GE-Pittsfield / Housatonic River Site - Rest of River

Overview of Conceptual Remedial Design / Remedial Action Work Plan for Reach 6

January 15, 2025

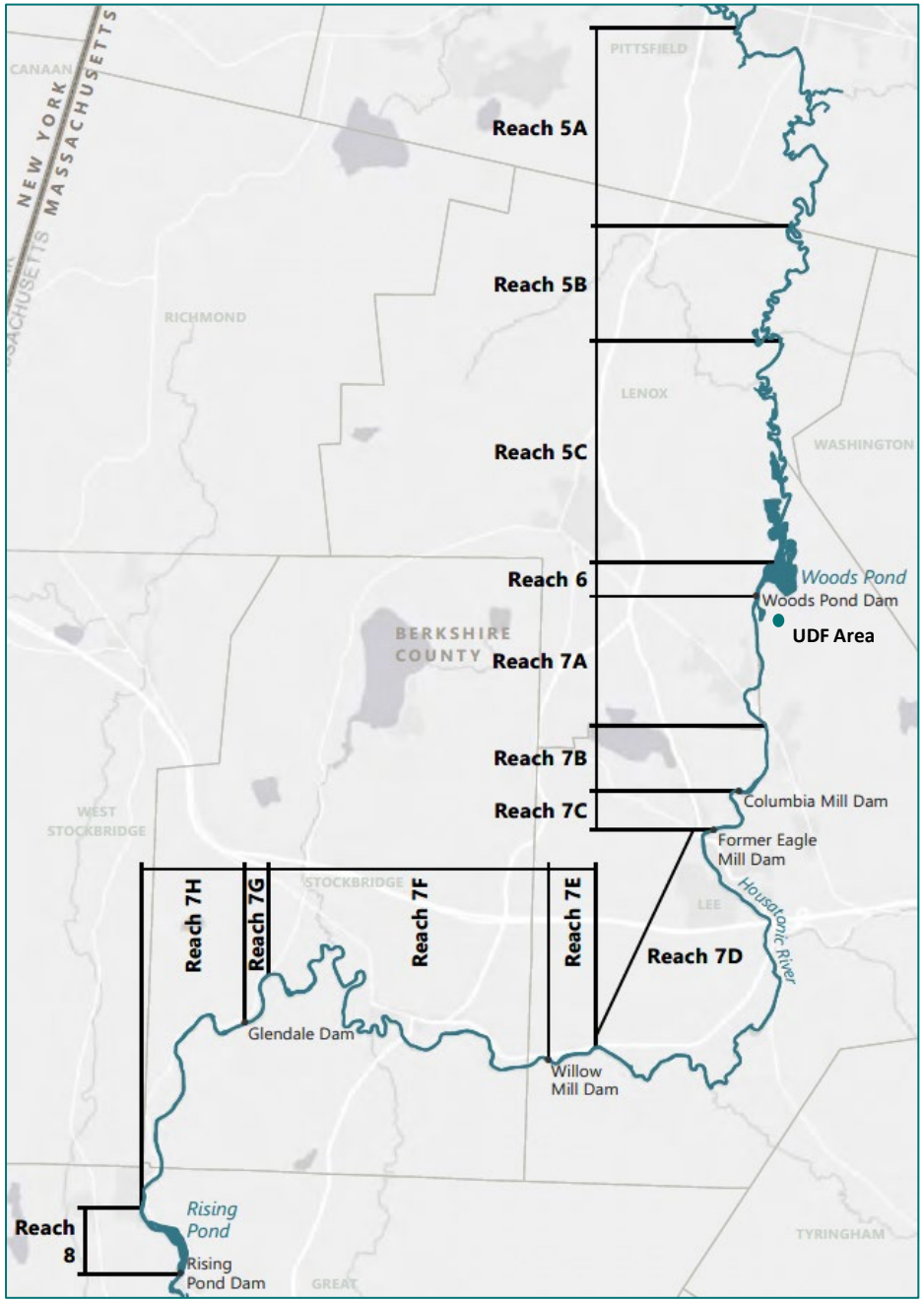
Agenda

- **Overview of Reach 6 Design**
- **ROR Reaches, Implementation Schedule, and Design Submittals**
- **Reach 6 Description**
- **Reach 6 Performance Standards**
- **Pre-Design Activities**
  - Pre-Design Investigations
  - Baseline Restoration Assessment
  - Cultural Resources Assessment
- **Conceptual RD/RA Work Plan**
  - Proposed Remediation Plan and Disposal Evaluation
  - Remediation Methods
- **Next Steps**
  - Supplemental Data Collection
  - Dewatering and Water Treatment Systems Final Design
  - Final RD/RA Work Plan

Overview of Reach 6 Design

- **EPA's Revised Final Permit for the Rest of River requires remediation of river sediment and floodplain soil to meet PCB Performance Standards for Reach 6 (including Woods Pond)**
- **Highlights of Conceptual Remedial Design/Remedial Action (RD/RA) Work Plan for Reach 6**
  - Removal of more than 490,000 cubic yards (cy) of sediment
  - Sediment will be dredged hydraulically and pumped to the Upland Disposal Facility (UDF) (potentially supplemented by limited mechanical removal)
  - Limited floodplain soil removal
  - Sediment/soil with higher PCB concentrations will be transported by rail for off-site disposal (~ 8,610 cy)
  - Removal is expected to take 3 to 4 years, and will be performed in parallel with remediation activities upstream in Reach 5A
  - A sediment cap will be placed in Reach 6 after all upstream remediation is complete

