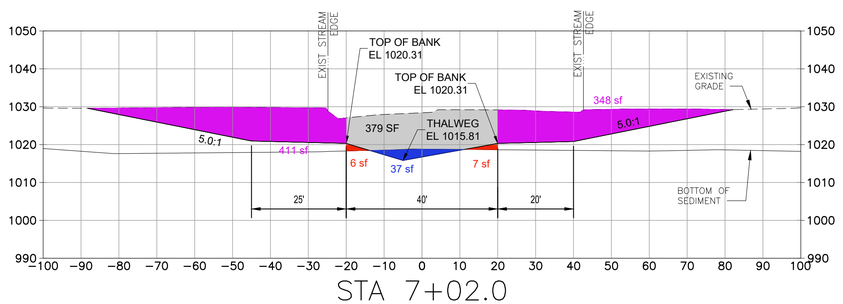
STA 8+43.0



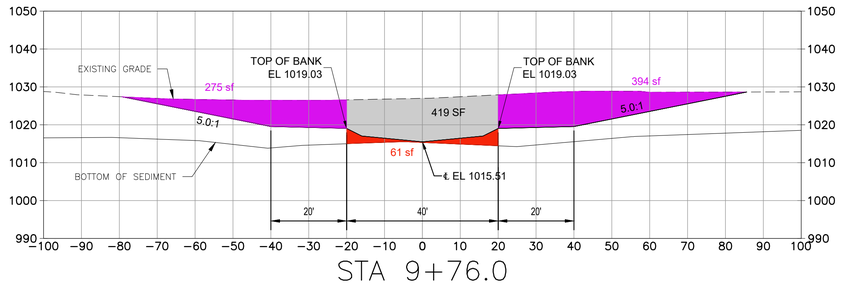
STA 8+11.0



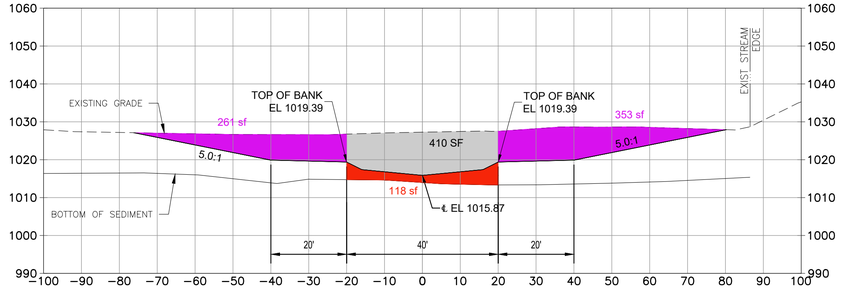
STA 7+32.0



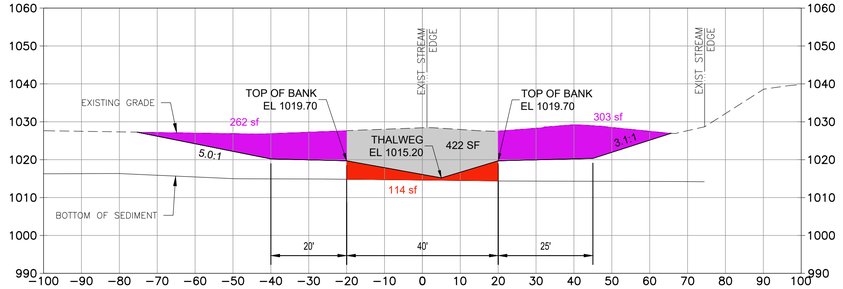
STA 7+02.0



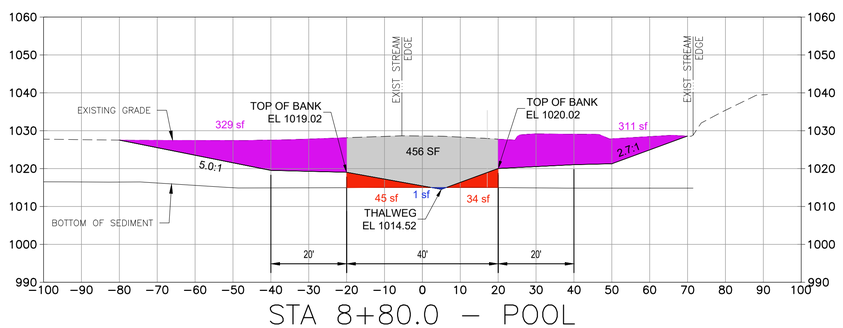
STA 9+76.0



STA 9+47.0



STA 9+12.0



STA 8+80.0 – POOL

LEGEND

- SEDIMENT TO BE EXCAVATED TO CREATE STREAM PROFILE
- COARSE MATERIAL TO BE EXCAVATED TO CREATE STREAM PROFIE
- SEDIMENT TO BE EXCAVATED TO CREATE FLOODPLAIN BENCH
- SEDIMENT TO BE EXCAVATED AND REPLACED WITH STONE TO CREATE STREAM PROFILE

SECTIONS - BEL AIR CHANNEL

SCALE: 1"=20 HORZ
1"=20' VERT

1"=20' 20' 10' 0 20' 40'

PATH/FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CBEL AIR\00 C-301-303 BEL.DWG
LAST UPDATE: Wednesday, June 5, 2024 1:57:19 PM
PLOT DATE: Monday, June 24, 2024 10:31:26 AM

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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CONSULTANT

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	JPM
Drawn By:	SN
Dept Check:	CB
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	AS NOTED

DISCIPLINE

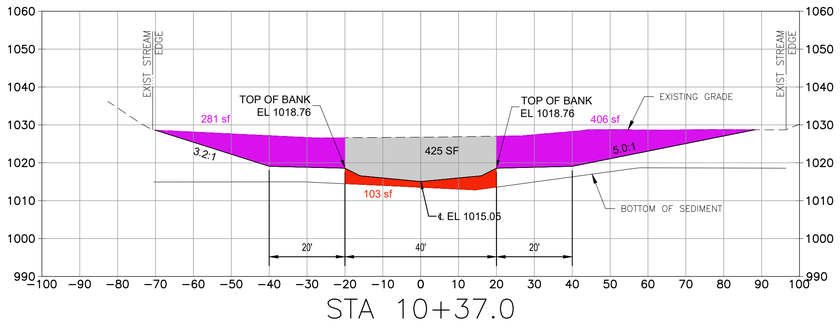
CIVIL

SHEET TITLE

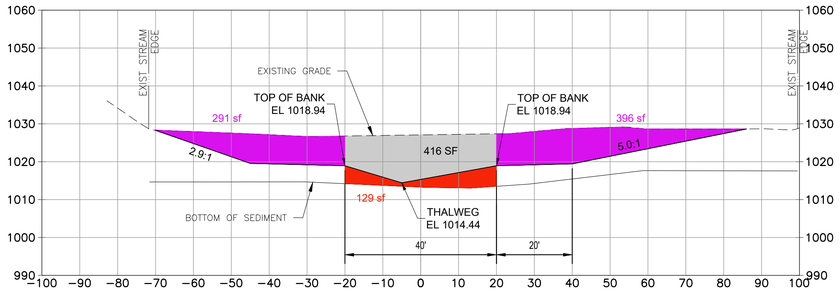
BEL AIR DAM REMOVAL
SECTIONS 2 OF 3

SHEET NUMBER

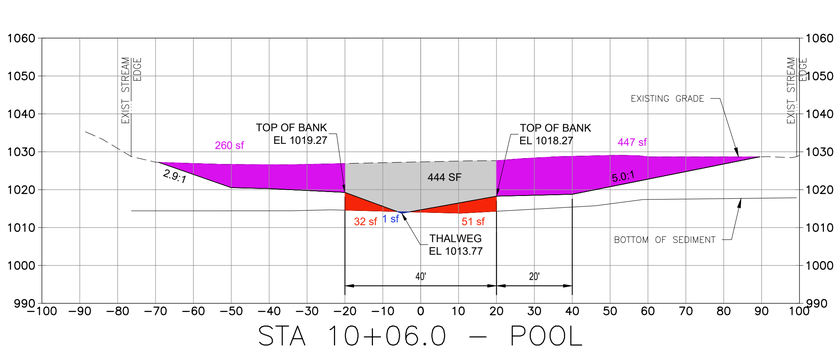
00 C-302



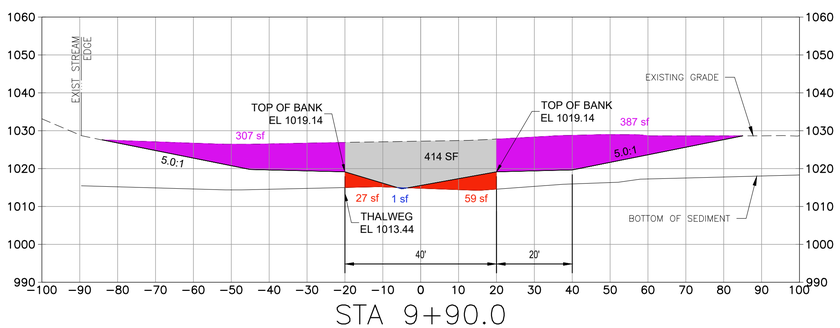
STA 10+37.0



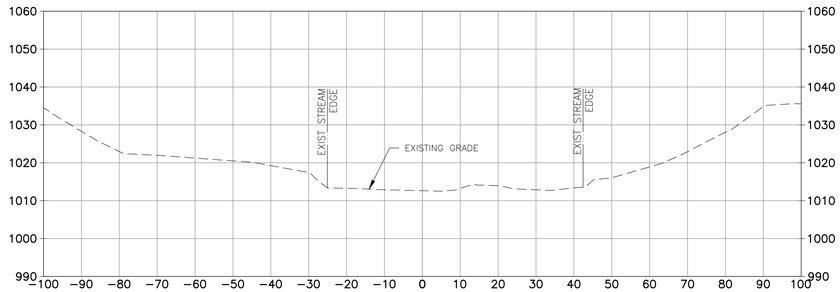
STA 10+22.0



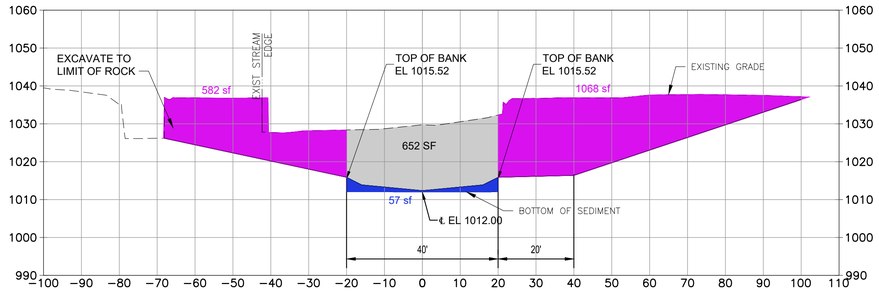
STA 10+06.0 – POOL



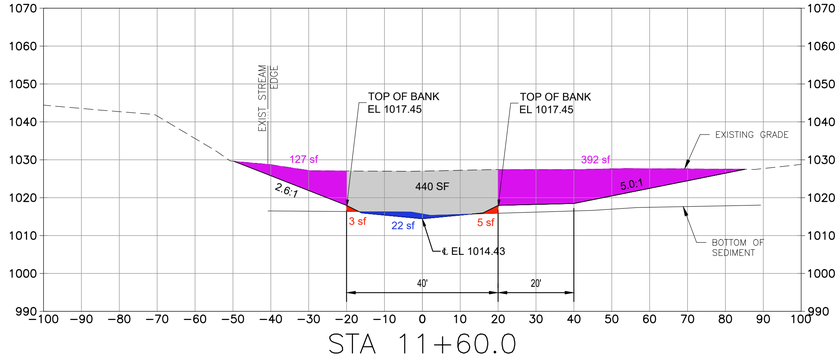
STA 9+90.0



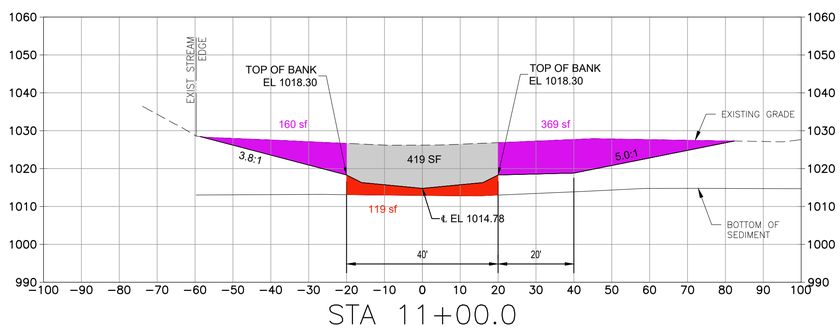
STA 12+98.0



STA 12+21.0



STA 11+60.0



STA 11+00.0

LEGEND

- SEDIMENT TO BE EXCAVATED TO CREATE STREAM PROFILE
- COARSE MATERIAL TO BE EXCAVATED TO CREATE STREAM PROFIE
- SEDIMENT TO BE EXCAVATED TO CREATE FLOODPLAIN BENCH
- SEDIMENT TO BE EXCAVATED AND REPLACED WITH STONE TO CREATE STREAM PROFILE

SECTIONS - BEL AIR CHANNEL

SCALE: 1"=20 HORZ
1"=20' VERT

1"=20' 20' 10' 0 20' 40'

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

Massachusetts Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston, MA 02114-2119
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I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**JPM**
Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

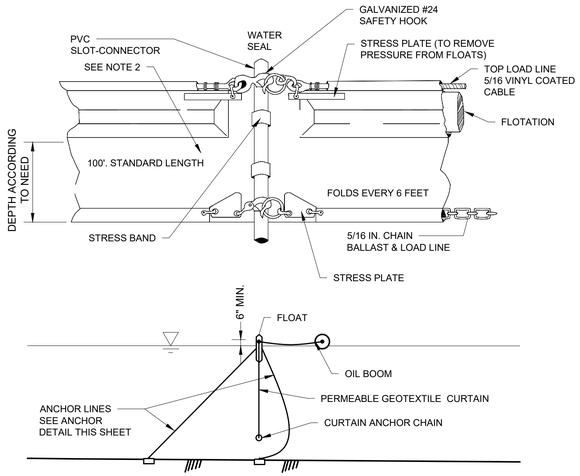
BEL AIR DAM REMOVAL

SECTIONS 3 OF 3

SHEET NUMBER

00 C-303

PATH/FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CB\EL AIR\00 C-301-303 BEL.DWG
LAST UPDATE: Wednesday, June 5, 2024 1:57:19 PM
PLOT DATE: Monday, June 24, 2024 10:31:29 AM

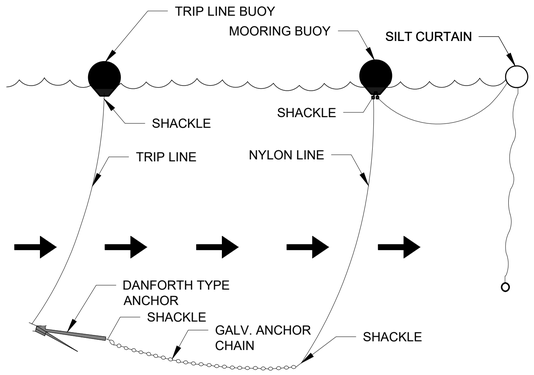


NOTES:

1. ANCHOR CURTAINS PER ANCHOR DETAIL THIS SHEET.
2. TURBIDITY CURTAIN SHALL BE A GEOSYNTHETIC HAVING A FILTRATION APPARENT OPEN SIZE (AOS) OF 0.220 MM MAXIMUM FOR NON-WOVEN GEOTEXTILES, AND AOS OF 0.425 MM MAXIMUM FOR WOVEN TEXTILES, OR SUITABLE ALTERNATIVE.
3. ALL CURTAIN ANCHOR POINTS SHALL HAVE SUFFICIENT HOLDING POWER TO RETAIN THE CURTAIN UNDER THE EXISTING CURRENT CONDITIONS, PRIOR TO PUTTING THE FURLED CURTAIN INTO THE WATER.
4. THE FURLED CURTAIN SHALL BE SECURED TO THE UPSTREAM ANCHOR POINT AND THEN SUBSEQUENTLY ATTACHED TO EACH NEXT DOWNSTREAM ANCHOR POINT UNTIL THE ENTIRE CURTAIN IS IN POSITION.
5. FURLING LINES SHALL NOT BE CUT UNTIL LOCATION IS ASCERTAINED AND INSPECTED.
6. ANCHOR LINES SHALL BE ATTACHED TO THE FLOTATION DEVICE AND NOT TO THE BOTTOM OF THE CURTAIN.
7. WEIGHTS SHALL BE LOCATED AT 10' INTERVALS ALONG LENGTH OF CURTAIN. WEIGHTS SHALL BE A MINIMUM OF 5 POUNDS AND EXTEND 12" BELOW THE CURTAIN.
8. FLOATS SHALL BE SPACED ON 5' INTERVALS WITH A MINIMUM OF 2 FLOATS FOR EACH CURTAIN.
9. OIL BOOM MATERIAL, TYPE, AND HEIGHT SHALL BE SUBJECT TO ENGINEER APPROVAL.
10. BUOYANCY PROVIDED BY THE FLOAT SHALL BE SUFFICIENT TO SUPPORT THE WEIGHT OF THE TURBIDITY CURTAIN AND MAINTAIN A MINIMUM FREEBOARD OF 6" ABOVE THE WATER SURFACE.

TURBIDITY CURTAIN AND OIL BOOM

SCALE: NTS

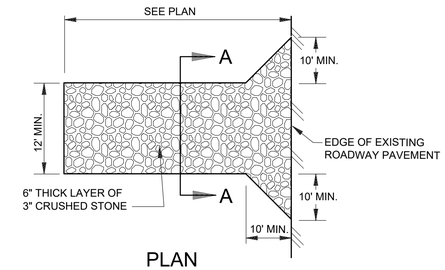


NOTES:

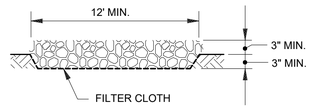
1. THE GALVANIZED ANCHOR CHAIN MAY BE REMOVED IN AREAS OF LOWER FLOW (I.E. TRIBUTARIES) AND IF APPROVED BY THE OWNER'S REPRESENTATIVE.

ANCHOR DETAIL

SCALE: NTS



PLAN



SECTION A-A

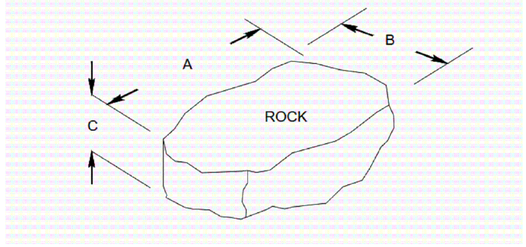
TEMPORARY CONSTRUCTION ENTRANCE

NOT TO SCALE

STREAM SUBSTRATE MIXTURE SPECIFICATIONS

STREAM SUBSTATE BED MIXTURE UTILIZED IN THE BED OF THE STREAM WITHIN THE STREAM CHANNEL TO PROVIDE A STABLE SUBSTRATE OR FILL AREA.

GENERALLY, STREAM SUBSTRATE MIXTURE SHALL CONSIST OF LARGE STONE MIXED WITH SMALL STONE, AND FINE AGGREGATE. THE STREAM SUBSTRATE MIXTURE MUST MEET THE MATERIAL SPECIFICATIONS PROVIDED IN THE TABLE BELOW.