ROR Reaches



Years 1 through 10

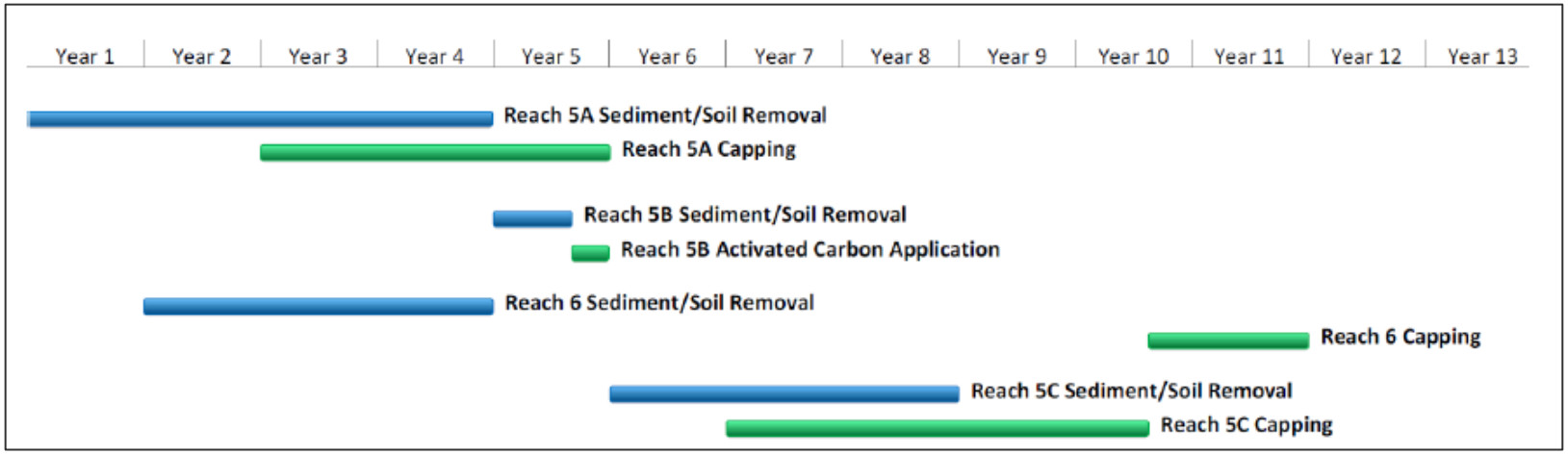
Years 10+

Implementation Schedule

- **Remedy Implementation Schedule**
  - Sediment removal in Reach 6 to be conducted in parallel with sediment/soil removal in Reach 5A
  - Final cap placement in Reach 6 will occur after remediation activities are complete upstream (in Reaches 5A, 5B, and 5C)

2+ Years

- Reach 5A Design & Treatability Studies
- UDF Construction

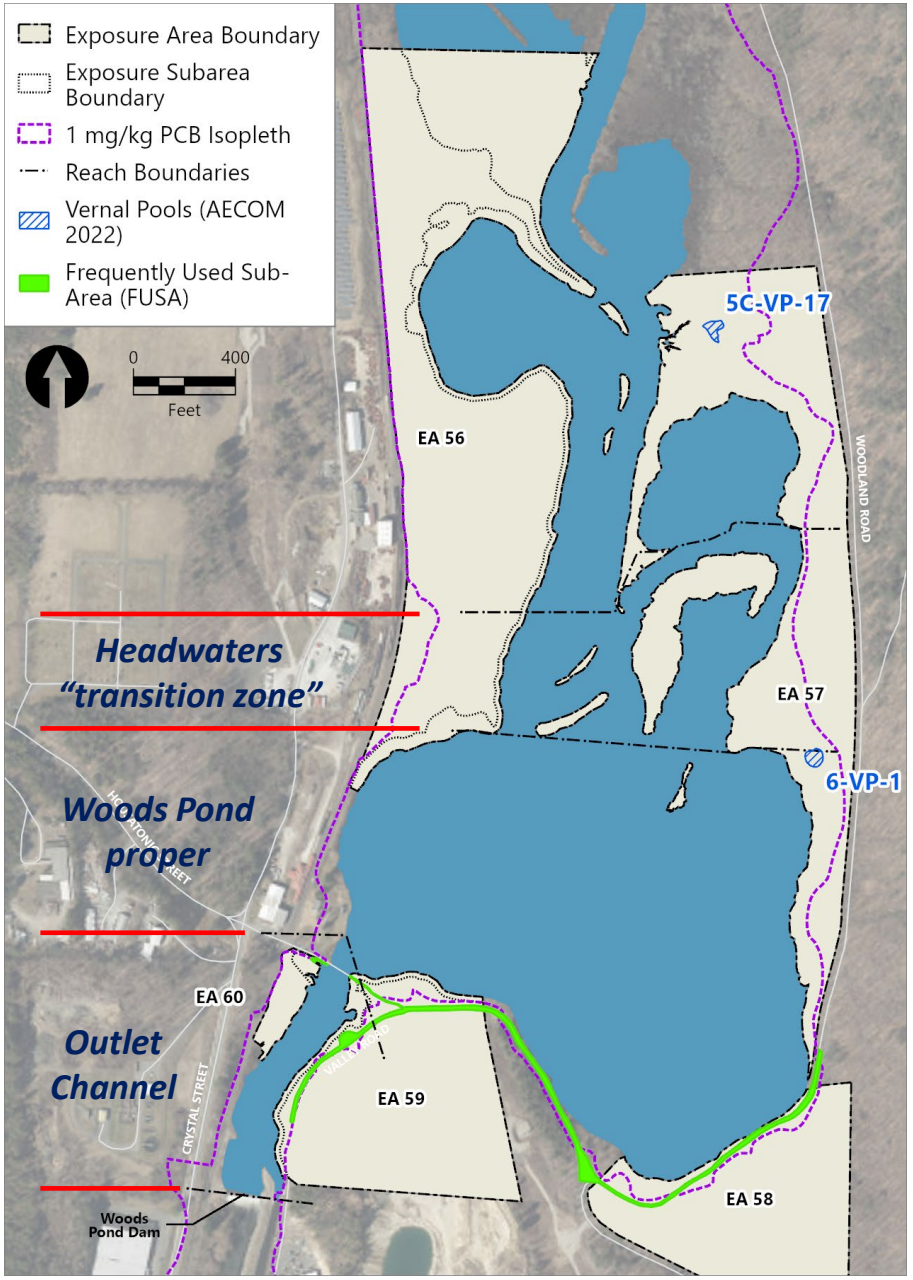


Design Submittals

- **Revised final design for Upland Disposal Facility submitted to EPA on December 20, 2024**
- **Reach 5A Conceptual RD/RA Work Plan (design) complete**
  - Supplemental data collection and final design in progress
- **Reach 6 Conceptual RD/RA Work Plan (design) submitted to EPA on October 31, 2024**
  - Under EPA review
  - Public comment through February 3, 2025

Reach 6 Description

- **Reach 6 is composed of:**
  - Woods Pond proper (53.6 acres)
  - Outlet channel (3.7 acres)