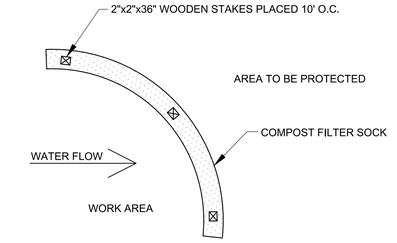


1. EACH STREAM SUBSTRATE MIXTURE SHALL CONTAIN THE PERCENTAGE BY VOLUME OF THE MATERIALS SPECIFIED IN THE STREAM SUBSTRATE MIXTURE TABLE.
2. SUBSTRATE WILL BE NATURAL IN COLOR (BROWN, YELLOW, TAN OR GRAY). NO WHITE ROCK SHALL BE ALLOWED.
3. SUBSTRATE SHALL BE FREE OF IMPURITIES AND CONTAMINANTS
4. SUBSTRATE SHALL BE NATURAL AND FREE OF SLAG.
5. SIZING IS BASED ON THE INTERMEDIATE B-AXIS OF THE ROCK.
6. FOR MIN. THICKNESS DEPTHS GREATER THAN 1.5 FEET THE BED MIXTURE SHOULD BE PLACED IN LIFTS NO GREATER THAN 12 INCHES. THE CONTRACTOR SHALL INSPECT THE INSTALLATION OF STREAM SUBSTRATE MIXTURE TO ENSURE THE PLACEMENT IS INSTALLED AS HOMOGENEOUS AS POSSIBLE VISUALLY FREE OF LARGE VOIDS. LARGE VOIDS SHOULD BE WASHED WITH ADDITIONAL FINE AGGREGATE OR SALVAGABLE STREAM BED MATERIAL IF NEEDED.
7. ADDITIONAL AVAILABLE ON SITE SALVAGABLE STREAM BED MATERIAL SHOULD BE BLENDED AND BACKWASHED INTO THE ROCK TO FILL VOIDS, IF NECESSARY.
8. REFER TO THE GRADING PLAN AND PROFILE FOR THE LIMITS OF PLACEMENT.

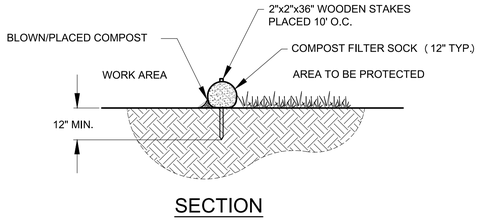
STREAM SUBSTRATE MIXTURE TABLE

ID	MATERIAL CATEGORY	INTERMIEDIATE B-AXIS SIZE RANGE	APPROX. % BY VOLUME	MIN. THICKNESS (FT)
RIFFLE/RUN/GLIDE	LARGE STONE	MASS DOT CLASS 4 RIPRAP D50 = 14"	20%	2.0'
	SMALL STONE	MASS DOT CLASS 3 RIPRAP D50 = 10"	60%	
	FINE AGGREGATE	SALVAGED STREAM BED MIXTURE OR COMPARABLE AGGREGATE SIZE D50 = 2.5"	20%	
POOL	SMALL STONE	SALVAGED STREAM BED MIXTURE OR COMPARABLE AGGREGATE SIZE D50 = 2.5"	100%	1.0'

STREAM SUBSTRATE MIXTURE TABLE AND SPECS



PLAN



SECTION

NOTES:

1. SEE SPECIFICATION FOR COMPOST FILTER SOCK AND COMPOST FILL MATERIAL REQUIREMENTS.

COMPOST SILT SOCK

NOT TO SCALE

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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Drawn By:	**SN**
Dept Check:	**CB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

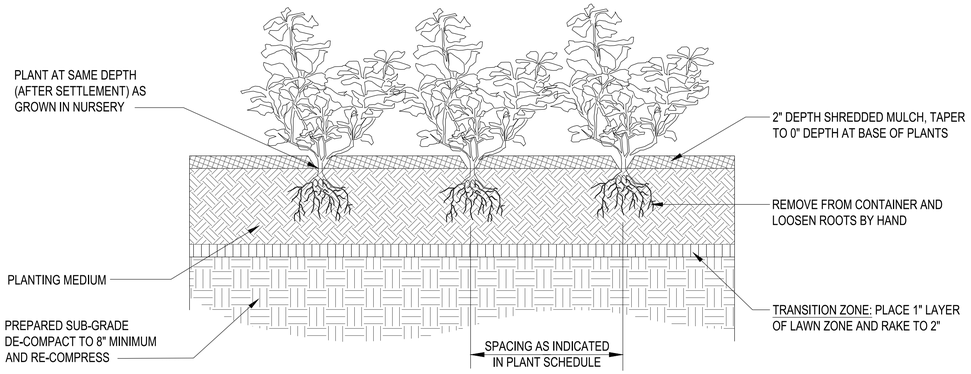
BEL AIR DAM REMOVAL

CIVIL DETAILS

SHEET NUMBER

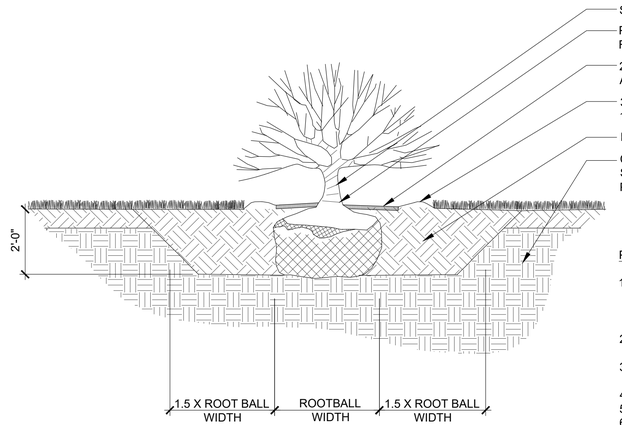
99 C-501

PATH/FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\99 C-501 BEL.DWG
LAST UPDATE: Wednesday, June 5, 2024 12:31:05 PM
PLOT DATE: Monday, June 24, 2024 10:31:39 AM



PERENNIAL PLANTING

NOT TO SCALE

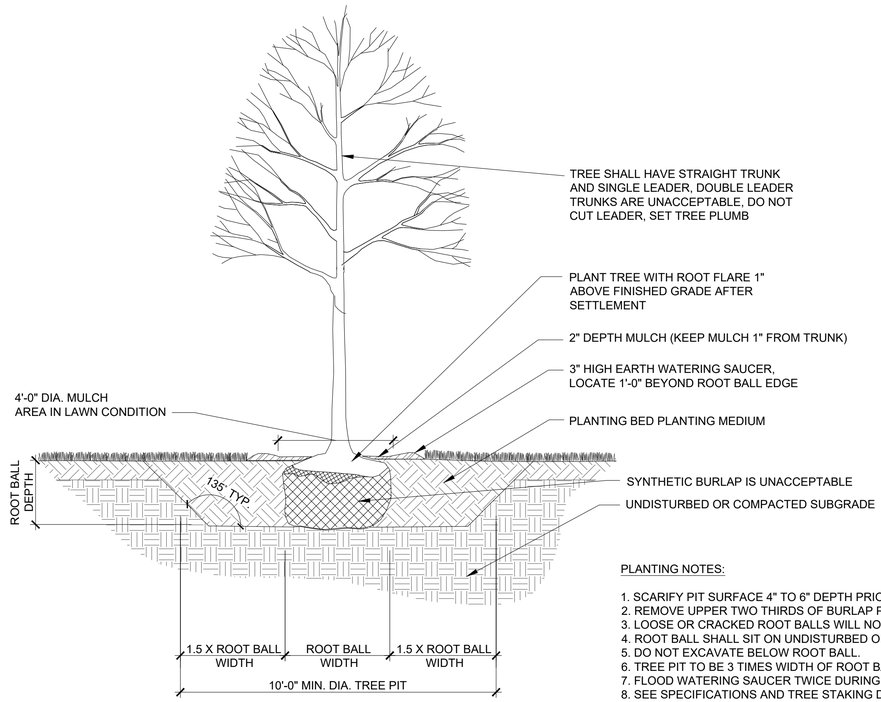


SHRUB PLANTING

NOT TO SCALE

PLANTING NOTES:

1. REMOVE UPPER THIRD OF BURLAP PRIOR TO BACKFILLING, IF CONTAINERIZED, REMOVE PLANTS FROM POTS PRIOR TO PLANTING AND SCARIFY ROOT BALL IN FOUR PLACES TO ½" DEPTH.
2. LOOSE OR CRACKED ROOT BALLS WILL NOT BE ACCEPTED FOR PLANTING.
3. ROOT BALL SHALL SIT ON UNDISTURBED OR COMPACTED SUBGRADE.
4. DO NOT EXCAVATE BELOW ROOT BALL.
5. PLANTING PIT TO BE 3 TIMES WIDTH OF ROOT BALL.
6. FLOOD WATERING SAUCER TWICE DURING FIRST 24 HOURS AFTER PLANTING.
7. RAISE AND REPLANT SHRUBS THAT SETTLE AFTER PLANTING AND WATERING.



DECIDUOUS TREE PLANTING IN BED OR LAWN

NOT TO SCALE

PLANTING NOTES:

1. SCARIFY PIT SURFACE 4" TO 6" DEPTH PRIOR TO PLANTING.
2. REMOVE UPPER TWO THIRDS OF BURLAP PRIOR TO BACKFILLING.
3. LOOSE OR CRACKED ROOT BALLS WILL NOT BE ACCEPTED FOR PLANTING.
4. ROOT BALL SHALL SIT ON UNDISTURBED OR COMPACTED SUBGRADE.
5. DO NOT EXCAVATE BELOW ROOT BALL.
6. TREE PIT TO BE 3 TIMES WIDTH OF ROOT BALL OR 10'-0" DIA. MINIMUM.
7. FLOOD WATERING SAUCER TWICE DURING FIRST 24 HOURS AFTER PLANTING.
8. SEE SPECIFICATIONS AND TREE STAKING DETAIL FOR TREE STAKING.
9. NO WIRE BASKETS WILL BE ACCEPTED.

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PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
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Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

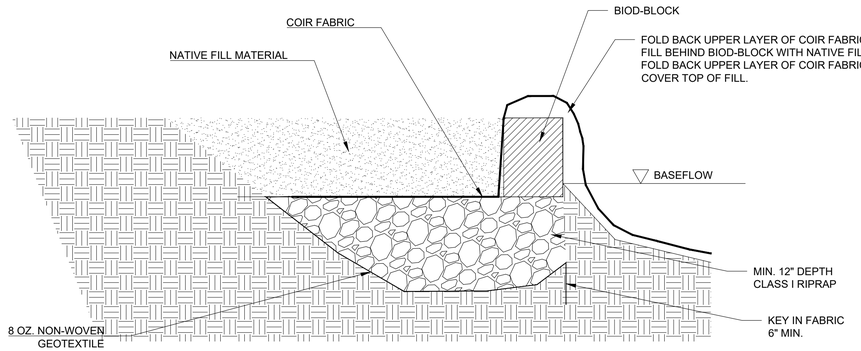
BEL AIR DAM REMOVAL

CIVIL DETAILS II

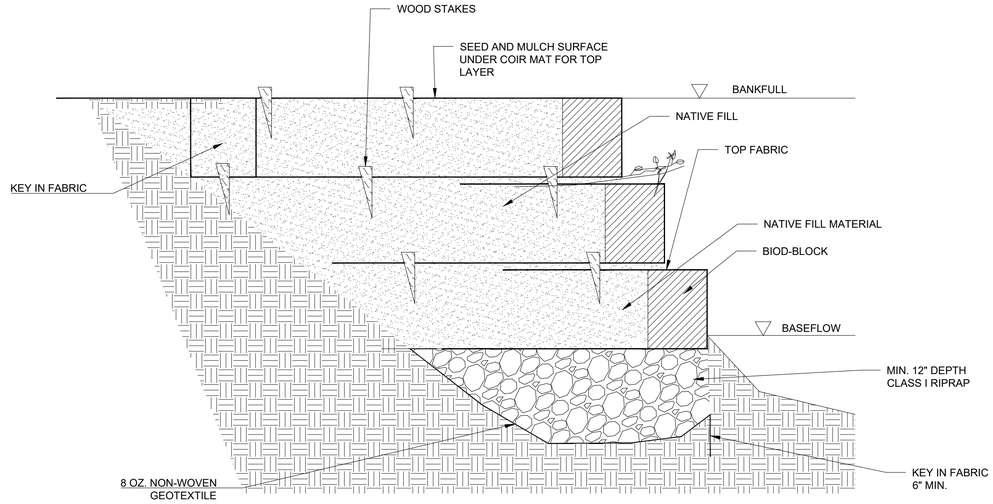
SHEET NUMBER

99 C-502

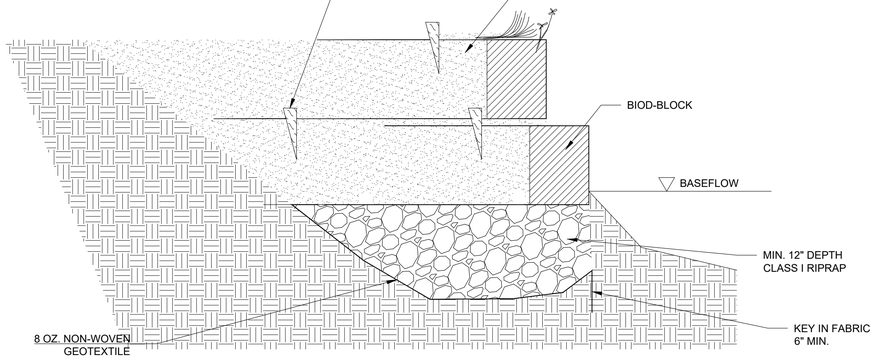
PATH/FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CBEL AIR\99 C-502 BEL.DWG
LAST UPDATE: Friday, May 31, 2024 6:21:06 AM
PLOT DATE: Monday, June 24, 2024 10:32:03 AM



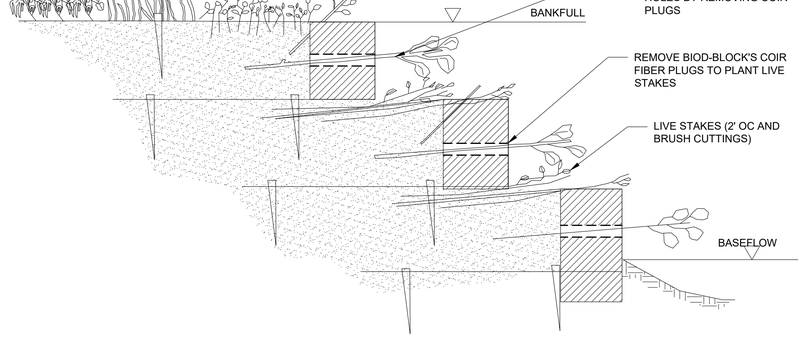
STEP 1



STEP 3



STEP 2



STEP 4

1 / R-7.3 BIOD-BLOCK COIR BLOCK SYSTEM

NOT TO SCALE

NOTES

1. TO MAKE 12-IN TALL SOIL LIFTS, USE BIOD-BLOCK 12-300. TO MAKE 16 IN TALL SOIL LIFTS, USE BIOD-BLOCK 16-300 OR BIOD-BLOCK 16-400 WHICH HAS LONGER FABRIC AND WILL INCREASE THE SAFETY OF THE CONSTRUCTED SOIL LIFTS.
2. PLACE BIOD-BLOCK UNIT ON LEVEL SURFACE, KEEPING THE FEMALE END TOWARDS DOWNSTREAM DIRECTION.
3. USE MINIMUM 2 IN X 2 IN X 24 IN WOOD STAKES AT EVERY 2 FT. TO ANCHOR THE BOTTOM FABRIC TO THE GROUND BEFORE FILLING WITH SOIL AND 2 IN X 2 IN X 36 IN WOOD STAKES ON THE TOP FABRIC AFTER FILLING WITH SOIL.
4. REPEAT THE COIR BLOCK INSTALLATION PROCEDURE DESCRIBED ABOVE TO MAKE SOIL LIFT LAYERS AS NEEDED TO BANKFULL ELEVATION.
5. EACH PLANTING HOLE IS PRE-FILLED WITH A COIR FIBER PLUG. LIVE PLANT CUTTING CAN BE PLANTED THROUGH THESE HOLES DURING CONSTRUCTION OR LATER. COIR FIBER PLUGS CAN BE EASILY PULLED OUT TO EXPOSE THE HOLE IN THE MIDDLE OF THE FIBER BLOCK. WHEN PLANTING THROUGH THE BLOCK IS NECESSARY, REMOVE THE COIR PLUG AND INSERT LIVE PLANT THROUGH THE HOLE INTO THE MIDDLE OF THE SOIL LAYER.
6. REINFORCED SOIL COIR LIFT MAY BE USED IN PLACE OF BIOD-BLOCK WHERE APPLICABLE.

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DISCIPLINE

CIVIL

SHEET TITLE

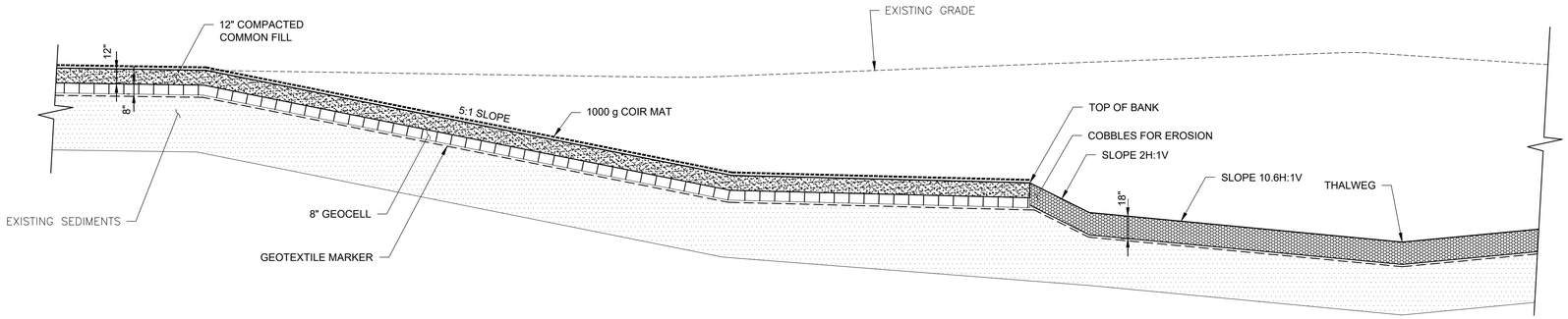
BEL AIR DAM REMOVAL

CIVIL DETAILS III

SHEET NUMBER

99 C-503

PATH/FILENAME: C:\USERS\NAPOLITANOS.NA\ONEDRIVE - AECOM\60604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\CBEL AIR\99 C-503 BEL.DWG
LAST UPDATE: Friday, May 31, 2024 6:06:54 AM
PLOT DATE: Monday, June 24, 2024 10:32:16 AM

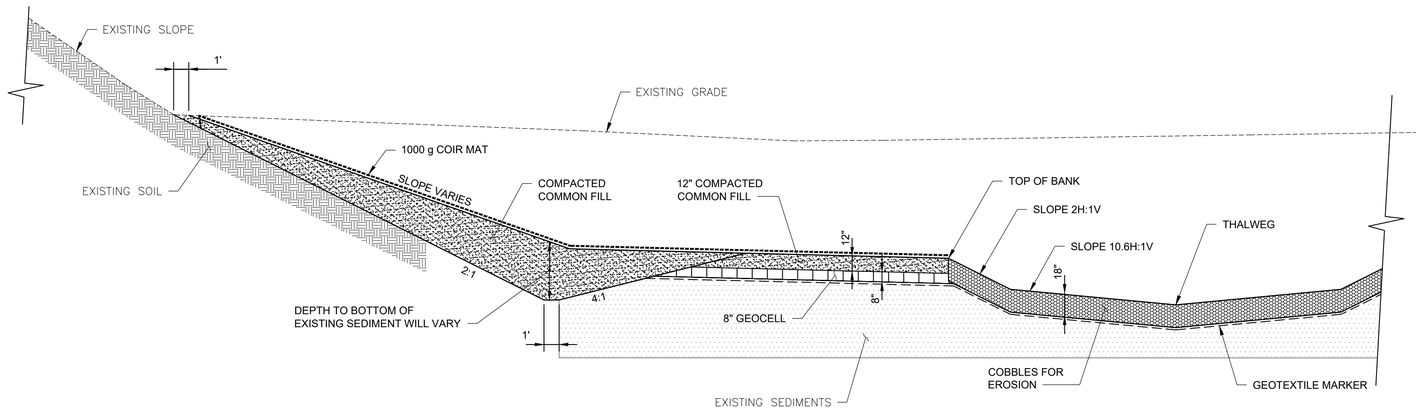


NOTE:

EXTEND GEOCELL AND COMMON GRANULAR FILL COVER TO TOE OF WESTERN SLOPE ALONG WAHCONAH STREET AND/OR TOE OF EASTERN SLOPE BEHIND RESIDENCES ON LENOX AVENUE.

TYPICAL DETAIL - IMPACTED SEDIMENT SLOPE

SCALE: 1" = 5'



NOTE:

COMPACTED COMMON FILL SHALL CONTAIN LESS THAN 20% FINES AND SHALL BE COMPACTED TO 90% OF THE MATERIAL'S MODIFIED PROCTOR. ONLY ORGANIC SILTS/SEDIMENTS SHALL BE EXCAVATED.

TYPICAL DETAIL - SEDIMENT REPLACEMENT

SCALE: 1" = 5'

1"=5' 5' 0 5' 10'

AECOM

PROJECT

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DISCIPLINE

CIVIL

SHEET TITLE

BEL AIR DAM REMOVAL

CIVIL DETAILS IV

SHEET NUMBER

99 C-504

Attachment K
Construction Sequence

Bel Air Dam Removal – Preliminary Construction Sequence.

1) Mobilization
   a) Install temporary fencing.
   b) Install erosion control measures.
   c) Install site office/ trailer, lab, and ancillary structures at staging area.
   d) Begin site clearing.
2) Construct / upgrade site access
   a) Construct truck entrance and exit upstream of the impoundment.
   b) Reinforce / rebuild temporary pedestrian bridge crossing at dam.
3) Construct / upgrade sediment transfer route
   a) Construct ramp(s) to access excavation / sediment removal area.
   b) Install traffic management for Wahconah street lane closure.
   c) Repair or upgrade sediment staging area access bridge as necessary.
4) Sediment staging area preparation
   a) Mark limits of staging area including existing concrete pad. No or limited clearing is anticipated.
   b) Mobilize materials to the staging area such as bins, truck decontamination pad, etc.
   c) Install liner, storage tank, etc.
   d) Mobilize other ancillary equipment.
5) Water diversion facility / bypass
   a) Install turbidity barrier and sediment removal bags.
   b) Install cofferdam upstream (immediately downstream of Wahconah St. bridge).
   c) Construct transfer channel from bridge to sluiceway along left bank (above current ws elev.).
6) Sediment removal and disposal
   a) Excavate, construct temporary slope support, etc.
   b) Dewater.
   c) Load and transfer to staging area.
   d) Stockpile, test, and hold sediments.
   e) Load and transfer to appropriate disposal facility(ies).
7) Regrade stream, floodplain, and banks
   a) Install geotextile and geocell.
   b) Place and compact clean granular fill and channel substrate per the plans.
   c) Build up banks as necessary to meet final grading.
8) Remove dam structure and pedestrian bridge
9) Replant and landscape the site / stream
10) Install permanent fencing and site access
11) Demobilize

Attachment L
Sediment Analysis

AECOM

Table 1
Bel Air Dam Sediment Results

Method	SW7474		SW7470A		6020B																SW6010D							
Analyte	Mercury, Total		Mercury, TCLP		Arsenic, Total		Cadmium, Total		Chromium, Total		Chromium, Total 2/17/22		Chromium, Hexavalent 2/17/22		Copper, Total		Lead, Total		Nickel, Total		Zinc, Total		Arsenic, TCLP		Barium, TCLP		Cadmium, TCLP		Chromium, TCLP	
Unit	mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/l		mg/l		mg/l		mg/l	
RCS-1	20				20		70		100		100		100		1000		200		600		1000									
RCS-2	30				20		100		200		200		200		10000		600		1000		3000									
EPA RCRA Standard			0.2																				5		100		1		5	
Beneficial Reuse					40				1000		1000		1000				2000													
COMP1																														
COMP2																														
COMP3																														
COMP4																														
COMP5																														
COMP6																														
DUPE 11/17/21	1.28				11.6		3.53		574						237		184		23.9		361									
SS BA07-0-3	0.052				8.8		0.344		9.17						16.6		12.9		19.5		59									
SS BA08-0-2.5	0.148				29.6		0.274	J	29.6						43.6		33.5		32.1		109									
SS BA09-0-1	7.87				11.3		0.627		416		540		1.34	U	618		105		20.4		159									
SS BA09-1-4	4.52				8.72		0.316	J	238		580		1.32	U	495		101		18.2		104									
SS BA10-0-4.25	0.145				10.8		0.292	J	34.5						90.7		31.7		18.3		78.4									
SS BA11-0-4	0.704				13.8		1.62		663		66		1.03	U	122		221		21.4		512									
SS BA11-4-6.25	1.01				24.6		0.814		1350						332		236		21.3		292									
SS BA12-0-3.5	1.39		0.001	U	26.5		1.96		1040						346		266		23.7		670		0.026	J	0.32	J	0.013	J	0.056	J
SS BA12-3.5-5.4	1.11				7.66		0.319	J	104						159		69		19.6		92.5									
SS BA13-0-2.5	0.795				9.22		10.7		362						101		226		18.9		321									
SS BA13-2.5-6.75	1.29				32.5		2.58		1130						308		220		22		459									
SS BA14-0-3.5	0.082				4.71		0.362		22.2						25.3		91.6		11.3		93									
SS BA14-3.5-7	0.839				11.4		4.66		151						86.9		325		25.9		287									
SS BA14-7-10.5	1.68				32.4		2.21		810						261		262		25.6		503									
SS BA15-0-4	0.808				13.2		1.5		734						157		264		25.2		868									
SS BA15-4-8	1.98				25.6		1.78		1100						325		241		21.7		461									
SS BA16-0-4.75	1.03				12.2		2.94		518						158		213		20.3		790									
SS BA17-0-6.5	0.957				15.4		3.47		598						158		216		23.7		546									
SS BA17-6.5-9.3	14.3				11.4		0.633		377						500		83		19.7		136									
SS BA18-0-4.25	0.302		0.001	U	5.98		1.14		68.7						48.6		138		15.5		164		1	U	0.239	J	0.01	J	0.2	U
SS BA18-4.25-11.9	1.94		0.001	U	23.2		2.16		1290						216		232		23.7		719		1	U	0.332	J	0.013	J	0.063	J
SS BA19-0-4	0.412				8.96		2.11		1090						65.5		151		13.9		580									
SS BA19-4-10	7.07				15		1.66		549						473		123		27.8		213									
SS BA20-0-6.5	0.316				4.96		0.924		44.7						33.8		165		12.7		131									
SS BA20-6.5-9	1.65				11		5.08		317						129		258		23.2		311									
SS BA21-0-5	0.259				5.72		0.666		54.4						42.4		116		15.5		142									
SS BA21-5-7.5	1.59		0.001	U	12		2.74		1050						119		304		23.6		465		0.022	J	0.316	J	0.1	U	0.048	J
SS BA21-7.5-10.5	1.33				17.6		1.89		772						344		246		21.2		500									
SS BA22-0-1	0.288				4.98		0.569		386						39.5		66.1		11		164									
SS BA22-1-4	6.16				22.4		2.15		1270						400		218		20.6		553									
SS BA22-4-9	0.078		0.001	U	4.38		0.082	J	15.6						26.7		9.73		16.9		46.4		1	U	0.181	J	0.1	U	0.2	U
SS BA23-0-0.5	0.153				17.3		0.425	J	38.6						77.3		46.2		47.4		218									

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Table 1
Bel Air Dam Sediment Results

Method							8270D-SIM/680(M)															
Analyte	Lead, TCLP		Selenium, TCLP		Silver, TCLP		2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene		Benz(a)anthracene		Benzo(a)pyrene		Benzo(b)fluoranthene	
Unit	mg/l		mg/l		mg/l		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1							700		4000		1000		1000000		7000		2000		7000	
RCS-2							80000		3000000		3000000		3000000		40000		7000		40000	
EPA RCRA Standard	5																			
Beneficial Reuse																				
COMP1							752		1910		3430		4120		9830		10100		12300	
COMP2							562		756		1030		1820		5690		5840		4790	
COMP3							377		219		697		832		2220		2220		2600	
COMP4							800		725		1540		2510		6290		6700		6180	
COMP5							567		994		258		6090		9800		7140		8480	
COMP6							8860		7210		485		17600		15000		11000		8240	
DUPE 11/17/21																				
SS BA07-0-3							5.2	U	5.2	U	5.2	U	2.7	J	10.1		6.62		8.02	
SS BA08-0-2.5																				
SS BA09-0-1																				
SS BA09-1-4																				
SS BA10-0-4.25																				
SS BA11-0-4							375		206		532		862		2840		2410		2240	
SS BA11-4-6.25							640		793		346		1060		3390		2240		2080	
SS BA12-0-3.5	0.311	J	0.5	U	0.1	U														
SS BA12-3.5-5.4																				
SS BA13-0-2.5																				
SS BA13-2.5-6.75																				
SS BA14-0-3.5																				
SS BA14-3.5-7																				
SS BA14-7-10.5																				
SS BA15-0-4							780		849		1020		3140		10000		7090		6080	
SS BA15-4-8							515		279		799		1830		5250		4850		3580	
SS BA16-0-4.75																				
SS BA17-0-6.5																				
SS BA17-6.5-9.3																				
SS BA18-0-4.25	0.32	J	0.5	U	0.1	U														
SS BA18-4.25-11.9	0.233	J	0.5	U	0.1	U														
SS BA19-0-4																				
SS BA19-4-10																				
SS BA20-0-6.5																				
SS BA20-6.5-9																				
SS BA21-0-5																				
SS BA21-5-7.5	0.249	J	0.5	U	0.1	U														
SS BA21-7.5-10.5																				
SS BA22-0-1																				
SS BA22-1-4																				
SS BA22-4-9	0.045	J	0.5	U	0.1	U														
SS BA23-0-0.5																				

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Table 1
Bel Air Dam Sediment Results

Method																				
Analyte	Benzo(ghi)perylene		Benzo(k)fluoranthene		Chrysene		Dibenz(a,h)anthracene		Fluoranthene		Fluorene		Indeno(1,2,3-cd)Pyrene		Naphthalene		Phenanthrene		Pyrene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1	1000000		70000		70000		700		1000000		1000000		7000		4000		10000		1000000	
RCS-2	3000000		400000		400000		4000		3000000		3000000		40000		20000		1000000		3000000	
EPA RCRA Standard																				
Beneficial Reuse																				
COMP1	6570		5310		10900		1400		27400	E	2770		6500		1480		22800	E	20500	
COMP2	4060		6040		6050		890		12200		853		4100		1210		9850		10900	
COMP3	1410		1280		2500		324		5500		478		1410		330		4380		4300	
COMP4	4230		5310		7300		831		17100	E	1330		3990		2620		11600		10900	
COMP5	2720		2770		7700		828		14700		2140		2920		506		15000		11400	
COMP6	3800		8080		13000		1320		29200		9670		4760		5940		39300		23900	
DUPE 11/17/21																				
SS BA07-0-3	6.45		8.8		11.2		5.2	U	16.9		5.2	U	6.19		5.74		10.1		20.6	
SS BA08-0-2.5																				
SS BA09-0-1																				
SS BA09-1-4																				
SS BA10-0-4.25																				
SS BA11-0-4	1480		1910		3090		346		5560		338		1510		663		3340		4720	
SS BA11-4-6.25	1240		1770		3390		422		6260		1010		1270		869		4710		5920	
SS BA12-0-3.5																				
SS BA12-3.5-5.4																				
SS BA13-0-2.5																				
SS BA13-2.5-6.75																				
SS BA14-0-3.5																				
SS BA14-3.5-7																				
SS BA14-7-10.5																				
SS BA15-0-4	3740		5450		8760		960		15700		1070		4020		1290		11500		14400	
SS BA15-4-8	2700		3980		6540		621		12400		614		2660		1360		5840		9910	
SS BA16-0-4.75																				
SS BA17-0-6.5																				
SS BA17-6.5-9.3																				
SS BA18-0-4.25																				
SS BA18-4.25-11.9																				
SS BA19-0-4																				
SS BA19-4-10																				
SS BA20-0-6.5																				
SS BA20-6.5-9																				
SS BA21-0-5																				
SS BA21-5-7.5																				
SS BA21-7.5-10.5																				
SS BA22-0-1																				
SS BA22-1-4																				
SS BA22-4-9																				
SS BA23-0-0.5																				

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Table 1
Bel Air Dam Sediment Results

Method																															
Analyte		Total PAHs	Cl10-BZ#209		Cl2-BZ#8		Cl3-BZ#18		Cl3-BZ#28		Cl4-BZ#44		Cl4-BZ#49		Cl4-BZ#52		Cl4-BZ#66		Cl5-BZ#101		Cl5-BZ#105		Cl5-BZ#118		Cl5-BZ#87		Cl6-BZ#128		Cl6-BZ#138	
Unit		ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1																															
RCS-2																															
EPA RCRA Standard																															
Beneficial Reuse		100000																													
COMP1	E	148072	58.7		7.04	U	7.04	U	7.04	U	7.04	U	7.04	U	7.04	U	7.04	U	30.6		7.04	U	7.04	U	7.04	U	7.04	U	53.4	
COMP2		76641	14.8		8.16	U	8.16	U	8.16	U	8.16	U	8.16	U	8.16	U	8.16	U	7.68	J	8.16	U	8.16	U	8.16	U	8.16	U	23.9	
COMP3		31077	32.2		3	U	3	U	3	U	3	U	3	U	3	U	3	U	19.1		3	U	3	U	3	U	3	U	25.6	
COMP4		89956	69.4		7.52	U	7.52	U	7.52	U	7.52	U	7.52	U	7.52	U	7.52	U	35.8		7.52	U	7.52	U	7.52	U	7.52	U	60.1	
COMP5		94013	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U
COMP6		207365	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U
DUPE 11/17/21																															
SS BA07-0-3		139.42	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
SS BA08-0-2.5																															
SS BA09-0-1																															
SS BA09-1-4																															
SS BA10-0-4.25																															
SS BA11-0-4		32422	143		7.16	U	7.16	U	7.16	U	7.16	U	7.16	U	32.4		7.16	U	31		11.1		33.5		13.9		6.84	J	36	
SS BA11-4-6.25		37410	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U	10		7.8		6.86	U	6.86	U	11.7		6.86	U	6.86	U	6.86	U
SS BA12-0-3.5																															
SS BA12-3.5-5.4																															
SS BA13-0-2.5																															
SS BA13-2.5-6.75																															
SS BA14-0-3.5																															
SS BA14-3.5-7																															
SS BA14-7-10.5																															
SS BA15-0-4		95849	419		32.3	U	32.3	U	32.3	U	32.3	U	32.3	U	71.5		32.3	U	72.3		32.3	U	118		32.3	U	32.3	U	79	
SS BA15-4-8		63728	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U
SS BA16-0-4.75																															
SS BA17-0-6.5																															
SS BA17-6.5-9.3																															
SS BA18-0-4.25																															
SS BA18-4.25-11.9																															
SS BA19-0-4																															
SS BA19-4-10																															
SS BA20-0-6.5																															
SS BA20-6.5-9																															
SS BA21-0-5																															
SS BA21-5-7.5																															
SS BA21-7.5-10.5																															
SS BA22-0-1																															
SS BA22-1-4																															
SS BA22-4-9																															
SS BA23-0-0.5																															

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Table 1
Bel Air Dam Sediment Results

Method																9060A						D6913/D7928			
Analyte	Cl6-BZ#153		Cl7-BZ#170		Cl7-BZ#180		Cl7-BZ#183		Cl7-BZ#184		Cl7-BZ#187		Cl8-BZ#195		Cl9-BZ#206		Total Organic Carbon (Average)		Total Organic Carbon (Rep1)		Total Organic Carbon (Rep2)		Cobbles		% Coarse Gravel	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		%		%		%		%		%	
RCS-1																										
RCS-2																										
EPA RCRA Standard																										
Beneficial Reuse																										
COMP1	38.4		18.1		29.9		6.27	J	7.04	U	15		7.04	U	45.4		8.95		9.25		8.65					
COMP2	19.2		15.9		18.9		8.16	U	8.16	U	9.29		8.16	U	14.9		7.5		7.89		7.11					
COMP3	25		11		14.1		3.3		3	U	6.1		3	U	27		4.93		5.19		4.68					
COMP4	43.8		21.9		35.6		7.55		7.52	U	16.6		7.52	U	61.1		9.23		8.36		10.1					
COMP5	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.18	U	8.52		8.59		8.45					
COMP6	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U	34.1	U										
DUPE 11/17/21																							0.1	U	0.1	U
SS BA07-0-3	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U							0.1	U	0.1	U
SS BA08-0-2.5																							0.1	U	0.1	U
SS BA09-0-1																							0.1	U	0.1	U
SS BA09-1-4																							0.1	U	0.1	U
SS BA10-0-4.25																							0.1	U	0.1	U
SS BA11-0-4	23.3		9.93		12		4.43	J	7.16	U	6.52	J	7.16	U	134								0.1	U	0.1	U
SS BA11-4-6.25	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U	6.86	U							0.1	U	0.1	U
SS BA12-0-3.5																							0.1	U	0.1	U
SS BA12-3.5-5.4																							0.1	U	0.1	U
SS BA13-0-2.5																							0.1	U	0.1	U
SS BA13-2.5-6.75																							0.1	U	0.1	U
SS BA14-0-3.5																							0.1	U	0.1	U
SS BA14-3.5-7																							0.1	U	0.1	U
SS BA14-7-10.5																							0.1	U	0.1	U
SS BA15-0-4	62.2		20.3	J	28.5	J	32.3	U	32.3	U	17.1	J	32.3	U	407								0.1	U	0.1	U
SS BA15-4-8	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U	16.6	U							0.1	U	0.1	U
SS BA16-0-4.75																							0.1	U	0.1	U
SS BA17-0-6.5																							0.1	U	0.1	U
SS BA17-6.5-9.3																							0.1	U	0.1	U
SS BA18-0-4.25																							0.1	U	0.1	U
SS BA18-4.25-11.9																							0.1	U	0.1	U
SS BA19-0-4																							0.1	U	0.1	U
SS BA19-4-10																							0.1	U	0.1	U
SS BA20-0-6.5																							0.1	U	0.1	U
SS BA20-6.5-9																							0.1	U	0.1	U
SS BA21-0-5																							0.1	U	0.1	U
SS BA21-5-7.5																							0.1	U	0.1	U
SS BA21-7.5-10.5																							0.1	U	2.1	
SS BA22-0-1																							0.1	U	2.4	
SS BA22-1-4																							0.1	U	0.2	
SS BA22-4-9																							0.1	U	6.9	
SS BA23-0-0.5																							0.1	U	0.1	U