  - Five floodplain Exposure Areas (EAs); EAs 56 through 60, including three previously designated “Frequently Used Sub-areas”
    - Floodplain includes two vernal pools
  - Headwaters “transition zone” (12.6 acres) (but not covered by Reach 6 design – will be addressed with Reach 5C)



Addition of Valley Mill Pond

- Valley Mill Pond is a 4.6-acre pond on the eastern side of the River, immediately south of Woods Pond Dam
- Although technically located in Reach 7A, GE has proposed to include this pond as part of the remediation design for Reach 6 because it is hydraulically connected to Reach 6 through a diversion channel that bypasses Woods Pond Dam

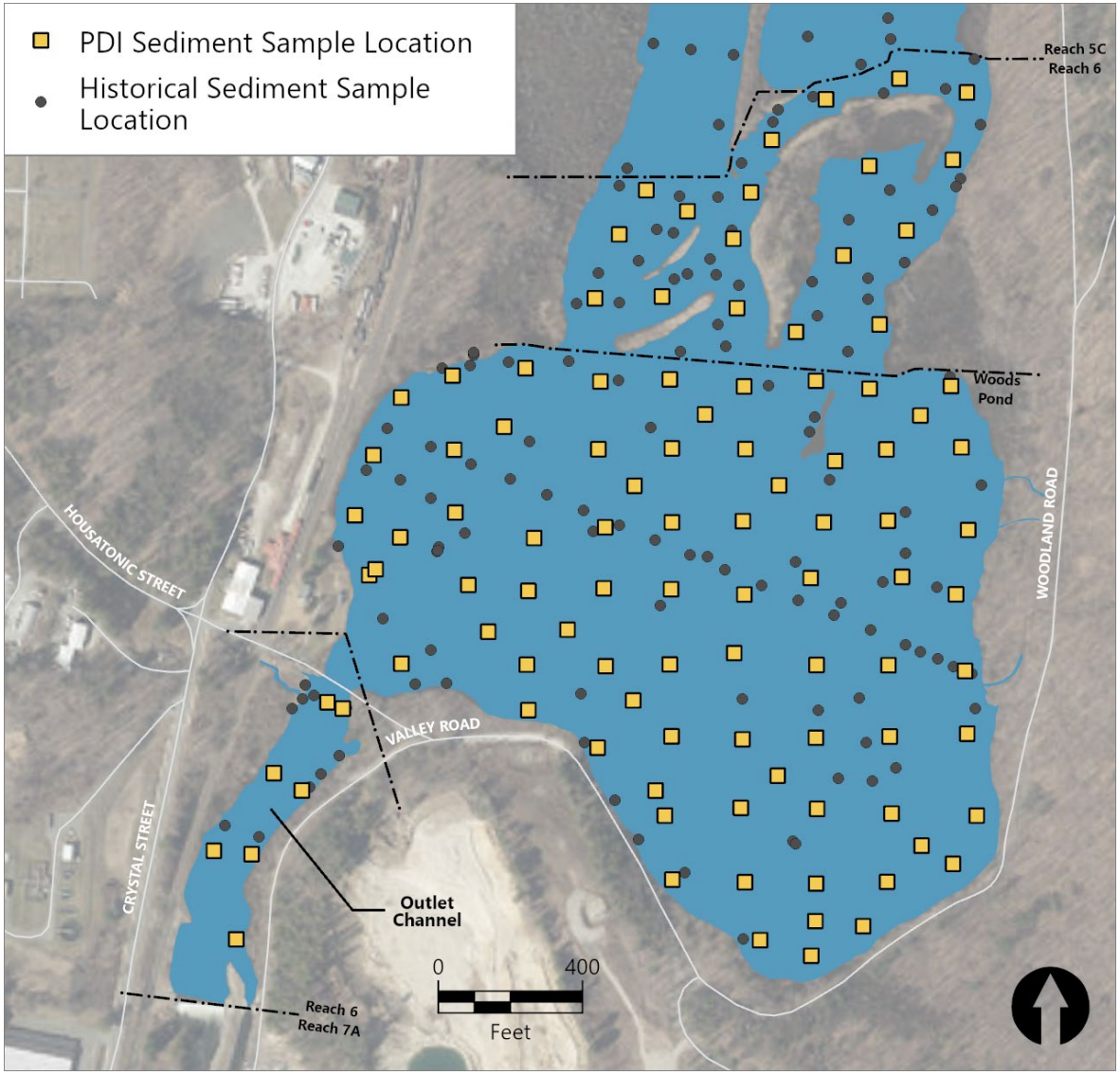
Reach 6 Performance Standards (PS)

- **Woods Pond Sediment (including outlet channel)**
  - Remove sediment and place an engineered cap to achieve a post-capping minimum water depth of 6 feet
  - Slope from shore to the 6-foot water depth as steep as possible, while maintaining stability and resisting erosion
  - Remove sufficient sediment in areas currently deeper than 6 feet to allow for an engineered cap (final grade at least as deep as original grade)
- **Floodplain Soils**
  - Excavate the top 1 foot of soil to achieve the PCB PS applicable to each non-residential Exposure Area, and backfill to grade
  - Remediate any vernal pools containing soil exceeding average PCB concentration of 3.3 mg/kg
- **Valley Mill Pond**
  - Final Permit does not establish specific PS for this area; GE has proposed to use the backwater PS:
    - Remove sediments, including any with PCBs ≥ 50 mg/kg, and replace with an engineered cap to achieve average concentration of 1 mg/kg

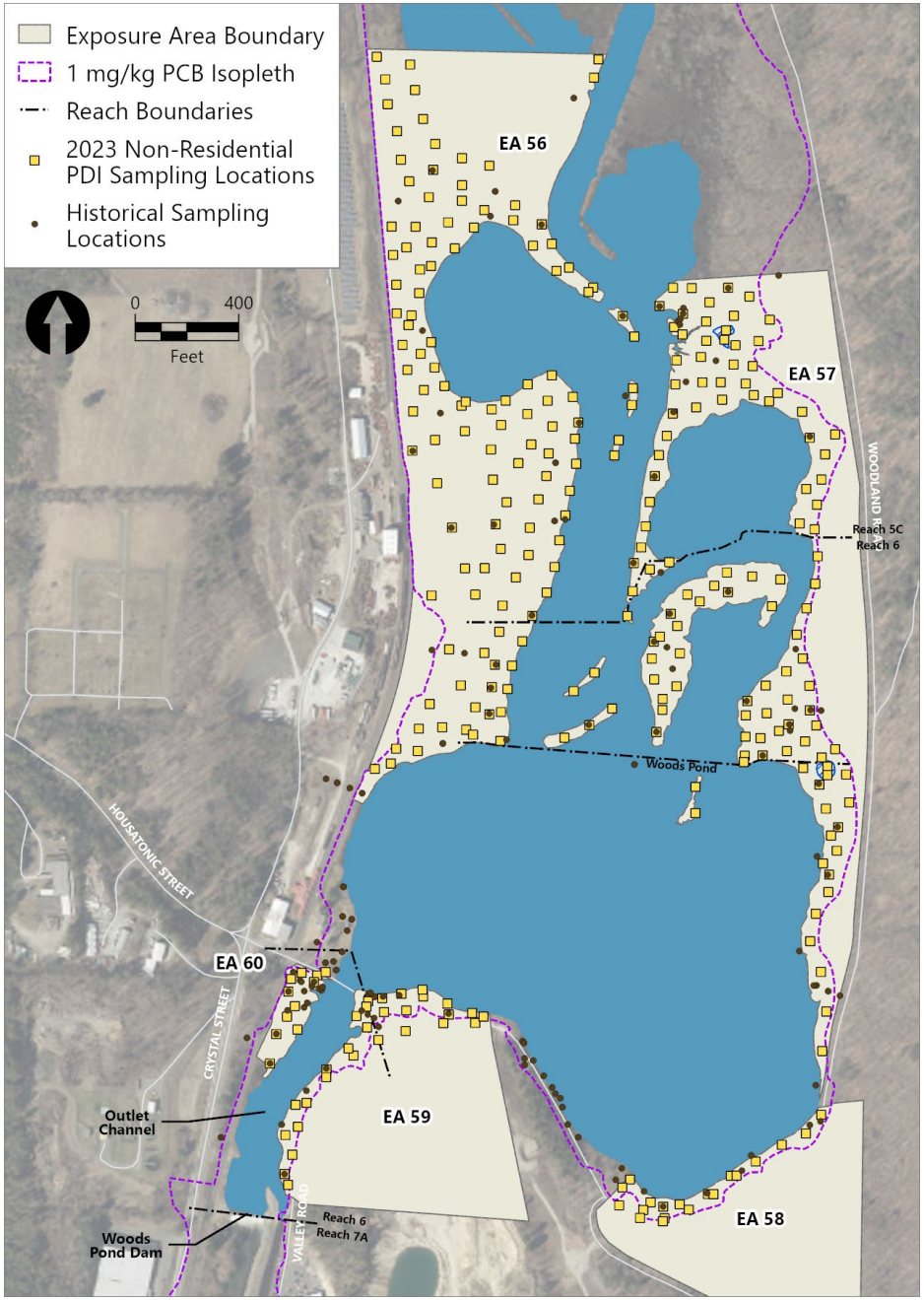
Reach 6 Pre-Design Investigations

- **Overview**
  - Bathymetry / topography surveys
  - Shoreline survey
  - Sediment and floodplain soil PCB characterization
  - Geotechnical testing of sediment
- **Sediment and Floodplain Soil PCB Sampling**
  - Conducted August through October 2023
  - Collected 535 sediment PCB samples (102 locations) to a depth of 8 feet in Woods Pond
  - Collected 627 floodplain soil PCB samples (301 locations)
- **Pre-Design Investigation Summary Report submitted to EPA on October 31, 2024**

Reach 6 Sediment PCB Sampling



Reach 6 Floodplain Soil PCB Sampling



Baseline Restoration Assessment (BRA)

- **Reach 6 BRA conducted in 2023 and 2024**
  - BRA report submitted on October 31, 2024; under EPA review
- **Aquatic habitats (Woods Pond, outlet channel, Valley Mill Pond)**
  - Deeper basins, submerged channels, and shallow areas
  - Eutrophic body with aquatic plant growth, including invasive species
- **Floodplain habitats**
  - Floodplain (swamp) wetlands, upland habitat, and two vernal pools
- **Threatened or endangered species habitat**
  - Reach 6 has designated or potential habitat for eight state-listed species and three species federally listed or proposed for listing
- **Final design will evaluate potential habitat impacts and identify mitigation and restoration**

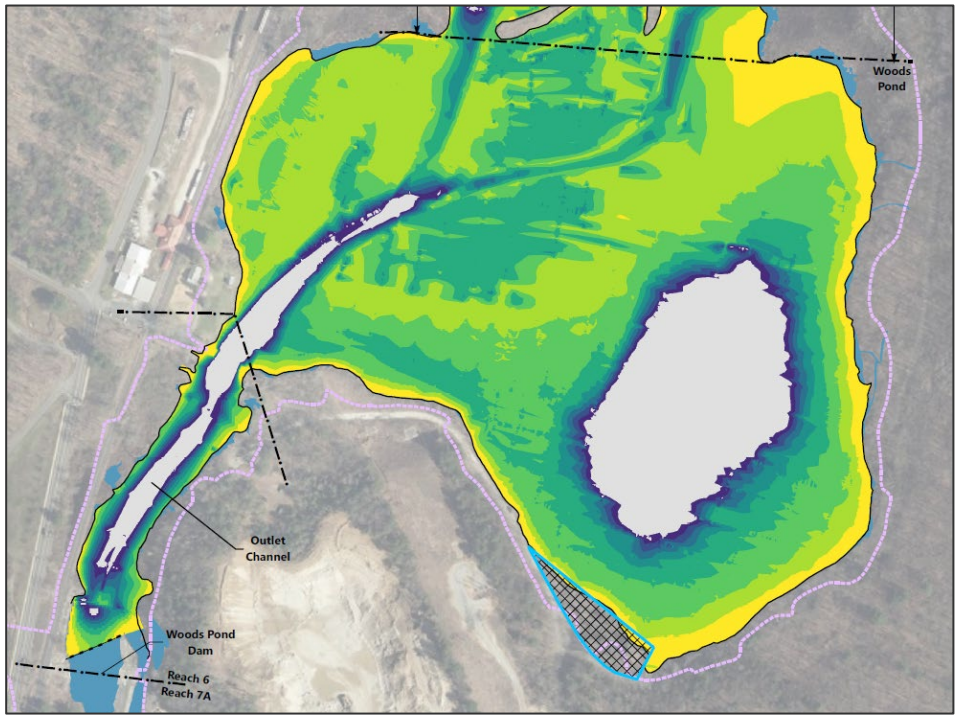
Cultural Resources Assessment (CRA)