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Table 1
Bel Air Dam Sediment Results

Method										EPH-19-2.1							SW7.3				SW8081B					
Analyte	% Coarse Sand		% Fine Gravel		% Fine Sand		% Medium Sand		% Total Fines		C11-C22 Aromatics		C11-C22 Aromatics, Adjusted		C19-C36 Aliphatics		C9-C18 Aliphatics		Cyanide, Reactive		Sulfide, Reactive		Chlordane		Endrin		Heptachlor	
Unit	%		%		%		%		%		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		ug/l		ug/l		ug/l	
RCS-1											1000		1000		3000		1000											
RCS-2											3000		3000		5000		3000											
EPA RCRA Standard																												
Beneficial Reuse																												
COMP1											565		511		1260		336		10	U	30							
COMP2											1230		804		953		106		10	U	10	U						
COMP3											218		208		800		102		10	U	220							
COMP4											418		386		737		127		10	U	65							
COMP5											130		110		171		16.2		10	U	10	U						
COMP6											396		311		87.2		14.5											
DUPE 11/17/21	2.7		1		35.5		20.7		40.1																			
SS BA07-0-3	5.3		11.9		41.2		12.7		28.9		8.91	U	8.91	U	8.91	U	8.91	U										
SS BA08-0-2.5	7.3		4.6		34.6		29.6		23.9																			
SS BA09-0-1	4.2		1.9		39.3		12		42.6																			
SS BA09-1-4	1.5		0.3		34.4		13.3		50.5																			
SS BA10-0-4.25	4.7		3.6		36.1		17.5		38.1																			
SS BA11-0-4	0.9		0.2		31.1		14.2		53.6		391		375		919		116											
SS BA11-4-6.25	2.6		1.1		36.6		11.6		48.1		662		649		2080		139											
SS BA12-0-3.5	3.1		0.5		31.6		15.7		49.1										10	U	25		1	U	0.2	U	0.1	U
SS BA12-3.5-5.4	2.4		0.1	U	34.1		19		44.5																			
SS BA13-0-2.5	4.7		1.9		38.4		17.5		37.5																			
SS BA13-2.5-6.75	4.9		1.6		30.1		14.7		48.7																			
SS BA14-0-3.5	8.6		1.8		39.2		43.6		6.8																			
SS BA14-3.5-7	1.4		1.3		36.5		13.5		47.3										10	U	20							
SS BA14-7-10.5	3.6		6.7		27.6		13.7		48.4																			
SS BA15-0-4	4.6		5.4		44		19.8		26.2		695		638		2660		202											
SS BA15-4-8	5.3		0.9		28.2		18.8		46.8		738		722		1970		223											
SS BA16-0-4.75	3		0.5		34.6		18.5		43.4																			
SS BA17-0-6.5	0.7		0.1	U	29.5		12.5		57.3																			
SS BA17-6.5-9.3	1.1		0.2		29.2		11.4		58.1																			
SS BA18-0-4.25	1		0.3		33.6		9.2		55.9										10	U	21		1	U	0.2	U	0.1	U
SS BA18-4.25-11.9	2.6		1		32.2		17.2		47										10	U	10	U	1	U	0.2	U	0.1	U
SS BA19-0-4	1.6		0.7		48.8		10.6		38.3																			
SS BA19-4-10	1		1.2		22.7		17.6		57.5																			
SS BA20-0-6.5	1.2		0.1		27		14.3		57.4																			
SS BA20-6.5-9	1.2		0.1		28.7		16.5		53.5																			
SS BA21-0-5	0.3		0.1	U	38.4		7.4		53.9										10	U	10	U						
SS BA21-5-7.5	3.3		0.1		29.1		20.7		46.8										10	U	120		1	U	0.2	U	0.1	U
SS BA21-7.5-10.5	19.1		2.1		18.6		18.7		39.4										10	U	10	U						
SS BA22-0-1	13.1		11.1		31		20.9		21.5										10	U	17							
SS BA22-1-4	2.1		0.1		31.5		14.9		51.2										10	U	10	U						
SS BA22-4-9	20		7		20.2		34.6		11.3										10	U	10	U	1	U	0.2	U	0.1	U
SS BA23-0-0.5	2.8		2.3		10.1		7.4		77.4																			

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Table 1
Bel Air Dam Sediment Results

Method									SW8151A				SW8260C													
Analyte	Heptachlor epoxide		Lindane		Methoxychlor		Toxaphene		2,4,5-TP (Silvex)		2,4-D		1,1-Dichloroethene		1,2-Dichloroethane		1,4-Dichlorobenzene		2-Butanone		Benzene		Carbon tetrachloride	
Unit	ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
RCS-1																	700				2000			
RCS-2																					200000			
EPA RCRA Standard																			200000					
Beneficial Reuse																								
COMP1																								
COMP2																								
COMP3																								
COMP4																								
COMP5																								
COMP6																								
DUPE 11/17/21																								
SS BA07-0-3																								
SS BA08-0-2.5																								
SS BA09-0-1																								
SS BA09-1-4																								
SS BA10-0-4.25																								
SS BA11-0-4																								
SS BA11-4-6.25																								
SS BA12-0-3.5	0.1	U	0.1	U	1	U	1	U	0.005	U	0.025	U	5	U	5	U	25	U	22	J	5	U	5	U
SS BA12-3.5-5.4																								
SS BA13-0-2.5																								
SS BA13-2.5-6.75																								
SS BA14-0-3.5																								
SS BA14-3.5-7													5	U	5	U	25	U	50	U	5	U	5	U
SS BA14-7-10.5																								
SS BA15-0-4																								
SS BA15-4-8																								
SS BA16-0-4.75																								
SS BA17-0-6.5																								
SS BA17-6.5-9.3																								
SS BA18-0-4.25	0.1	U	0.1	U	1	U	1	U	0.005	U	0.025	U												
SS BA18-4.25-11.9	0.1	U	0.1	U	1	U	1	U	0.005	U	0.025	U	5	U	5	U	25	U	54		5	U	5	U
SS BA19-0-4																								
SS BA19-4-10																								
SS BA20-0-6.5																								
SS BA20-6.5-9																								
SS BA21-0-5													5	U	5	U	25	U	50	U	5	U	5	U
SS BA21-5-7.5	0.1	U	0.1	U	1	U	1	U	0.005	U	0.025	U	5	U	5	U	25	U	50	U	5	U	5	U
SS BA21-7.5-10.5													5	U	5	U	25	U	50	U	5	U	5	U
SS BA22-0-1													5	U	5	U	25	U	50	U	5	U	5	U
SS BA22-1-4													5	U	5	U	25	U	50	U	5	U	5	U
SS BA22-4-9	0.1	U	0.1	U	1	U	1	U	0.005	U	0.025	U	5	U	5	U	25	U	50	U	5	U	5	U
SS BA23-0-0.5																								

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Table 1
Bel Air Dam Sediment Results

Method										SW8260D							
Analyte	Chlorobenzene		Chloroform		Tetrachloroethene		Trichloroethene		Vinyl chloride	1,1,1,2-Tetrachloroethane		1,1,1-Trichloroethane		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane	
Unit	ug/l		ug/l		ug/l		ug/l		ug/l	ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1	1000																
RCS-2	3000																
EPA RCRA Standard																	
Beneficial Reuse																	
COMP1																	
COMP2																	
COMP3																	
COMP4																	
COMP5																	
COMP6																	
DUPE 11/17/21										0.5	U	0.5	U	0.5	U	1	U
SS BA07-0-3										0.27	U	0.27	U	0.27	U	0.54	U
SS BA08-0-2.5										0.21	U	0.21	U	0.21	U	0.42	U
SS BA09-0-1										69	U	69	U	69	U	140	U
SS BA09-1-4										64	U	64	U	64	U	130	U
SS BA10-0-4.25										0.62	U	0.62	U	0.62	U	1.2	U
SS BA11-0-4										68	U	68	U	68	U	140	U
SS BA11-4-6.25										53	U	53	U	53	U	110	U
SS BA12-0-3.5	5	U	7.5	U	5	U	5	U	10	U	0.36	U	0.36	U	0.36	U	0.73	U
SS BA12-3.5-5.4										66	U	66	U	66	U	130	U
SS BA13-0-2.5										61	U	61	U	61	U	120	U
SS BA13-2.5-6.75										85	U	85	U	85	U	170	U
SS BA14-0-3.5										0.37	U	0.37	U	0.37	U	0.75	U
SS BA14-3.5-7	5	U	7.5	U	5	U	5	U	10	U	66	U	66	U	66	U	130	U
SS BA14-7-10.5										96	U	96	U	96	U	190	U
SS BA15-0-4										0.73	U	0.73	U	0.73	U	1.5	U
SS BA15-4-8										110	U	110	U	110	U	210	U
SS BA16-0-4.75										61	U	61	U	61	U	120	U
SS BA17-0-6.5										53	U	53	U	53	U	110	U
SS BA17-6.5-9.3										0.51	U	0.51	U	0.51	U	1	U
SS BA18-0-4.25										52	U	52	U	52	U	100	U
SS BA18-4.25-11.9	5	U	7.5	U	5	U	5	U	10	U	73	U	73	U	73	U	150	U
SS BA19-0-4										64	U	64	U	64	U	130	U
SS BA19-4-10										1.1	U	1.1	U	1.1	U	2.2	U
SS BA20-0-6.5										1.1	U	1.1	U	1.1	U	2.2	U
SS BA20-6.5-9										1.3	U	1.3	U	1.3	U	2.6	U
SS BA21-0-5	5	U	7.5	U	5	U	5	U	10	U	1	U	1	U	1	U	2.1	U
SS BA21-5-7.5	2.1	J	7.5	U	5	U	5	U	10	U	110	U	110	U	110	U	220	U
SS BA21-7.5-10.5	5	U	7.5	U	5	U	5	U	10	U	89	U	89	U	89	U	180	U
SS BA22-0-1	5	U	7.5	U	5	U	5	U	10	U	0.68	U	0.68	U	0.68	U	1.4	U
SS BA22-1-4	5	U	7.5	U	5	U	5	U	10	U	0.92	U	0.92	U	0.92	U	1.8	U
SS BA22-4-9	5	U	7.5	U	5	U	5	U	10	U	0.54	U	0.54	U	0.54	U	1.1	U
SS BA23-0-0.5										1.6	U	1.6	U	1.6	U	3.2	U

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Table 1
Bel Air Dam Sediment Results

Method														
Analyte	1,1-Dichloroethane		1,1-Dichloroethene		1,1-Dichloropropene		1,2,3-Trichlorobenzene		1,2,3-Trichloropropane		1,2,4-Trichlorobenzene		1,2,4-Trimethylbenzene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1													1000000	
RCS-2													10000000	
EPA RCRA Standard														
Beneficial Reuse														
COMP1														
COMP2														
COMP3														
COMP4														
COMP5														
COMP6														
DUPE 11/17/21	1	U	1	U	0.5	U	2	U	2	U	2	U	130	
SS BA07-0-3	0.54	U	0.54	U	0.27	U	1.1	U	1.1	U	1.1	U	1.1	U
SS BA08-0-2.5	0.42	U	0.42	U	0.21	U	0.84	U	0.84	U	0.84	U	0.84	U
SS BA09-0-1	140	U	140	U	69	U	270	U	270	U	270	U	63	J
SS BA09-1-4	130	U	130	U	64	U	250	U	250	U	250	U	710	
SS BA10-0-4.25	1.2	U	1.2	U	0.62	U	2.5	U	2.5	U	2.5	U	0.97	J
SS BA11-0-4	140	U	140	U	68	U	270	U	270	U	270	U	58	J
SS BA11-4-6.25	110	U	110	U	53	U	210	U	210	U	210	U	210	J
SS BA12-0-3.5	0.73	U	0.73	U	0.36	U	1.4	U	1.4	U	1.4	U	0.28	J
SS BA12-3.5-5.4	130	U	130	U	66	U	260	U	260	U	260	U	77	J
SS BA13-0-2.5	120	U	120	U	61	U	240	U	240	U	240	U	270	
SS BA13-2.5-6.75	170	U	170	U	85	U	340	U	340	U	340	U	340	U
SS BA14-0-3.5	0.75	U	0.75	U	0.37	U	1.5	U	1.5	U	1.5	U	1.5	U
SS BA14-3.5-7	130	U	130	U	66	U	260	U	260	U	260	U	12000	
SS BA14-7-10.5	190	U	190	U	96	U	380	U	380	U	380	U	2000	
SS BA15-0-4	1.5	U	1.5	U	0.73	U	2.9	U	2.9	U	2.9	U	2	J
SS BA15-4-8	210	U	210	U	110	U	430	U	430	U	430	U	430	J
SS BA16-0-4.75	120	U	120	U	61	U	240	U	240	U	240	U	1100	
SS BA17-0-6.5	110	U	110	U	53	U	210	U	210	U	210	U	40	J
SS BA17-6.5-9.3	1	U	1	U	0.51	U	2	U	2	U	2	U	1.5	J
SS BA18-0-4.25	100	U	100	U	52	U	210	U	210	U	210	U	210	J
SS BA18-4.25-11.9	150	U	150	U	73	U	290	U	290	U	290	U	290	J
SS BA19-0-4	130	U	130	U	64	U	250	U	250	U	250	U	250	U
SS BA19-4-10	2.2	U	2.2	U	1.1	U	4.3	U	4.3	U	4.3	U	2	J
SS BA20-0-6.5	2.2	U	2.2	U	1.1	U	4.4	U	4.4	U	4.4	U	7.2	
SS BA20-6.5-9	2.6	U	2.6	U	1.3	U	5.2	U	5.2	U	5.2	U	18	
SS BA21-0-5	2.1	U	2.1	U	1	U	4.1	U	4.1	U	4.1	U	0.83	J
SS BA21-5-7.5	220	U	220	U	110	U	440	U	440	U	440	U	160	J
SS BA21-7.5-10.5	180	U	180	U	89	U	360	U	360	U	360	U	96	J
SS BA22-0-1	1.4	U	1.4	U	0.68	U	2.7	U	2.7	U	2.7	U	0.98	J
SS BA22-1-4	1.8	U	1.8	U	0.92	U	3.7	U	3.7	U	3.7	U	0.64	J
SS BA22-4-9	1.1	U	1.1	U	0.54	U	2.2	U	2.2	U	2.2	U	0.36	J
SS BA23-0-0.5	3.2	U	3.2	U	1.6	U	6.5	U	6.5	U	6.5	U	6.5	U

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Table 1
Bel Air Dam Sediment Results

Method															
Analyte	1,2-Dibromo-3-chloropropane		1,2-Dibromoethane		1,2-Dichlorobenzene		1,2-Dichloroethane		1,2-Dichloroethene, Total		1,2-Dichloropropane		1,3,5-Trimethylbenzene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1					9000								10000	
RCS-2					100000								100000	
EPA RCRA Standard														
Beneficial Reuse														
COMP1														
COMP2														
COMP3														
COMP4														
COMP5														
COMP6														
DUPE 11/17/21	3	U	1	U	1.2	J	1	U	1	U	1	U	0.46	J
SS BA07-0-3	1.6	U	0.54	U	1.1	U	0.54	U	0.54	U	0.54	U	1.1	U
SS BA08-0-2.5	1.3	U	0.42	U	0.84	U	0.42	U	0.42	U	0.42	U	0.84	U
SS BA09-0-1	410	U	140	U	270	U	140	U	140	U	140	U	31	J
SS BA09-1-4	380	U	130	U	250	U	130	U	130	U	130	U	210	J
SS BA10-0-4.25	3.7	U	1.2	U	2.5	U	1.2	U	1.2	U	1.2	U	2.5	U
SS BA11-0-4	410	U	140	U	100	J	140	U	140	U	140	U	270	U
SS BA11-4-6.25	320	U	110	U	210	U	110	U	110	U	110	U	210	J
SS BA12-0-3.5	2.2	U	0.73	U	1.4	U	0.73	U	0.73	U	0.73	U	0.25	J
SS BA12-3.5-5.4	400	U	130	U	260	U	130	U	130	U	130	U	57	J
SS BA13-0-2.5	370	U	120	U	25	J	120	U	120	U	120	U	52	J
SS BA13-2.5-6.75	510	U	170	U	340	U	170	U	170	U	170	U	340	J
SS BA14-0-3.5	2.2	U	0.75	U	1.5	U	0.75	U	0.75	U	0.75	U	1.5	U
SS BA14-3.5-7	400	U	130	U	260	U	130	U	130	U	130	U	52	J
SS BA14-7-10.5	580	U	190	U	380	U	190	U	190	U	190	U	55	J
SS BA15-0-4	4.4	U	1.5	U	0.5	J	1.5	U	1.5	U	1.5	U	0.58	J
SS BA15-4-8	640	U	210	U	430	U	210	U	210	U	210	U	430	J
SS BA16-0-4.75	370	U	120	U	77	J	120	U	120	U	120	U	410	J
SS BA17-0-6.5	320	U	110	U	210	U	110	U	110	U	110	U	210	J
SS BA17-6.5-9.3	3	U	1	U	2	U	1	U	1	U	1	U	0.68	J
SS BA18-0-4.25	310	U	100	U	210	U	100	U	100	U	100	U	210	J
SS BA18-4.25-11.9	440	U	150	U	290	U	150	U	150	U	150	U	290	J
SS BA19-0-4	380	U	130	U	250	J	130	U	130	U	130	U	250	J
SS BA19-4-10	6.5	U	2.2	U	4.3	U	2.2	U	2.2	U	2.2	U	1.1	J
SS BA20-0-6.5	6.6	U	2.2	U	4.3	J	2.2	U	2.2	U	2.2	U	0.86	J
SS BA20-6.5-9	7.7	U	2.6	U	6.5	U	2.6	U	2.6	U	2.6	U	3.8	J
SS BA21-0-5	6.2	U	2.1	U	4.1	U	2.1	U	2.1	U	2.1	U	4.1	U
SS BA21-5-7.5	670	U	220	U	440	U	220	U	220	U	220	U	440	J
SS BA21-7.5-10.5	530	U	180	U	360	U	180	U	180	U	180	U	82	J
SS BA22-0-1	4.1	U	1.4	U	1.1	J	1.4	U	1.4	U	1.4	U	2.7	U
SS BA22-1-4	5.6	U	1.8	U	3.7	U	1.8	U	1.8	U	1.8	U	3.7	U
SS BA22-4-9	3.2	U	1.1	U	2.2	U	1.1	U	1.1	U	1.1	U	2.2	U
SS BA23-0-0.5	9.7	U	3.2	U	6.5	U	3.2	U	3.2	U	3.2	U	6.5	U

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Table 1
Bel Air Dam Sediment Results