- **Phase IA CRA**
  - 2023 Phase IA CRA Report described process to identify areas with known or potential cultural resources and historic structures that could be affected by remediation
  - Identified one historic site in the area – the Lenox Railroad Station (just west of Woods Pond); will not be impacted by remediation; any impact associated with rail siding to be constructed near station will be evaluated
- **Next steps:**
  - Phase IB Cultural Resources Survey (CRS) will evaluate whether remediation and support activities will impact potentially significant cultural resources
  - Phase IB CRS Work Plan submitted to EPA on November 15, 2024 describes planned survey activities

Proposed Reach 6 Remediation Plan

- **Woods Pond and Outlet Channel Sediment**
  - Variable sediment removal depth throughout pond (depends on current bathymetry and required cap thickness)
  - Hydraulic dredging planned for most sediment
  - Some mechanical (excavator) removal needed for debris and areas inaccessible by a hydraulic dredge
  - Capping will occur later (after completion of all upstream remediation)

Current Water Depths in Woods Pond

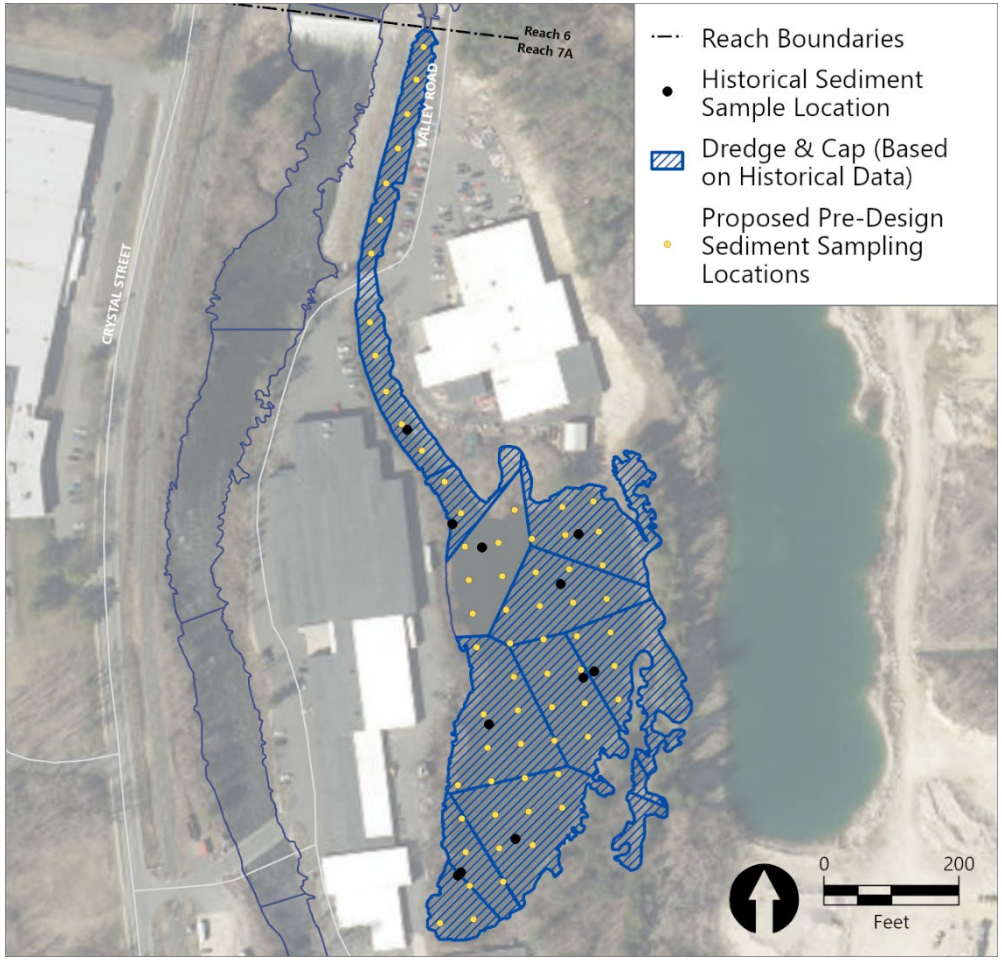


Proposed Reach 6 Remediation Plan (cont'd): Hydraulic Dredging and Transport

- Hydraulic dredges will remove sediment by dislodging sediment and sucking sediment into a pipeline via a dredge pump
- Water will be sucked with the sediment to create a slurry
- The slurry will be hydraulically transported to a dewatering area at the UDF using large-diameter pipes and pumps
- Water will be treated at on-site water treatment facility before discharge to river under EPA-approved criteria