Method																			
Analyte	1,3-Dichlorobenzene		1,3-Dichloropropane		1,3-Dichloropropene, Total		1,4-Dichlorobenzene		1,4-Dioxane		2,2-Dichloropropane		2-Hexanone		Acetone		Benzene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1	3000						700								6000		2000	
RCS-2	200000														50000		200000	
EPA RCRA Standard																		
Beneficial Reuse																		
COMP1																		
COMP2																		
COMP3																		
COMP4																		
COMP5																		
COMP6																		
DUPE 11/17/21	2	U	2	U	0.5	U	2	U	80	U	2	U	10	U	130		0.6	
SS BA07-0-3	1.1	U	1.1	U	0.27	U	1.1	U	43	U	1.1	U	5.4	U	13	U	0.27	U
SS BA08-0-2.5	0.84	U	0.84	U	0.21	U	0.84	U	34	U	0.84	U	4.2	U	10	U	0.21	U
SS BA09-0-1	270	U	270	U	69	U	270	U	11000	U	270	U	1400	U	840	J	69	U
SS BA09-1-4	250	U	250	U	64	U	250	U	10000	U	250	U	1300	U	630	J	64	U
SS BA10-0-4.25	2.5	U	2.5	U	0.62	U	2.5	U	100	U	2.5	U	12	U	190		0.44	J
SS BA11-0-4	270	U	270	U	68	U	81	J	11000	U	270	U	1400	U	790	J	68	U
SS BA11-4-6.25	210	U	210	U	53	U	210	U	8500	U	210	U	1100	U	1100	E	53	U
SS BA12-0-3.5	1.4	U	1.4	U	0.36	U	1.4	U	58	U	1.4	U	7.3	U	190		0.36	U
SS BA12-3.5-5.4	260	U	260	U	66	U	260	U	10000	U	260	U	1300	U	800	E	66	J
SS BA13-0-2.5	240	U	240	U	61	U	30	J	9800	U	240	U	1200	U	640	J	61	U
SS BA13-2.5-6.75	340	U	340	U	85	U	340	U	14000	U	340	U	1700	U	1700	E	85	U
SS BA14-0-3.5	1.5	U	1.5	U	0.37	U	1.5	U	60	U	1.5	U	7.5	U	24		0.37	U
SS BA14-3.5-7	260	U	260	U	66	U	27	J	11000	U	260	U	1300	U	1300	U	66	U
SS BA14-7-10.5	380	U	380	U	96	U	380	U	15000	U	380	U	1900	U	1900	E	96	U
SS BA15-0-4	2.9	U	2.9	U	0.73	U	0.52	J	120	U	2.9	U	15	U	130		0.73	U
SS BA15-4-8	430	U	430	U	110	U	430	U	17000	U	430	U	2100	U	2100	E	110	U
SS BA16-0-4.75	240	U	240	U	61	U	97	J	9800	U	240	U	1200	U	670	J	61	U
SS BA17-0-6.5	210	U	210	U	53	U	28	J	8500	U	210	U	1100	U	530	E	53	U
SS BA17-6.5-9.3	2	U	2	U	0.51	U	2	U	81	U	2	U	10	U	120		0.51	U
SS BA18-0-4.25	210	U	210	U	52	U	210	U	8300	U	210	U	1000	U	1000	U	52	U
SS BA18-4.25-11.9	290	U	290	U	73	U	290	U	12000	U	290	U	1500	U	820	E	73	U
SS BA19-0-4	250	U	250	U	64	U	250	U	10000	U	250	U	1300	U	1300	U	64	U
SS BA19-4-10	4.3	U	4.3	U	1.1	U	4.3	U	170	U	4.3	U	22	U	260		1.1	U
SS BA20-0-6.5	4.4	U	4.4	U	1.1	U	4.3	J	180	U	4.4	U	22	U	260		1.1	J
SS BA20-6.5-9	5.2	U	5.2	U	1.3	U	4.8	J	210	U	5.2	U	26	U	660		1.1	J
SS BA21-0-5	4.1	U	4.1	U	1	U	4.1	U	160	U	4.1	U	21	U	120		1	U
SS BA21-5-7.5	440	U	440	U	110	U	78	J	18000	U	440	U	2200	U	2200	E	110	U
SS BA21-7.5-10.5	360	U	360	U	89	U	360	U	14000	U	360	U	1800	U	1200	E	89	U
SS BA22-0-1	0.23	J	2.7	U	0.68	U	1.3	J	110	U	2.7	U	14	U	310		0.68	U
SS BA22-1-4	3.7	U	3.7	U	0.92	U	3.7	U	150	U	3.7	U	18	U	150		0.92	U
SS BA22-4-9	2.2	U	2.2	U	0.54	U	2.2	U	86	U	2.2	U	11	U	36		0.54	U
SS BA23-0-0.5	6.5	U	6.5	U	1.6	U	6.5	U	260	U	6.5	U	32	U	170		1.6	U

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Table 1
Bel Air Dam Sediment Results

Method																					
Analyte	Bromobenzene		Bromochloromethane		Bromodichloromethane		Bromoform		Bromomethane		Carbon disulfide		Carbon tetrachloride		Chlorobenzene		Chloroethane		Chloroform	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1											100000				1000					
RCS-2											1000000				3000					
EPA RCRA Standard																				
Beneficial Reuse																				
COMP1																				
COMP2																				
COMP3																				
COMP4																				
COMP5																				
COMP6																				
DUPE 11/17/21	2	U	2	U	0.5	U	4	U	2	U	1.2	J	1	U	4.7		2	U	1.5	U
SS BA07-0-3	1.1	U	1.1	U	0.27	U	2.1	U	1.1	U	5.4	U	0.54	U	0.27	U	1.1	U	0.8	U
SS BA08-0-2.5	0.84	U	0.84	U	0.21	U	1.7	U	0.84	U	4.2	U	0.42	U	0.21	U	0.84	U	0.63	U
SS BA09-0-1	270	U	270	U	69	U	550	U	270	U	1400	U	140	U	69	U	270	U	210	U
SS BA09-1-4	250	U	250	U	64	U	510	U	250	U	1300	U	130	U	64	U	250	U	190	U
SS BA10-0-4.25	2.5	U	2.5	U	0.62	U	5	U	2.5	U	3.1	J	1.2	U	0.62	U	2.5	U	1.9	U
SS BA11-0-4	270	U	270	U	68	U	550	U	270	U	1400	J	140	U	150		270	U	200	U
SS BA11-4-6.25	210	U	210	U	53	U	420	U	210	U	1100	J	110	U	53	U	210	U	160	U
SS BA12-0-3.5	1.4	U	1.4	U	0.36	U	2.9	U	1.4	U	1.7	J	0.73	U	0.36	U	1.4	U	1.1	U
SS BA12-3.5-5.4	260	U	260	U	66	U	530	U	260	U	1300	J	130	U	66	U	260	U	200	U
SS BA13-0-2.5	240	U	240	U	61	U	490	U	240	U	1200	U	120	U	140		240	U	180	U
SS BA13-2.5-6.75	340	U	340	U	85	U	680	U	340	U	1700	J	170	U	85	U	340	U	250	U
SS BA14-0-3.5	1.5	U	1.5	U	0.37	U	3	U	1.5	U	7.5	U	0.75	U	0.37	U	1.5	U	1.1	U
SS BA14-3.5-7	260	U	260	U	66	U	530	U	260	U	1300	U	130	U	65	J	260	U	200	U
SS BA14-7-10.5	380	U	380	U	96	U	770	U	380	U	1900	J	190	U	96	U	380	U	290	U
SS BA15-0-4	2.9	U	2.9	U	0.73	U	5.9	U	2.9	U	2.6	J	1.5	U	1.3		2.9	U	2.2	U
SS BA15-4-8	430	U	430	U	110	U	850	U	430	U	2100	J	210	U	110	U	430	U	320	U
SS BA16-0-4.75	240	U	240	U	61	U	490	U	240	U	1200	J	120	U	370	U	240	U	180	U
SS BA17-0-6.5	210	U	210	U	53	U	420	U	210	U	1100	J	110	U	99	U	210	U	160	U
SS BA17-6.5-9.3	2	U	2	U	0.51	U	4.1	U	2	U	2.2	J	1	U	0.51	U	2	U	1.5	U
SS BA18-0-4.25	210	U	210	U	52	U	410	U	210	U	1000	J	100	U	52	U	210	U	160	U
SS BA18-4.25-11.9	290	U	290	U	73	U	580	U	290	U	1500	J	150	U	73	J	290	U	220	U
SS BA19-0-4	250	U	250	U	64	U	510	U	250	U	1300	J	130	U	33	J	250	U	190	U
SS BA19-4-10	4.3	U	4.3	U	1.1	U	8.6	U	4.3	U	3.1	J	2.2	U	1.1	U	4.3	U	3.2	U
SS BA20-0-6.5	4.4	U	4.4	U	1.1	U	8.8	U	4.4	U	3.8	J	2.2	U	3	U	4.4	U	3.3	U
SS BA20-6.5-9	5.2	U	5.2	U	1.3	U	10	U	5.2	U	7.1	J	2.6	U	1.3	U	5.2	U	3.9	U
SS BA21-0-5	4.1	U	4.1	U	1	U	8.3	U	4.1	U	21	U	2.1	U	1	U	4.1	U	3.1	U
SS BA21-5-7.5	440	U	440	U	110	U	890	U	440	U	2200	J	220	U	170	U	440	U	330	U
SS BA21-7.5-10.5	360	U	360	U	89	U	710	U	360	U	1800	J	180	U	89	U	360	U	270	U
SS BA22-0-1	2.7	U	2.7	U	0.68	U	5.4	U	2.7	U	2.7	J	1.4	U	5.2		2.7	U	2	U
SS BA22-1-4	3.7	U	3.7	U	0.92	U	7.4	U	3.7	U	18	U	1.8	U	0.92	U	3.7	U	2.8	U
SS BA22-4-9	2.2	U	2.2	U	0.54	U	4.3	U	2.2	U	11	U	1.1	U	0.14	J	2.2	U	1.6	U
SS BA23-0-0.5	6.5	U	6.5	U	1.6	U	13	U	6.5	U	32	U	3.2	U	1.6	U	6.5	U	4.8	U

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Table 1
Bel Air Dam Sediment Results

Method																		
Analyte	Chloromethane		cis-1,2-Dichloroethene		cis-1,3-Dichloropropene		Dibromochloromethane		Dibromomethane		Dichlorodifluoromethane		Diethyl ether		Diisopropyl Ether		Ethylbenzene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1																	40000	
RCS-2																	1000000	
EPA RCRA Standard																		
Beneficial Reuse																		
COMP1																		
COMP2																		
COMP3																		
COMP4																		
COMP5																		
COMP6																		
DUPE 11/17/21	4	U	1	U	0.5	U	1	U	2	U	10	U	2	U	2	U	1	
SS BA07-0-3	2.1	U	0.54	U	0.27	U	0.54	U	1.1	U	5.4	U	1.1	U	1.1	U	0.54	
SS BA08-0-2.5	1.7	U	0.42	U	0.21	U	0.42	U	0.84	U	4.2	U	0.84	U	0.84	U	0.42	
SS BA09-0-1	550	U	140	U	69	U	140	U	270	U	1400	U	270	U	270	U	140	
SS BA09-1-4	510	U	130	U	64	U	130	U	250	U	1300	U	250	U	250	U	130	
SS BA10-0-4.25	5	U	1.2	U	0.62	U	1.2	U	2.5	U	12	U	2.5	U	2.5	U	1.2	
SS BA11-0-4	550	U	140	U	68	U	140	U	270	U	1400	U	270	U	270	U	140	
SS BA11-4-6.25	420	U	110	U	53	U	110	U	210	U	1100	U	210	U	210	U	110	
SS BA12-0-3.5	2.9	U	0.73	U	0.36	U	0.73	U	1.4	U	7.3	U	1.4	U	1.4	U	0.73	
SS BA12-3.5-5.4	530	U	130	U	66	U	130	U	260	U	1300	U	260	U	260	U	130	
SS BA13-0-2.5	490	U	120	U	61	U	120	U	240	U	1200	U	240	U	240	U	120	
SS BA13-2.5-6.75	680	U	170	U	85	U	170	U	340	U	1700	U	340	U	340	U	26	
SS BA14-0-3.5	3	U	0.75	U	0.37	U	0.75	U	1.5	U	7.5	U	1.5	U	1.5	U	0.75	
SS BA14-3.5-7	530	U	130	U	66	U	130	U	260	U	1300	U	260	U	260	U	130	
SS BA14-7-10.5	770	U	190	U	96	U	190	U	380	U	1900	U	380	U	380	U	190	
SS BA15-0-4	5.9	U	1.5	U	0.73	U	1.5	U	2.9	U	15	U	2.9	U	2.9	U	1.5	
SS BA15-4-8	850	U	210	U	110	U	210	U	430	U	2100	U	430	U	430	U	35	
SS BA16-0-4.75	490	U	120	U	61	U	120	U	240	U	1200	U	240	U	240	U	120	
SS BA17-0-6.5	420	U	110	U	53	U	110	U	210	U	1100	U	210	U	210	U	110	
SS BA17-6.5-9.3	4.1	U	1	U	0.51	U	1	U	2	U	10	U	2	U	2	U	0.14	
SS BA18-0-4.25	410	U	100	U	52	U	100	U	210	U	1000	U	210	U	210	U	100	
SS BA18-4.25-11.9	580	U	150	U	73	U	150	U	290	U	1500	U	290	U	290	U	150	
SS BA19-0-4	510	U	130	U	64	U	130	U	250	U	1300	U	250	U	250	U	130	
SS BA19-4-10	8.6	U	2.2	U	1.1	U	2.2	U	4.3	U	22	U	4.3	U	4.3	U	0.95	
SS BA20-0-6.5	8.8	U	2.2	U	1.1	U	2.2	U	4.4	U	22	U	4.4	U	4.4	U	4	
SS BA20-6.5-9	10	U	2.6	U	1.3	U	2.6	U	5.2	U	26	U	5.2	U	5.2	U	4.1	
SS BA21-0-5	8.3	U	2.1	U	1	U	2.1	U	4.1	U	21	U	4.1	U	4.1	U	1.2	
SS BA21-5-7.5	890	U	220	U	110	U	220	U	440	U	2200	U	440	U	440	U	220	
SS BA21-7.5-10.5	710	U	180	U	89	U	180	U	360	U	1800	U	360	U	360	U	180	
SS BA22-0-1	5.4	U	1.4	U	0.68	U	1.4	U	2.7	U	14	U	2.7	U	2.7	U	0.72	
SS BA22-1-4	7.4	U	1.8	U	0.92	U	1.8	U	3.7	U	18	U	3.7	U	3.7	U	0.58	
SS BA22-4-9	4.3	U	1.1	U	0.54	U	1.1	U	2.2	U	11	U	2.2	U	2.2	U	0.77	
SS BA23-0-0.5	13	U	3.2	U	1.6	U	3.2	U	6.5	U	32	U	6.5	U	6.5	U	3.2	

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Table 1
Bel Air Dam Sediment Results

Method																	
Analyte		Ethyl-Tert-Butyl-Ether		Hexachlorobutadiene		Isopropylbenzene		Methyl ethyl ketone		Methyl isobutyl ketone		Methyl tert butyl ether		Methylene chloride		Naphthalene	
Unit		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1						1000000		4000								4000	
RCS-2						10000000		50000								20000	
EPA RCRA Standard																	
Beneficial Reuse																	
COMP1																	
COMP2																	
COMP3																	
COMP4																	
COMP5																	
COMP6																	
DUPE 11/17/21	U	2	U	4	U	1.6		24		10	U	2	U	5	U	6.9	
SS BA07-0-3	U	1.1	U	2.1	U	0.54	U	5.4	U	5.4	U	1.1	U	2.7	U	2.1	U
SS BA08-0-2.5	U	0.84	U	1.7	U	0.42	U	4.2	U	4.2	U	0.84	U	2.1	U	1.7	U
SS BA09-0-1	U	270	U	550	U	140	U	1400	U	1400	U	270	U	690	U	700	
SS BA09-1-4	U	250	U	510	U	200		1300	U	1300	U	250	U	640	U	3400	
SS BA10-0-4.25	U	2.5	U	5	U	0.17	J	40		12	U	2.5	U	6.2	U	4.9	J
SS BA11-0-4	U	270	U	550	U	140	J	1400	U	1400	U	270	U	680	U	160	J
SS BA11-4-6.25	U	210	U	420	U	110	J	1100	U	1100	U	210	U	530	U	420	J
SS BA12-0-3.5	U	1.4	U	2.9	U	0.73	U	39		7.3	U	1.4	U	3.6	U	1.9	J
SS BA12-3.5-5.4	U	260	U	530	U	130	U	1300	U	1300	U	260	U	660	U	980	
SS BA13-0-2.5	U	240	U	490	U	120	U	1200	U	1200	U	240	U	610	U	160	J
SS BA13-2.5-6.75	J	340	U	680	U	170	J	1700	U	1700	U	340	U	850	U	330	J
SS BA14-0-3.5	U	1.5	U	3	U	0.75	U	7.5	U	7.5	U	1.5	U	3.7	U	3	U
SS BA14-3.5-7	U	260	U	530	U	400		1300	U	1300	U	260	U	660	U	320	J
SS BA14-7-10.5	U	380	U	770	U	60	J	1900	U	1900	U	380	U	960	U	200	J
SS BA15-0-4	U	2.9	U	5.9	U	0.18	J	24		15	U	2.9	U	7.3	U	2.7	J
SS BA15-4-8	J	430	U	850	U	210	U	2100	U	2100	U	430	U	1100	U	280	J
SS BA16-0-4.75	U	240	U	490	U	40	J	1200	U	1200	U	240	U	610	U	300	J
SS BA17-0-6.5	U	210	U	420	U	110	J	1100	U	1100	U	210	U	530	U	140	J
SS BA17-6.5-9.3	J	2	U	4.1	U	1	U	20		10	U	2	U	5.1	U	4.6	
SS BA18-0-4.25	U	210	U	410	U	100	U	1000	U	1000	U	210	U	520	U	410	J
SS BA18-4.25-11.9	U	290	U	580	U	150	J	1500	U	1500	U	290	U	730	U	120	J
SS BA19-0-4	U	250	U	510	U	130	J	1300	U	1300	U	250	U	640	U	510	J
SS BA19-4-10	J	4.3	U	8.6	U	2.2	U	49		22	U	4.3	U	11	U	5.2	J
SS BA20-0-6.5		4.4	U	8.8	U	2.1	J	61		22	U	4.4	U	11	U	2.1	J
SS BA20-6.5-9		5.2	U	10	U	39		140		26	U	5.2	U	13	U	9.7	J
SS BA21-0-5	J	4.1	U	8.3	U	2.1	U	21		21	U	4.1	U	10	U	1.9	J
SS BA21-5-7.5	U	440	U	890	U	70	J	2200	U	2200	U	440	U	1100	U	310	J
SS BA21-7.5-10.5	J	360	U	710	U	180	J	1800	U	1800	U	360	U	890	U	250	J
SS BA22-0-1	J	2.7	U	5.4	U	1.4	U	67		14	U	2.7	U	6.8	U	3.4	J
SS BA22-1-4	J	3.7	U	7.4	U	1.8	U	24		18	U	3.7	U	9.2	U	2.6	J
SS BA22-4-9	J	2.2	U	4.3	U	1.1	U	11	U	11	U	2.2	U	5.4	U	1.2	J
SS BA23-0-0.5	U	6.5	U	13	U	3.2	U	35		32	U	6.5	U	16	U	13	U

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Table 1
Bel Air Dam Sediment Results