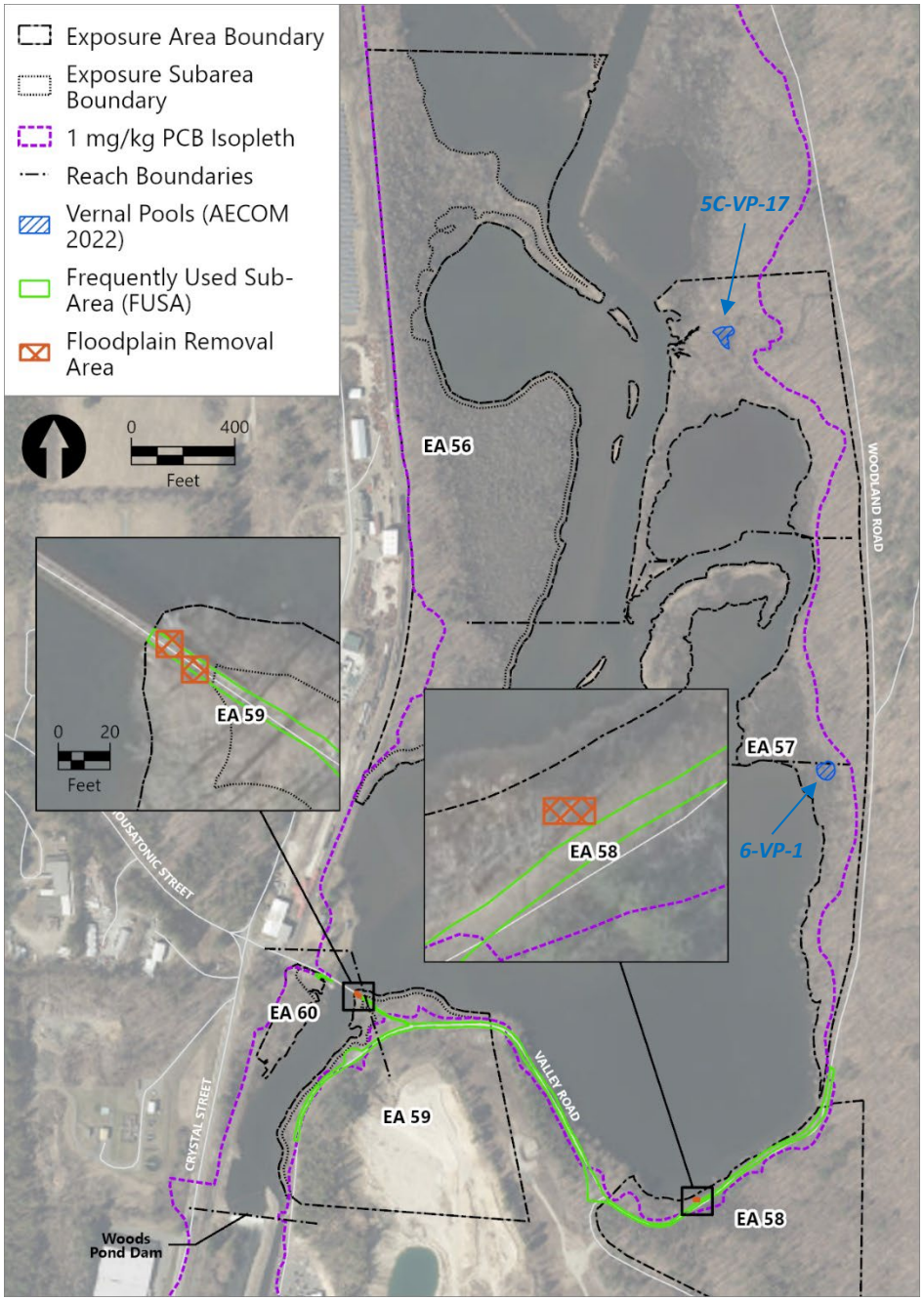
Proposed Reach 6 Remediation Plan (cont'd)

- **Valley Mill Pond Sediment**
  - Remediation will occur in this area as part of Reach 6 work
  - Pre-design PCB sampling and surveys to be conducted to determine the type and extent of remediation necessary
    - Conceptual estimates developed based on historical data



Proposed Reach 6 Remediation Plan (cont'd)

- **Non-Residential Floodplain Soil**
  - In most of Reach 6 floodplain, PCB concentrations are below Performance Standards
  - PCB sampling data indicate that soil remediation is required in one Exposure Area (EA 58) and one Frequently Used Sub-area (EA 59) (~ 400 sq. ft)
- **Vernal Pools**
  - No remediation required; sampling data indicate that average PCB concentrations in both Reach 6 vernal pools are less than the vernal pool Performance Std (3.3 mg/kg)



Disposal Evaluation for Reach 6

- **Disposal will involve a combination of UDF and off-site disposal**
- **Sediment Disposal**
  - Criteria
    - Sediments may be disposed of in the UDF only if average PCB concentration is ≤ 25 mg/kg
    - Any sediment associated with a single vertical core with average PCB concentration ≥ 100 mg/kg must be segregated for off-site disposal
  - Woods Pond evaluation
    - No individual cores have an average PCB concentration ≥ 100 mg/kg
    - Average PCB concentration of sediments to be removed is ~3.5 mg/kg
    - Therefore, all sediment removed from Woods Pond and the outlet channel will be transported to the UDF for disposal
  - Valley Mill Pond evaluation
    - Historical data indicate some sediments will require off-site disposal
    - Supplemental data collected in 2025 will be used to refine evaluation
    - If sediments do not meet criteria for UDF disposal, they will be segregated, transported to the UDF for separate dewatering, and then taken to a rail loading area near Woods Pond for off-site rail transport