Method																					
Analyte	n-Butylbenzene		n-Propylbenzene		o-Chlorotoluene		o-Xylene		p/m-Xylene		p-Chlorotoluene		p-Isopropyltoluene		sec-Butylbenzene		Styrene		tert-Butylbenzene	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1	N/A		100000				N/A		N/A				N/A		N/A				100000	
RCS-2			1000000																1000000	
EPA RCRA Standard																				
Beneficial Reuse																				
COMP1																				
COMP2																				
COMP3																				
COMP4																				
COMP5																				
COMP6																				
DUPE 11/17/21	14		1	U	2	U	3.9		0.77	J	2	U	1	U	30		1	U	3.8	
SS BA07-0-3	0.54	U	0.54	U	1.1	U	0.54	U	1.1	U	1.1	U	0.54	U	0.54	U	0.54	U	1.1	U
SS BA08-0-2.5	0.42	U	0.42	U	0.84	U	0.42	U	0.84	U	0.84	U	0.42	U	0.42	U	0.42	U	0.84	U
SS BA09-0-1	140	U	140	U	270	U	140	U	270	U	270	U	140	U	140	U	140	U	270	U
SS BA09-1-4	41	J	40	J	250	U	130	U	250	U	250	U	130	U	37	J	130	U	250	U
SS BA10-0-4.25	0.23	J	1.2	U	2.5	U	1.2	U	2.5	U	2.5	U	1.2	U	3.1		1.2	U	0.77	J
SS BA11-0-4	140	U	140	U	270	U	140	J	270	U	270	U	15	J	140	J	140	U	270	J
SS BA11-4-6.25	110	J	110	U	210	U	110	U	210	U	210	U	110	U	110	U	110	U	210	U
SS BA12-0-3.5	0.73	U	0.73	U	1.4	U	0.73	U	1.4	U	1.4	U	0.73	U	0.23	J	0.73	U	1.4	U
SS BA12-3.5-5.4	25	J	130	J	260	U	41	J	260	U	260	U	31	J	130	J	130	U	260	U
SS BA13-0-2.5	140		41	J	240	U	120	U	240	U	240	U	16	J	130		120	U	81	J
SS BA13-2.5-6.75	170	U	170	J	340	U	170	U	340	U	340	U	170	U	170	U	170	U	340	J
SS BA14-0-3.5	0.75	U	0.75	U	1.5	U	0.75	U	1.5	U	1.5	U	0.75	U	0.99		0.75	U	0.37	J
SS BA14-3.5-7	1200		580		260	U	130	U	130	J	260	U	400		1300		130	U	170	J
SS BA14-7-10.5	190		69	J	380	U	190	J	380	J	380	U	21	J	180	J	190	U	380	J
SS BA15-0-4	0.45	J	1.5	U	2.9	U	1.5	U	2.9	U	2.9	U	1.5	U	1.1	J	1.5	U	0.32	J
SS BA15-4-8	210	U	210	U	430	U	210	U	430	U	430	U	210	U	210	J	210	U	430	U
SS BA16-0-4.75	51	J	32	J	240	U	42	J	240	J	240	U	14	J	120		120	U	14	J
SS BA17-0-6.5	30	J	110	U	210	U	110	U	210	J	210	U	110	U	60	J	110	U	16	J
SS BA17-6.5-9.3	1	U	1	U	2	U	0.9	J	2	U	2	U	0.28	J	1	U	1	U	2	U
SS BA18-0-4.25	100	U	100	U	210	U	100	U	210	U	210	U	100	U	100	U	100	U	210	J
SS BA18-4.25-11.9	150	J	150	U	290	U	150	U	290	U	290	U	150	J	150	J	150	U	290	J
SS BA19-0-4	22	J	130	U	250	U	130	U	250	U	250	U	130	J	110	J	130	U	48	J
SS BA19-4-10	2.2	U	2.2	U	4.3	U	3		3.2	J	4.3	U	0.31	J	2.2	U	2.2	U	4.3	U
SS BA20-0-6.5	7		2.2	U	4.4	U	5.8		15		4.4	U	2.2	J	12		2.2	U	3	J
SS BA20-6.5-9	160	U	2.6	U	5.2	U	13		25		5.2	U	2.4	J	280	U	2.6	U	38	
SS BA21-0-5	2.1	U	2.1	U	4.1	U	1.2	J	3.5	J	4.1	U	2.1	U	2.1	U	2.1	U	4.1	U
SS BA21-5-7.5	300		220	U	440	U	220	U	440	U	440	U	220	U	520		220	U	72	J
SS BA21-7.5-10.5	36	J	180	U	360	U	180	J	360	J	360	U	26	J	46	J	180	U	360	J
SS BA22-0-1	0.9	J	1.4	U	2.7	U	1.5		2.8		2.7	U	0.15	J	1.2	J	1.4	U	0.2	J
SS BA22-1-4	1.8	U	1.8	U	3.7	U	0.67	J	1.7	J	3.7	U	1.8	U	1.8	U	1.8	U	3.7	U
SS BA22-4-9	1.1	U	1.1	U	2.2	U	0.86	J	2.7		2.2	U	1.1	U	1.1	U	1.1	U	2.2	U
SS BA23-0-0.5	3.2	U	3.2	U	6.5	U	3.2	U	6.5	U	6.5	U	3.2	U	3.2	U	3.2	U	6.5	U

AECOM

Table 1
Bel Air Dam Sediment Results

Method																					
Analyte	Tertiary-Amyl Methyl Ether		Tetrachloroethene		Tetrahydrofuran		Toluene		trans-1,2-Dichloroethene		trans-1,3-Dichloropropene		Trichloroethene		Trichlorofluoromethane		Vinyl chloride	
Unit	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
RCS-1							30000											
RCS-2							1000000											
EPA RCRA Standard																		
Beneficial Reuse																		
COMP1																		
COMP2																		
COMP3																		
COMP4																		
COMP5																		
COMP6																		
DUPE 11/17/21	2	U	0.5	U	4	U	1	U	1.5	U	1	U	0.5	U	4	U	1	U
SS BA07-0-3	1.1	U	0.27	U	2.1	U	0.54	U	0.8	U	0.54	U	0.27	U	2.1	U	0.54	U
SS BA08-0-2.5	0.84	U	0.21	U	1.7	U	0.42	U	0.63	U	0.42	U	0.21	U	1.7	U	0.42	U
SS BA09-0-1	270	U	69	U	550	U	130	J	210	U	140	U	69	U	550	U	140	U
SS BA09-1-4	250	U	64	U	510	U	130	U	190	U	130	U	64	U	510	U	130	U
SS BA10-0-4.25	2.5	U	0.62	U	5	U	1.2	U	1.9	U	1.2	U	0.62	U	5	U	1.2	U
SS BA11-0-4	270	U	68	U	550	U	180	U	200	U	140	U	68	U	550	U	140	U
SS BA11-4-6.25	210	U	53	U	420	U	200	J	160	U	110	U	53	U	420	U	110	U
SS BA12-0-3.5	1.4	U	0.3	J	2.9	U	0.73	U	1.1	U	0.73	U	0.36	U	2.9	U	0.73	U
SS BA12-3.5-5.4	260	U	66	U	530	U	130	U	200	U	130	U	66	U	530	U	130	U
SS BA13-0-2.5	240	U	61	U	490	U	200		180	U	120	U	61	U	490	U	120	U
SS BA13-2.5-6.75	340	U	85	U	680	U	770	U	250	U	170	U	85	U	680	U	170	U
SS BA14-0-3.5	1.5	U	0.37	U	3	U	0.75	U	1.1	U	0.75	U	0.37	U	3	U	0.75	U
SS BA14-3.5-7	260	U	66	U	530	U	120	J	200	U	130	U	66	U	530	U	130	U
SS BA14-7-10.5	380	U	96	U	770	U	820		290	U	190	U	96	U	770	U	190	U
SS BA15-0-4	2.9	U	0.73	U	5.9	U	1.5	U	2.2	U	1.5	U	0.73	U	5.9	U	1.5	U
SS BA15-4-8	430	U	110	U	850	U	700	U	320	U	210	U	110	U	850	U	210	U
SS BA16-0-4.75	240	U	61	U	490	U	220	U	180	U	120	U	61	U	490	U	120	U
SS BA17-0-6.5	210	U	53	U	420	U	110	U	160	U	110	U	53	U	420	U	110	U
SS BA17-6.5-9.3	2	U	0.51	U	4.1	U	1	U	1.5	U	1	U	0.51	U	4.1	U	1	U
SS BA18-0-4.25	210	U	52	U	410	U	100	U	160	U	100	U	52	U	410	U	100	U
SS BA18-4.25-11.9	290	U	73	U	580	U	230		220	U	150	U	73	U	580	U	150	U
SS BA19-0-4	250	U	64	U	510	U	130	U	190	U	130	U	64	U	510	U	130	U
SS BA19-4-10	4.3	U	1.1	U	8.6	U	2.2	U	3.2	U	2.2	U	1.1	U	8.6	U	2.2	U
SS BA20-0-6.5	4.4	U	1.1	U	8.8	U	2.2	U	3.3	U	2.2	U	1.1	U	8.8	U	2.2	U
SS BA20-6.5-9	5.2	U	1.3	U	10	U	1.9	J	3.9	U	2.6	U	1.3	U	10	U	2.6	U
SS BA21-0-5	4.1	U	1	U	8.3	U	2.1	U	3.1	U	2.1	U	1	U	8.3	U	2.1	U
SS BA21-5-7.5	440	U	110	U	890	U	220	J	330	U	220	U	110	U	890	U	220	U
SS BA21-7.5-10.5	360	U	89	U	710	U	260	U	270	U	180	U	89	U	710	U	180	U
SS BA22-0-1	2.7	U	0.68	U	5.4	U	1.4	U	2	U	1.4	U	0.68	U	5.4	U	1.4	U
SS BA22-1-4	3.7	U	0.92	U	7.4	U	1.8	U	2.8	U	1.8	U	0.92	U	7.4	U	1.8	U
SS BA22-4-9	2.2	U	0.54	U	4.3	U	1.1	U	1.6	U	1.1	U	0.54	U	4.3	U	1.1	U
SS BA23-0-0.5	6.5	U	1.6	U	13	U	3.2	U	4.8	U	3.2	U	1.6	U	13	U	3.2	U

AECOM

Table 1
Bel Air Dam Sediment Results

Method			SW8270D													
Analyte	Xylenes, Total		2,4,5-Trichlorophenol		2,4,6-Trichlorophenol		2,4-Dinitrotoluene		2-Methylphenol		3-Methylphenol/4-Methylphenol		Hexachlorobenzene		Hexachlorobutadiene	
Unit	ug/kg		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
RCS-1	100000															
RCS-2	100000															
EPA RCRA Standard																
Beneficial Reuse																
COMP1																
COMP2																
COMP3																
COMP4																
COMP5																
COMP6																
DUPE 11/17/21	4.7	J														
SS BA07-0-3	0.54	U														
SS BA08-0-2.5	0.42	U														
SS BA09-0-1	140	U														
SS BA09-1-4	130	U														
SS BA10-0-4.25	1.2	U														
SS BA11-0-4	140	J														
SS BA11-4-6.25	110	U														
SS BA12-0-3.5	0.73	U	25	U	25	U	25	U	25	U	25	U	10	U	10	U
SS BA12-3.5-5.4	41	J														
SS BA13-0-2.5	120	U														
SS BA13-2.5-6.75	170	U														
SS BA14-0-3.5	0.75	U														
SS BA14-3.5-7	130	J														
SS BA14-7-10.5	190	J														
SS BA15-0-4	1.5	U														
SS BA15-4-8	210	U														
SS BA16-0-4.75	42	J														
SS BA17-0-6.5	110	J														
SS BA17-6.5-9.3	0.9	J														
SS BA18-0-4.25	100	U	25	U	25	U	25	U	25	U	25	U	10	U	10	U
SS BA18-4.25-11.9	150	U	25	U	25	U	25	U	25	U	25	U	10	U	10	U
SS BA19-0-4	130	U														
SS BA19-4-10	6.2	J														
SS BA20-0-6.5	21															
SS BA20-6.5-9	38															
SS BA21-0-5	4.7	J														
SS BA21-5-7.5	220	U	25	U	25	U	25	U	25	U	25	U	10	U	10	U
SS BA21-7.5-10.5	180	J														
SS BA22-0-1	4.3															
SS BA22-1-4	2.4	J														
SS BA22-4-9	3.6	J	25	U	25	U	25	U	25	U	25	U	10	U	10	U
SS BA23-0-0.5	3.2	U														

AECOM

Table 1
Bel Air Dam Sediment Results

Method								
Analyte	Hexachloroethane		Nitrobenzene		Pentachlorophenol		Pyridine	
Unit	ug/l		ug/l		ug/l		ug/l	
RCS-1								
RCS-2								
EPA RCRA Standard								
Beneficial Reuse								
COMP1								
COMP2								
COMP3								
COMP4								
COMP5								
COMP6								
DUPE 11/17/21								
SS BA07-0-3								
SS BA08-0-2.5								
SS BA09-0-1								
SS BA09-1-4								
SS BA10-0-4.25								
SS BA11-0-4								
SS BA11-4-6.25								
SS BA12-0-3.5	10	U	10	U	50	U	18	U
SS BA12-3.5-5.4								
SS BA13-0-2.5								
SS BA13-2.5-6.75								
SS BA14-0-3.5								
SS BA14-3.5-7								
SS BA14-7-10.5								
SS BA15-0-4								
SS BA15-4-8								
SS BA16-0-4.75								
SS BA17-0-6.5								
SS BA17-6.5-9.3								
SS BA18-0-4.25	10	U	10	U	50	U	18	U
SS BA18-4.25-11.9	10	U	10	U	50	U	18	U
SS BA19-0-4								
SS BA19-4-10								
SS BA20-0-6.5								
SS BA20-6.5-9								
SS BA21-0-5								
SS BA21-5-7.5	10	U	10	U	50	U	18	U
SS BA21-7.5-10.5								
SS BA22-0-1								
SS BA22-1-4								
SS BA22-4-9	10	U	10	U	50	U	18	U
SS BA23-0-0.5								

Attachment M
Wetland Data Sheets

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W1-UPL

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Slope between Waconah St. and wetland Local relief (concave, convex, none): Varies slightly Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 42.473083 Long: -73.247340 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
A portion of soil in plot has been previously disturbed by burrowing animal acitivity. Plot is located directly upgradient (approximately 29') from flag W1-115. Plot is generally upland forested area that contains a gap dominated by climbing woody vines.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology observed in the soil observation hole.

VEGETATION – Use scientific names of plants.

Sampling Point: W1-UPL

Tree Stratum (Plot size: 25' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Prunus serotina*	25	Yes	FACU
2. *Rosa multiflora*	5	No	FACU
3. *Berberis thunbergii*	5	No	FACU
4. *Acer negundo*	2	No	FAC
5. *Acer platanoides*	2	No	UPL
6. *Rhamnus cathartica*	2	No	FAC
7.			
	41	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Alliaria petiolata*	75	Yes	FACU
2. *Parthenocissus quinquefolia*	7	No	FACU
3. *Hesperis matronalis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	87	=Total Cover	
Woody Vine Stratum (Plot size: 25' radius)			
1. *Celastrus orbiculatus*	60	Yes	FACU
2. *Parthenocissus quinquefolia*	30	Yes	FACU
3. *Vitis riparia*	25	Yes	FAC
4.			
	115	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	64	x 3 =	192
FACU species	212	x 4 =	848
UPL species	2	x 5 =	10
Column Totals:	278 (A)		1050 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W1-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	Fine sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W1-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Riparian corridor Local relief (concave, convex, none): slightly concave Slope %: 5

Subregion (LRR or MLRA): LRR R Lat: 42.473114 Long: -73.247120 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
W1-WET located approx. 23' east of the flag W1-117. Center of plot is primarily PEM, with more of a PFO edge around outside of plot to the northwest, and south. West Branch of the Housatonic River lies on the eastern edge of the plot.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ~	No ____	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 21
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
West Branch of the Housatonic River is located approx. 17' east of plot center. Stream depth is approx. 1'

VEGETATION – Use scientific names of plants.

Sampling Point: W1-WET

Tree Stratum (Plot size: 40'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	25	Yes	FAC
2. *Ulmus americana*	15	Yes	FACW
3. *Acer saccharinum*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Eupatorium maculatum*	70	Yes	OBL
2. *Solidago gigantea*	60	Yes	FACW
3. *Lysimachia nummularia*	40	Yes	FACW
4. *Lysimachia ciliata*	20	No	FACW
5. *Glechoma hederacea*	1	No	FACU
6. *Cuscuta pentagona*	1	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	192	=Total Cover	
Woody Vine Stratum (Plot size: 40'x50')			
1. *Vitis riparia*	3	Yes	FAC
2. *Celastrus orbiculatus*	2	Yes	FACU
3. *Parthenocissus quinquefolia*	2	Yes	FACU
4.			
	7	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	140	x 2 =	280
FAC species	43	x 3 =	129
FACU species	5	x 4 =	20
UPL species	1	x 5 =	5
Column Totals:	259 (A)		504 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W1-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	97	5YR 3/4	3	C	M	Loamy/Clayey	Silty loam
5-21	7.5YR 4/1	65	5YR 3/3	35	C	M	Loamy/Clayey	Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W3-UPL

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Varies slightly Slope %: 60

Subregion (LRR or MLRA): LRR R Lat: 42.472330 Long: -73.247283 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Plot located on upland forested hillside slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology was observed in the soil observation hole.

VEGETATION – Use scientific names of plants.

Sampling Point: W3-UPL

Tree Stratum (Plot size: 10'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer platanoides*	40	Yes	UPL
2. *Acer negundo*	40	Yes	FAC
3. *Ulmus americana*	10	No	FACW
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. *Acer platanoides*	10	Yes	UPL
2. *Cornus amomum*	7	Yes	FACW
3. *Acer negundo*	3	No	FAC
4. *Frangula alnus*	2	No	FAC
5.			
6.			
7.			
	22	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Alliaria petiolata*	35	Yes	FACU
2. *Parthenocissus quinquefolia*	20	Yes	FACU
3. *Chelidonium majus*	3	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	58	=Total Cover	
Woody Vine Stratum (Plot size: 10'x50')			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	17	x 2 =	34
FAC species	45	x 3 =	135
FACU species	65	x 4 =	260
UPL species	53	x 5 =	265
Column Totals:	180 (A)		694 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Plot size for each stratum was adjusted to accommodate the geometry of the hillslope in relation to the wetland boundary on the west and residential yards on the east.

SOIL

Sampling Point: W3-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Loamy/Clayey	Fine Sandy Loam
3-18	2.5YR 4/4	100					Loamy/Clayey	Fine Sandy Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W3-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Riparian Corridor Local relief (concave, convex, none): None Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 42.472330 Long: -73.247283 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
20' east of West Branch of Housatonic River. Open PEM area in center of plot, with PFO around the edges (woody tree species).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 5

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W3-WET

Tree Stratum (Plot size: 40'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	35	Yes	FAC
2. *Ulmus americana*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	15	Yes	FAC
2. *Cornus amomum*	10	Yes	FACW
3. *Lonicera tatarica*	3	No	FACU
4.			
5.			
6.			
7.			
	28	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Solidago gigantea*	80	Yes	FACW
2. *Ranunculus repens*	10	No	FAC
3. *Glechoma hederacea*	10	No	FACU
4. *Symphyotrichum puniceum*	5	No	OBL
5. *Cornus amomum*	1	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	106	=Total Cover	
Woody Vine Stratum (Plot size: 40'x50')			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2. *Vitis riparia*	3	Yes	FAC
3.			
4.			
	8	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	116	x 2 =	232
FAC species	63	x 3 =	189
FACU species	18	x 4 =	72
UPL species	0	x 5 =	0
Column Totals:	202 (A)		498 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W3-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 4/1	75	7.5YR 4/4	25	C	M	Loamy/Clayey	Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W5-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Small Riverine Island Local relief (concave, convex, none): Variable Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 42.473059 Long: -73.246921 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Island originally flagged because one side had a clear break in slope defining top of stream bank. Other portions in island lack clear break in slope. Island appears to have been at least partially inundated since June 2023 site visit. Wetland W5 is demarcated by wetland flags B1-501 to B1-511.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ~	No ____	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The Waconah River entirely surrounds the wetland W5 island.

VEGETATION – Use scientific names of plants.

Sampling Point: W5-WET

Tree Stratum (Plot size: Entire Island)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: Entire island)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	95	Yes	FACW
2. *Phragmites australis*	10	No	FACW
3. *Myosotis scorpioides*	10	No	OBL
4. *Cornus amomum*	3	No	FACW
5. *Boehmeria cylindrica*	1	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	119 =Total Cover		
Woody Vine Stratum (Plot size: Entire island)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species	108	x 2 =	216
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	119 (A)		227 (B)

Prevalence Index = B/A = 1.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W5-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	90	10YR 3/4	10	C	M	Loamy/Clayey	Sandy Loam
4-18	10YR 4/2	95	10YR 3/4	5	C	M	Sandy	Loamy sand. Sand grain sizes are variable, includes fine and coarse sand w/ some fine gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Appears that island is frequently washed over, and difficult for sediment to deposit in large amounts.

Attachment N
NHESP Consultation

From: Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>
Sent: Thursday, March 7, 2024 6:09 PM
To: Flanagan, Jillian; Leddick, Jesse (FWE); Richards, Todd (FWE)
Cc: Doyle-Breen, Jennifer; Madden, Andrew (FWE); Kautza, Adam (FWE); Cheeseman, Melany (FWE)
Subject: RE: Bel Air Dam Removal - Pittsfield

RE: Bel Air Dam, Pittsfield (73.2605170°W 42.4517085°N), MA01061

Hi Jillian,

I can confirm that I don't foresee any MESA-specific conditions for a proposed removal of the Bel Air Dam (Pittsfield), nor would a formal MESA review be required.

Best, Misty-Anne

Misty-Anne R. Marold
Senior Endangered Species Review Biologist

Massachusetts Division of Fisheries & Wildlife
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6356 | f: (508) 389-7890
mass.gov/nhesp | facebook.com/masswildlife

From: Flanagan, Jillian <Jillian.Flanagan@aecom.com>
Sent: Thursday, March 7, 2024 5:12 PM
To: Leddick, Jesse (FWE) <jesse.leddick@mass.gov>; Richards, Todd (FWE) <todd.richards@mass.gov>
Cc: Doyle-Breen, Jennifer <Jennifer.Doyle-Breen@aecom.com>; Madden, Andrew (FWE) <andrew.madden@mass.gov>; Kautza, Adam (FWE) <adam.kautza@mass.gov>; Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>
Subject: RE: Bel Air Dam Removal - Pittsfield

I have attached the Notice of Ecological Restoration that was filed on February 7th and the locus map.

Thank you for your help,
Jillian

Jillian Flanagan
Environmental Scientist, East Domestic
Jillian.Flanagan@aecom.com
AECOM
250 Apollo Drive
Chelmsford, MA 01824, United States
T +1 978-905-2100
aecom.com?

From: Leddick, Jesse (FWE) <jesse.leddick@mass.gov>
Sent: Thursday, March 7, 2024 4:43 PM
To: Richards, Todd (FWE) <todd.richards@mass.gov>; Flanagan, Jillian <Jillian.Flanagan@aecom.com>
Cc: Doyle-Breen, Jennifer <Jennifer.Doyle-Breen@aecom.com>; Madden, Andrew (FWE) <andrew.madden@mass.gov>; Kautza, Adam (FWE) <adam.kautza@mass.gov>; Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>
Subject: RE: Bel Air Dam Removal - Pittsfield

Thanks all, cc'ing Misty-Anne Marold here to confirm no mapped Habitat. Jillian – can you reforward the filing / locus map to help us confirm location?

From: Richards, Todd (FWE) <todd.richards@mass.gov>
Sent: Wednesday, March 6, 2024 3:13 PM
To: Flanagan, Jillian <Jillian.Flanagan@aecom.com>
Cc: Doyle-Breen, Jennifer <Jennifer.Doyle-Breen@aecom.com>; Madden, Andrew (FWE) <andrew.madden@mass.gov>; Kautza, Adam (FWE) <adam.kautza@mass.gov>; Leddick, Jesse (FWE) <jesse.leddick@mass.gov>
Subject: Bel Air Dam Removal - Pittsfield

Hi Jillian, I am including Adam Kautza and Andrew Madden for coldwater fisheries TOY recommendations and the MESA question will need to go through NHESP specifically, so I have included Jesse Leddick.

Todd Richards
Assistant Director of Fisheries
Massachusetts Division of Fisheries & Wildlife
email: Todd.Richards@mass.gov
mass.gov/masswildlife | facebook.com/masswildlife

From: Flanagan, Jillian <Jillian.Flanagan@aecom.com>
Sent: Wednesday, March 6, 2024 12:25 PM
To: Richards, Todd (FWE) <todd.richards@mass.gov>
Cc: Doyle-Breen, Jennifer <Jennifer.Doyle-Breen@aecom.com>
Subject: RE: Bel Air Dam Removal - Pittsfield

Hi Todd,

I just wanted to follow up on my email sent on February 21st. Are you able to confirm that there are no time of year restrictions for the West Branch of the Housatonic River? Additionally, could you confirm that there is no NHESP Habitat or Coldwater Fisheries Resources in the Bel Air Dam project site?

Thank you,
Jillian

Jillian Flanagan
Environmental Scientist, East Domestic
Jillian.Flanagan@aecom.com
AECOM
250 Apollo Drive
Chelmsford, MA 01824, United States
T +1 978-905-2100
aecom.com?

From: Flanagan, Jillian
Sent: Wednesday, February 21, 2024 1:09 PM
To: todd.richards@mass.gov
Cc: Doyle-Breen, Jennifer <Jennifer.Doyle-Breen@aecom.com>
Subject: Bel Air Dam Removal - Pittsfield

Todd,

I am reaching out to you to discuss the Bel Air Dam Removal Project. The project site is located in Pittsfield on the West Branch of the Housatonic River along Wachonah Street and Lenox Avenue. I have attached the Notice of Ecological Restoration, which was listed in the *Environmental Monitor* on February 7th, to give you some background information on the project.

We are currently in the process of applying for a 401 Water Quality Certification from MassDEP. After review of the project site using MassMapper there is no NHESP Priority or Estimated Habitat of Rare Species nor is it in a DFW Coldwater Fisheries Resources area. Can you confirm this and that there are no time of year restrictions for this project site? Please let me know if you have any questions or concerns with this project.

Thank you,
Jillian Flanagan

Jillian Flanagan
Environmental Scientist, East Domestic
Jillian.Flanagan@aecom.com
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250 Apollo Drive
Chelmsford, MA 01824, United States
T +1 978-905-2100
aecom.com?

Attachment O

Time of Year Letter from Division of Fisheries and Wildlife

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

5/9/2024

Project: Bel Air Dam Removal – West Branch Housatonic River, Pittsfield, MA

The proposed project on the West Branch Housatonic River seeks to remove the Bel Air Dam in Pittsfield. Unlike the other branches to the Housatonic, and the mainstem Housatonic River downstream of the confluence of the branches, the West Branch of the Housatonic River is not a Coldwater Fish Resource (CFR). There are also no coldwater tributaries to the West Branch until far downstream of the Bel Air Dam near the confluence with the mainstem. Furthermore, the mainstem Housatonic, though it is a designated CFR does not generally support coldwater species until much further downstream below Woods Pond. Because of these reasons MassWildlife offers no Time of Year Restrictions for this project.

Thank you and please contact me if you have any questions

Adam Kautza
Coldwater Fisheries Project Leader
Massachusetts Division of Fisheries and Wildlife (MassWildlife)
1 Rabbit Hill Road, Westborough, MA 01581

Attachment P

Invasive Species Management Plan

Bel Air Dam Invasive Species Management Plan

Pittsfield, Massachusetts

Application for:
Massachusetts Department of Conservation and Recreation, Office of Dam Safety

Submitted to:
US Army Corps of Engineers Regulatory Division
(New England District)

Prepared by:

AECOM

June 2024

Table of Contents

Tables

Attachments

1.0 Project Background

Bel Air Dam is part of the Massachusetts Department of Conservation and Recreation (MassDCR) Office of Dam Safety's (ODS) pilot Abandoned Dams program. As part of this program, MassDCR is seeking to address safety concerns pertaining to dams in the Commonwealth that have no identifiable owner. In general, MassDCR seeks to partner with a municipality or other interested party in order to implement a Repair Alternative. If a municipality or other interested party will commit to achieving property ownership, then MassDCR will implement required dam repairs prior to property acquisition by others. Given no municipal or private party interest in achieving dam ownership, the Full or Partial Removal Alternatives are preferred. In the case of Bel Air Dam, neither the City of Pittsfield nor any other interested party has expressed willingness to take ownership of the dam; therefore, the MassDCR ODS is proposing to remove the dam. The proposed project will remove the Bel Air Dam on the West Branch of the Housatonic River and thereby restore the natural connectivity of a waterway.

The project proposes removal of the entire dam structure, restoration of a natural stream channel in the area of the current impoundment, establishment of adjacent floodplain, and installation of native herbaceous and woody species. The project area historically contained riparian habitat which has been degraded due to the impoundment and includes numerous invasive/undesirable species, as identified in Appendix K of the December 2020 US Army Corps of Engineers *New England District Compensatory Mitigation Standard Operating Procedures.* As a part of the restoration plan, invasive species will be removed and managed as outlined in this document.

2.0 Invasive Species Management Goals

Goals for the Bel Air Dam Site's Invasive Species Management Plan, modified from the USACE New England District Compensatory Mitigation Standard Operating Procedures, include:

- Maintaining a minimum 90% cover of native vegetation by the fifth year after construction activities are completed.
- By the fifth year have no invasive or non-native vegetation dominant in any area of the project site.

3.0 Target Species

Invasive species pose a threat to the biodiversity of the project area. Invasive species can quickly colonize an area, especially bare soil, and outcompete native species. A diverse grouping of

native species are vital to maintain a healthy ecosystem and provide essential wildlife habitat. The wetland delineation at the site completed in June 2023 by an AECOM Professional Wetland Scientist noted the presence of many invasive and non-native species (**Attachment A**). **Table 1** identifies species present on the site that are identified as undesirable/invasive species in Appendix K of the December 2020 US Army Corps of Engineers *New England District Compensatory Mitigation Standard Operating Procedures*. Have been identified and will be controlled at the site:

Table 2. Invasive Species at Bel Air Site

Common Name	Scientific Name	Removal Methods	Removal Notes
Alder Buckthorn[1]	*Frangula alnus*	• Mowing • Herbicide ○ Glyphosate or triclopyr • Hand pulling young plants	• Remove plants before they produce fruit in the spring and fall • Retreat foliage re-sprouts, foliar spray to stump sprouts
Common Reed[2]	*Phragmites australis*	• Herbicide ○ Glyphosate	• Apply late summer or early fall after flowering
Creeping Buttercup[3]	*Ranunculus repens*	• Hand pull, fully remove root fragments • Herbicide ○ Triclopyr, glyphosate if necessary	• Apply herbicide during active growth • Less effective during drought conditions • Regrowth is expected after application
Creeping Jenny[4]	*Lysimachia nummularia*	• Hand pulling • Improving native species presence	• Remove in early spring • Foliar spray not recommended
Dames Rocket[5]	*Hesperis matronalis*	• Hand pull, fully remove taproot • Herbicide ○ Glyphosate or triclopyr	• Apply herbicide to basal rosettes in late fall or early spring
European Buckthorn[6]	*Rhamnus cathartica*	• Mowing • Herbicide ○ Glyphosate or triclopyr	• Remove plants before they produce fruit in spring and fall • Apply herbicides to fresh cut stems, retreat foliage of re-sprouts
Garlic Mustard[7]	*Alliaria petiolate*	• Hand pull • Herbicide ○ Glyphosate	• Seeds persist in soil, annual control for many years may be necessary • Apply herbicide as foliar spray
Greater Celandine[8]	*Cheilidonium*	• Hand pulling	• Remove before the plant

[1] Mass Audubon. 2024. Invasive Plant in Massachusetts, Glossy Buckthorn.
[2] ENSR International. May 2005. *Rapid Response Plan For Reed Grass (Phragmites australis) in Massachusetts.*
[3] NHESP. 2015. Bristly Buttercup Fact Sheet.
[4] Town of Concord. N.D. Moneywort (Creeping Jenny).
[5] Mass Audubon. 2024. Invasive Plant in Massachusetts, Dames Rocket.
[6] Mass Audubon. 2024. Invasive Plant in Massachusetts, Common Buckthorn.
[7] Mass Audubon. 2024. Invasive Plant in Massachusetts, Garlic Mustard.
[8] Town of Sudbury. 2024. Greater Celandine.

Common Name	Scientific Name	Removal Methods	Removal Notes
	majus		goes to seed
Ground Ivy[9]	*Glechoma hederacea*	• Improving native species presence • Herbicide ○ Triclopyr	• Apply herbicide in early fall • Grass should not be mowed 2-3 days before application and no expected rainfall for 24-hours
Japanese Barberry[10]	*Berberis thunbergia*	• Hand pulling young plants • Herbicide ○ Triclopyr	• Mowing will suppress not eradicate • Use foliar spray to fresh cut stumps
Multiflora Rose[11]	*Rosa multiflora*	• Mowing • Herbicide ○ Glyphosate or triclopyr	• Cutting and mowing 3-6 times a year • Foliar spray to fresh cut stem

Norway Maple[12]	*Acer platanoides*	• Hand pulling young plants
		• Mechanical
		• Cut Stump
		  ○ Triclopyr
		• Basal Bark
		  ○ Triclopyr
		• Foliar Spray
			• Monitor light gaps after removal
			• Cut stump 2-3” above ground and apply herbicide
			• Foliar spray effective for seedlings
			• Herbicide should be applied in a 1’ band around trunk in summer. Follow up in foliar spray if necessary

Oriental Bittersweet[13]	*Celastrus orbiculatus*	• Hand pulling young vines, fully remove root • Vines on trees – cut and apply herbicide ○ Triclopyr (Garlon)	• Glyphosate not as effective • Apply herbicide when leaves are not present • Dead vines can be left on tree if not easily removed
Reed Canary Grass[14]	*Phalaris arundinacea*	• Mowing • Herbicide ○ Glyphosate, imazapyr/sethoxydim, fluazifop	• Mow before seed heads appear • Spray in active growth/after mowing when grass is 6-12” • Multiple treatments may be necessary
Tatarian Honeysuckle[15]	*Loncicera tatarica*	• Hand pulling • Repeated cutting/mowing • Herbicide ○ Glyphosate	• Do not cut in winter, leads to aggressive re-sprouting • Apply herbicide to fresh cut stump
Water Forget-Me-Not[16]	*Myosotis scorpioides*	• Hand pulling, ensure all root is removed	• Foliar sprays in spring or summer may be effective

[9] UMass Amherst. May 2011. Ground Ivy in Lawns.
[10] Town of Natick. N.D. Japanese Barberry.
[11] Mass Audubon. 2024 Invasive Plan in Massachusetts, Multiflora Rose.
[12] Town of Natick. N.D. Norway Maple.
[13] Mass Audubon. 2024. Invasive Plant in Massachusetts, Oriental Bittersweet.
[14] Wisconsin Reed Canary Grass Management Working Group. 2009. Reed Canary Grass (*Phalaris arundinacea*). Management Guide: Recommendations for Landowners and Restoration Professionals.
[15] Mass Audubon. 2024. Invasive Plant in Massachusetts, Bush Honeysuckle.
[16] Wisconsin DNR. March 8, 2024. Forget About Planting Forget-me-nots.

4.0 Control and Management Approach

4.1 Construction

Vegetation will be removed from either side of the dam for construction access and staging prior to the start of construction. Most species will be removed via mechanical removal using construction machinery that will be on site to create new grades at the project site. In the event that sub-areas within the limit of work that are not cleared for purposes of staging or access, a wetland or plant biologist from MassDCR or their representative will inspect the existing vegetation for presence of plants identified in **Table 1** and these will be selectively removed via the methods identified in **Table 1**. For example, Norway maple trees would be cut and treated with herbicide and herbaceous species like garlic mustard would be hand pulled for removal. Invasive and undesirable vegetation that is removed will be disposed of off-site in an upland landfill in order to avoid invasives spreading into and establishing in other locations.

There is potential for invasive species to colonize along the banks of the West Branch of the Housatonic River following the completion of construction activities. Seeds of invasive species could spread to the project site by the river or wind. Other potential ways are through encroachment from neighboring properties, by various birds or other animals dropping seeds, or mammals transporting seeds through their fur.

After the Bel Air Dam is demolished, the impoundment will be eliminated. NOAA researchers conducted monitoring on a dam removal site on the Merrimack River in New Hampshire to understand how plant communities will change with dam removals. The NOAA researchers concluded that plant communities would change the most in areas where river channels formed and where water levels had the greatest changes. In wetlands that were dewatered, like the Bel-Air site will be, the plant community changed to an upland community with some woody plants. There was no evidence for invasive species dominance after dam removal, and sediment did not remain exposed in large areas (NOAA, 2018).

The 2018 NOAA study advocates for allowing natural plant communities to re-establish themselves. However, the Bel Air Dam project proposes to accelerate the revegetation process by installing a diverse native seed mix and woody plantings, where feasible, to improve aesthetics and wildlife habitat value, and encourage the establishment of native species to the project area. The Bel Air Restoration Plan and attached drawing plan (**Attachment B**) identify where on the

project site planting and seeding will occur. Pro-actively revegetating the site will reduce the potential for aggressive, invasive species to rapidly colonize bare ground.

5.0 Post-Construction Monitoring and Management

Through delineation reports and documentation as well as site photographs there has been an initial inventory of invasive species present at the project site to establish baseline conditions. Regular monitoring at the site for five years is planned to assess and document the species present at the project site post-construction This monitoring will be conducted by MassDCR or their representative as part of the annual monitoring events descried in the separate *Bel Air Restoration Plan*. In addition to permanent plot sampling, transects will be walked across the site spaced at approximately 30-foot intervals parallel to the stream channel to search for invasive/undesirable species identified in **Table 1**. Observed non-native species would be removed based on the methods identified in **Table 1**. To minimize the potential for further spread and establishment, hand pulling would be a preferred method of removing relatively small and low numbers of individual plants, although implementing herbicide use may be more beneficial if a large patch of an invasive/undesirable species is discovered. Implementing monitoring on a regular annual basis should help to identify and remove invasive/undesirable species before they occupy a substantial area. It is essential to use the correct form of removal based on the species observed. For example, just cutting bittersweet vines will not successfully destroy the plant, all roots must be removed, or the plant will regrow. For bittersweet vines an herbicide spray would have more successful results than cutting or hand pulling continuously. If herbicide treatment is implemented, herbicide sprays would only be applied by a licensed individual in the State of Massachusetts, and by following all directions and information on the label. Applicators also must follow all regulations listed in *333 CMR 11.04*.

The annual monitoring report will include a figure illustrating the transects walked, with notations for locations and abundance of invasive/undesirable species observed. The monitoring report will also include site photographs documenting the areas monitored and their condition during the monitoring event.

6.0 Costs

Annual maintenance costs for the management and control of invasive species will vary depending on several factors including: if/when the invasive species reestablish, which species are present, and method of control used. In addition to the initial seeding and planting costs, there may be future costs associated with physical plant removal or herbicide application. MassDCR will plan the periodic mowing of grass or cutting back of certain plants in order to maintain the property. If the City selects chemical means for invasive management, should any plants reestablish, herbicide spray would be an additional cost.

7.0 References

National Oceanographic and Atmospheric Administration (NOAA). March 14, 2018. *How Removing Dams Changes Local Vegetation*. https://www.fisheries.noaa.gov/feature-story/how-removing-dams-changes-local-vegetation#:~:text=Dam%20removal%20causes%20changes%20to%20water%20and%20sediment%20flow%2C%20the,that%20emerged%20after%20dam%20construction. Accessed June 11, 2024.

Mass Audubon. 2024. *Invasive Plant in Massachusetts*, *Garlic Mustard*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/garlic-mustard#:~:text=For%20small%20populations%2C%20hand%20pulling,applied%20as%20a%20foliar%20spray. Accessed on June, 11, 2024.

Mass Audubon. 2024. *Invasive Plant in Massachusetts, Common Buckthorn*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/common-buckthorn. Accessed on June 11, 2024.

Mass Audubon. 2024. Invasive Plant in Massachusetts, Dames Rocket. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/dame-s-rocket. Accessed on June 11, 2024.

Town of Concord. N.D. *Moneywort (Creeping Jenny)*. https://concordma.gov/785/Moneywort-Creeping-Jenny#:~:text=Hand%20pulling%20is%20recommended%20for,light%20available%20to%20the%20invasive . Accessed on June 11, 2024.

NHESP. 2015. *Bristly Buttercup Fact Sheet*.

Mass Audubon. 2024. *Invasive Plant in Massachusetts, Glossy Buckthorn*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/glossy-buckthorn. Accessed on June 11, 2024.

Town of Sudbury. 2024. *Greater Celandine*. https://sudbury.ma.us/conservation/greater-celandine/. Accessed on June 11, 2024.

Town of Natick. N.D. *Japanese Barberry*. https://natickma.gov/1858/Japanese-Barberry#:~:text=A%20hoe%2C%20weed%20wrench%2C%20or,plants%20and%20prevent%20future%20establishment. Accessed on June 11, 2024.

Mass Audubon. 2024 *Invasive Plant in Massachusetts, Multiflora Rose*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/multiflora-rose. Accessed on June 11, 2024.

Mass Audubon. 2024. *Invasive Plant in Massachusetts, Oriental Bittersweet*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/oriental-bittersweet. Accessed on June 11, 2024.

Mass Audubon. 2024. I*nvasive Plant in Massachusetts, Bush Honeysuckle*. https://www.massaudubon.org/nature-wildlife/invasive-plants-in-massachusetts/bush-honeysuckle. Accessed on June 11, 2024.

Town of Natick. N.D. Norway Maple. https://www.natickma.gov/1838/Norway-Maple. Accessed on June 11, 2024.

Wisconsin Reed Canary Grass Management Working Group. 2009. *Reed Canary Grass (Phalaris arundinacea) Management Guide: Recommendations for Landowners and Restoration Professionals*.

ENSR International. May 2005. *Rapid Response Plan For Reed Grass (Phragmites australis) in Massachusetts*.

UMass Amherst. May 2011. *Ground Ivy in Lawns*. https://ag.umass.edu/turf/fact-sheets/ground-ivy-in-lawns. Accessed on June 11, 2024.

USACE. December 29, 2020. *New England District Compensatory Mitigation Standard Operating Procedures*.

Wisconsin DNR. March 8, 2024. *Forget About Planting Forget-me-nots*. https://forestrynews.blogs.govdelivery.com/2024/03/08/forget-about-planting-forget-me-nots/. Accessed June 11, 2024.

Attachment A
Wetland Data Sheets

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W1-UPL

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Slope between Waconah St. and wetland Local relief (concave, convex, none): Varies slightly Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 42.473083 Long: -73.247340 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
A portion of soil in plot has been previously disturbed by burrowing animal acitivity. Plot is located directly upgradient (approximately 29') from flag W1-115. Plot is generally upland forested area that contains a gap dominated by climbing woody vines.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology observed in the soil observation hole.

VEGETATION – Use scientific names of plants.

Sampling Point: W1-UPL

Tree Stratum (Plot size: 25' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Prunus serotina*	25	Yes	FACU
2. *Rosa multiflora*	5	No	FACU
3. *Berberis thunbergii*	5	No	FACU
4. *Acer negundo*	2	No	FAC
5. *Acer platanoides*	2	No	UPL
6. *Rhamnus cathartica*	2	No	FAC
7.			
	41	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Alliaria petiolata*	75	Yes	FACU
2. *Parthenocissus quinquefolia*	7	No	FACU
3. *Hesperis matronalis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	87	=Total Cover	
Woody Vine Stratum (Plot size: 25' radius)			
1. *Celastrus orbiculatus*	60	Yes	FACU
2. *Parthenocissus quinquefolia*	30	Yes	FACU
3. *Vitis riparia*	25	Yes	FAC
4.			
	115	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	64	x 3 =	192
FACU species	212	x 4 =	848
UPL species	2	x 5 =	10
Column Totals:	278 (A)		1050 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W1-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	Fine sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W1-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Riparian corridor Local relief (concave, convex, none): slightly concave Slope %: 5

Subregion (LRR or MLRA): LRR R Lat: 42.473114 Long: -73.247120 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
W1-WET located approx. 23' east of the flag W1-117. Center of plot is primarily PEM, with more of a PFO edge around outside of plot to the northwest, and south. West Branch of the Housatonic River lies on the eastern edge of the plot.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ~	No ____	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 21
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
West Branch of the Housatonic River is located approx. 17' east of plot center. Stream depth is approx. 1'

VEGETATION – Use scientific names of plants.

Sampling Point: W1-WET

Tree Stratum (Plot size: 40'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	25	Yes	FAC
2. *Ulmus americana*	15	Yes	FACW
3. *Acer saccharinum*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Eupatorium maculatum*	70	Yes	OBL
2. *Solidago gigantea*	60	Yes	FACW
3. *Lysimachia nummularia*	40	Yes	FACW
4. *Lysimachia ciliata*	20	No	FACW
5. *Glechoma hederacea*	1	No	FACU
6. *Cuscuta pentagona*	1	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	192	=Total Cover	
Woody Vine Stratum (Plot size: 40'x50')			
1. *Vitis riparia*	3	Yes	FAC
2. *Celastrus orbiculatus*	2	Yes	FACU
3. *Parthenocissus quinquefolia*	2	Yes	FACU
4.			
	7	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	140	x 2 =	280
FAC species	43	x 3 =	129
FACU species	5	x 4 =	20
UPL species	1	x 5 =	5
Column Totals:	259 (A)		504 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W1-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	97	5YR 3/4	3	C	M	Loamy/Clayey	Silty loam
5-21	7.5YR 4/1	65	5YR 3/3	35	C	M	Loamy/Clayey	Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W3-UPL

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Varies slightly Slope %: 60

Subregion (LRR or MLRA): LRR R Lat: 42.472330 Long: -73.247283 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Plot located on upland forested hillside slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology was observed in the soil observation hole.

VEGETATION – Use scientific names of plants.

Sampling Point: W3-UPL

Tree Stratum (Plot size: 10'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer platanoides*	40	Yes	UPL
2. *Acer negundo*	40	Yes	FAC
3. *Ulmus americana*	10	No	FACW
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. *Acer platanoides*	10	Yes	UPL
2. *Cornus amomum*	7	Yes	FACW
3. *Acer negundo*	3	No	FAC
4. *Frangula alnus*	2	No	FAC
5.			
6.			
7.			
	22	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Alliaria petiolata*	35	Yes	FACU
2. *Parthenocissus quinquefolia*	20	Yes	FACU
3. *Chelidonium majus*	3	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	58	=Total Cover	
Woody Vine Stratum (Plot size: 10'x50')			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	17	x 2 =	34
FAC species	45	x 3 =	135
FACU species	65	x 4 =	260
UPL species	53	x 5 =	265
Column Totals:	180 (A)		694 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Plot size for each stratum was adjusted to accommodate the geometry of the hillslope in relation to the wetland boundary on the west and residential yards on the east.

SOIL

Sampling Point: W3-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Loamy/Clayey	Fine Sandy Loam
3-18	2.5YR 4/4	100					Loamy/Clayey	Fine Sandy Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W3-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Riparian Corridor Local relief (concave, convex, none): None Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 42.472330 Long: -73.247283 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
20' east of West Branch of Housatonic River. Open PEM area in center of plot, with PFO around the edges (woody tree species).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 5

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W3-WET

Tree Stratum (Plot size: 40'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	35	Yes	FAC
2. *Ulmus americana*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	15	Yes	FAC
2. *Cornus amomum*	10	Yes	FACW
3. *Lonicera tatarica*	3	No	FACU
4.			
5.			
6.			
7.			
	28	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Solidago gigantea*	80	Yes	FACW
2. *Ranunculus repens*	10	No	FAC
3. *Glechoma hederacea*	10	No	FACU
4. *Symphyotrichum puniceum*	5	No	OBL
5. *Cornus amomum*	1	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	106	=Total Cover	
Woody Vine Stratum (Plot size: 40'x50')			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2. *Vitis riparia*	3	Yes	FAC
3.			
4.			
	8	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	116	x 2 =	232
FAC species	63	x 3 =	189
FACU species	18	x 4 =	72
UPL species	0	x 5 =	0
Column Totals:	202 (A)		498 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W3-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 4/1	75	7.5YR 4/4	25	C	M	Loamy/Clayey	Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bel Air Dam City/County: Pittsfield/Berkshire Sampling Date: 8/10/23

Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W5-WET

Investigator(s): AECOM: Tom Touchet (PWS) and Colin Breen Section, Township, Range:

Landform (hillside, terrace, etc.): Small Riverine Island Local relief (concave, convex, none): Variable Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 42.473059 Long: -73.246921 Datum: WGS 84

Soil Map Unit Name: Copake - Urban land complex - 0 to 15% slope (632c) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Island originally flagged because one side had a clear break in slope defining top of stream bank. Other portions in island lack clear break in slope. Island appears to have been at least partially inundated since June 2023 site visit. Wetland W5 is demarcated by wetland flags B1-501 to B1-511.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ~	No ____	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The Waconah River entirely surrounds the wetland W5 island.

VEGETATION – Use scientific names of plants.

Sampling Point: W5-WET

Tree Stratum (Plot size: Entire Island)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: Entire island)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	95	Yes	FACW
2. *Phragmites australis*	10	No	FACW
3. *Myosotis scorpioides*	10	No	OBL
4. *Cornus amomum*	3	No	FACW
5. *Boehmeria cylindrica*	1	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	119 =Total Cover		
Woody Vine Stratum (Plot size: Entire island)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species	108	x 2 =	216
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	119 (A)		227 (B)

Prevalence Index = B/A = 1.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W5-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	90	10YR 3/4	10	C	M	Loamy/Clayey	Sandy Loam
4-18	10YR 4/2	95	10YR 3/4	5	C	M	Sandy	Loamy sand. Sand grain sizes are variable, includes fine and coarse sand w/ some fine gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

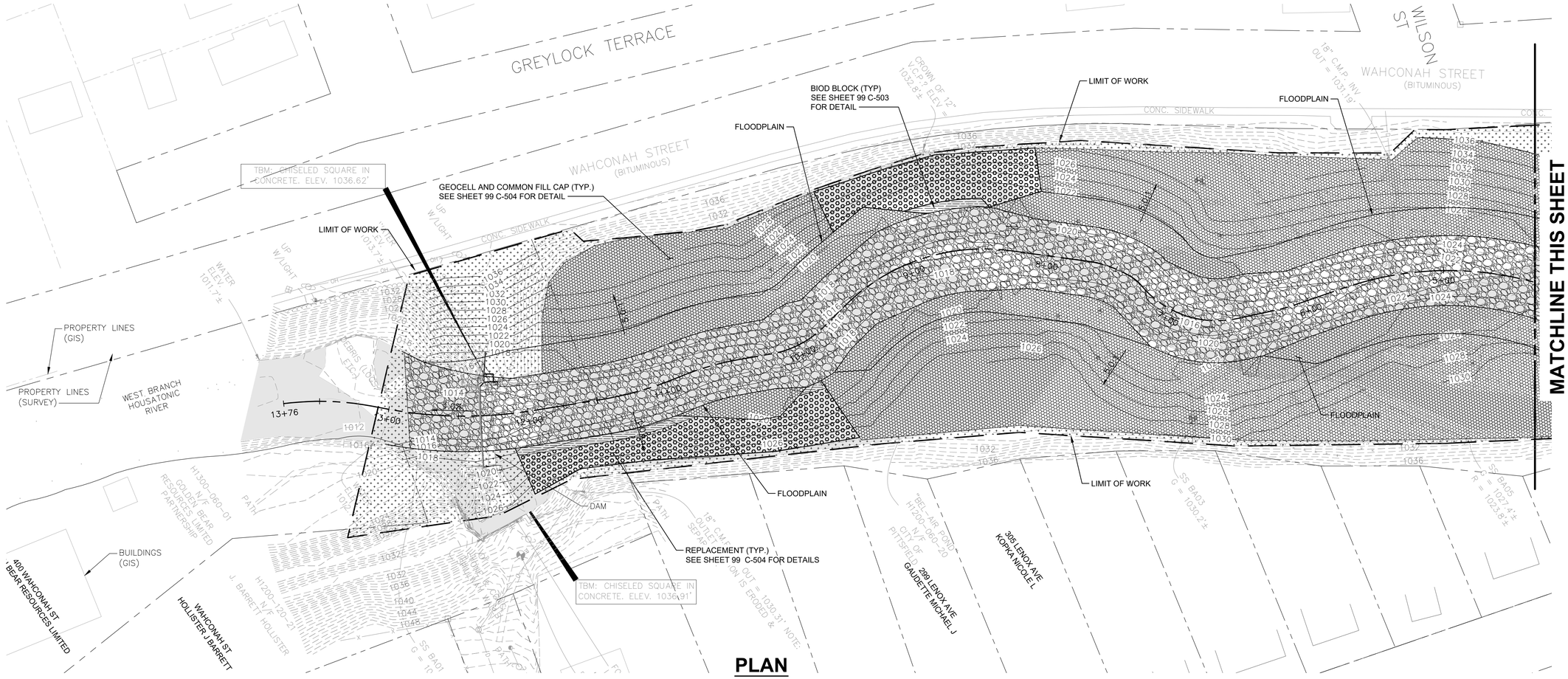
Depth (inches): _____

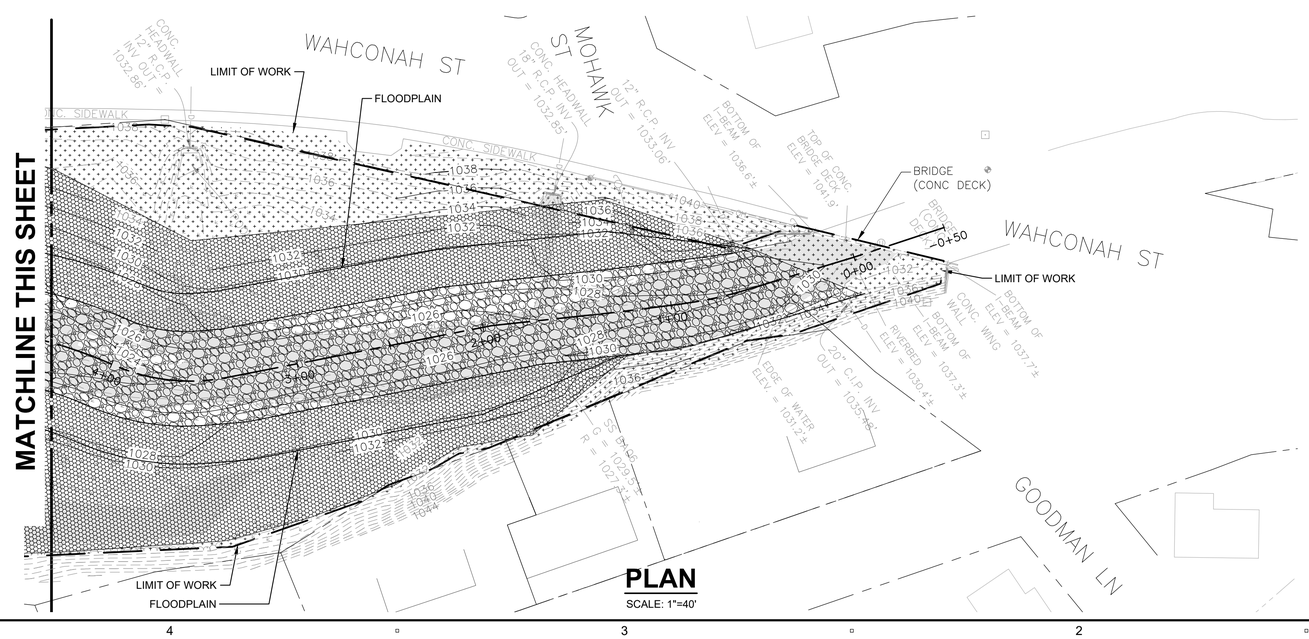
Hydric Soil Present? **Yes** X **No** ___

Remarks:

Appears that island is frequently washed over, and difficult for sediment to deposit in large amounts.

Attachment B
Project Drawing Sheet C-104





LEGEND

- PROPOSED REINFORCED BED MATERIAL
- PROPOSED SEDIMENT REPLACEMENT
- PROPOSED GEOCELL AND COMMON FILL CAP WITH NATIVE SEED MIX AND EROSION CONTROL BLANKET APPLIED ABOVE CAP
- PROPOSED BIO-D BLOCK OR SIMILAR
- RESTORE AREA TO EXISTING CONDITIONS AND RE-PLANT WITH NATIVE SEED MIX AND NATIVE WOODY SPECIES PER SPECIFICATIONS

N

40' 20' 0 40' 80'
1"=40'

MATCHLINE THIS SHEET

PATH/FILENAME: C:\USERS\NAPOLITANOS NA\ONEDRIVE - AECOM\66604936 - MASSDCR SIX ABANDONED DAMS\SHEETS\C\BEL AIR\00 C-104 BEL.DWG
LAST UPDATE: Thursday, June 20, 2024 1:19:03 PM
PLOT DATE: Thursday, June 20, 2024 1:23:45 PM

AECOM

PROJECT

MASS DCR
ABANDONED DAMS
BEL AIR DAM REMOVAL
CONTRACT NO.
P19-3264-D4A

CLIENT

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REGISTRATION

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER

60604936

Designed By:	**BR**
Drawn By:	**SN**
Dept Check:	**JDB**
Proj Check:	D. GOVE
Date:	JUNE 2024
Scale:	**AS NOTED**

DISCIPLINE

CIVIL

SHEET TITLE

BEL AIR DAM REMOVAL

MATERIALS PLAN

SHEET NUMBER

00 C-104