Disposal Evaluation for Reach 6 (cont'd)

- **Floodplain Soil Disposal**
  - Criterion
    - Floodplain soil may be disposed of in the UDF only if average PCB concentration is ≤ 50 mg/kg for each Exposure Area
  - Evaluation
    - Soil from EA 58 is > 50 mg/kg – will be segregated for off-site disposal
    - Soil from EA 59 Frequently Used Sub-area is < 50 mg/kg – will be disposed of in the UDF

Reach 6 Design Evaluations

- **Preliminary Cap Evaluation:**
  - Although Reach 6 capping will occur several years after dredging, sediment removal depths are dependent on designed/planned cap thickness
    - Preliminary cap design evaluation was performed to evaluate potential cap thickness
  - A 12-inch sand/gravel cap will be needed in Woods Pond, and a thicker cobble-armored cap will be needed in the outlet channel
- **Dredge Slope Evaluation**
  - A geotechnical slope stability evaluation was performed to assess the stability of potential dredge slope configurations at the shore
- **The results of these evaluations were used to estimate sediment removal volumes**

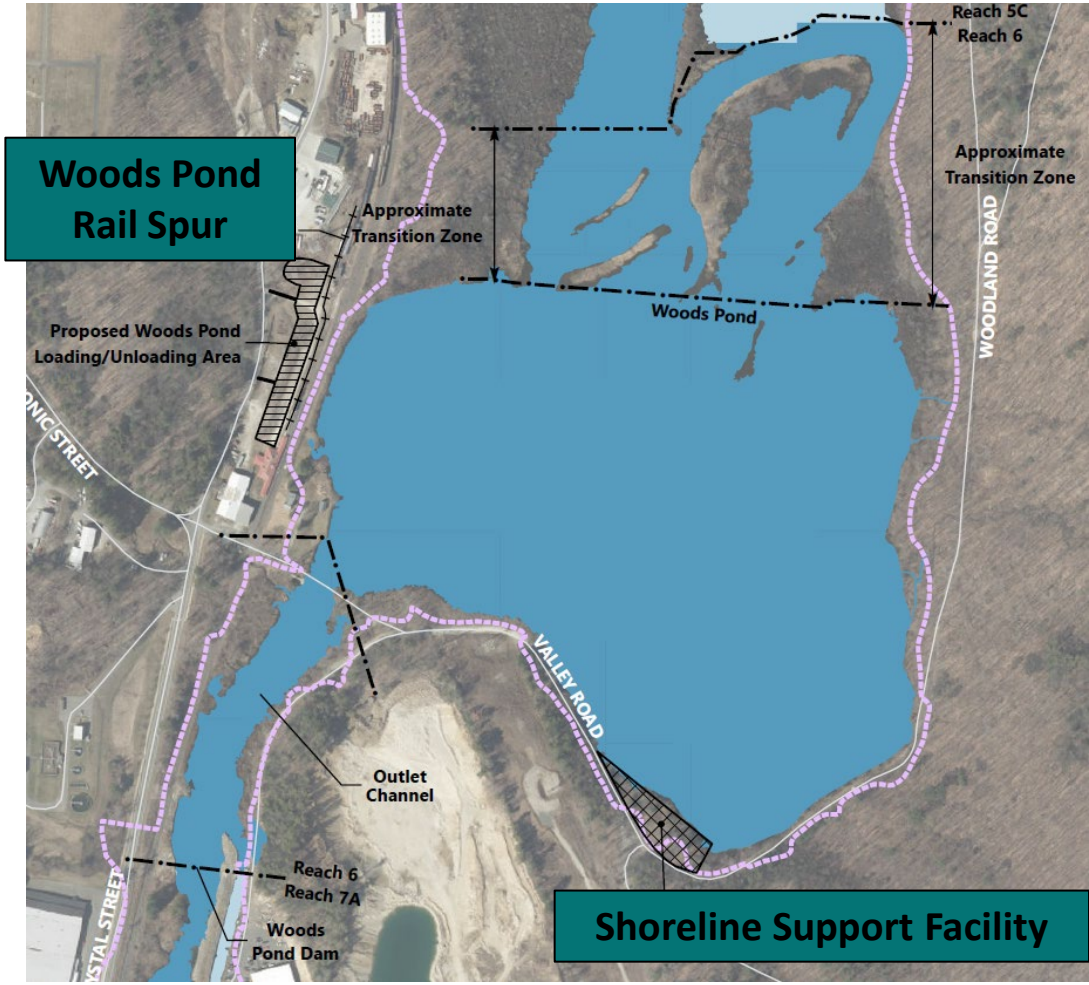
Estimated Removal/Disposal Volumes

Media	Estimated Remediation Area (ac)	Estimated Removal Volume (cy)	Estimated UDF Disposal Volume (cy)	Estimated Off-Site Disposal Volume (cy)
Woods Pond Sediment	53.60	461,000	461,000	0
Outlet Channel Sediment	3.71	20,000	20,000	0
Valley Mill Pond Sediment	4.2	12,300	3,700	8,600
Floodplain Soil	0.009	20	10	10
Vernal Pools	0	0	0	0
	Totals	**493,320**	**484,710**	**8,610**

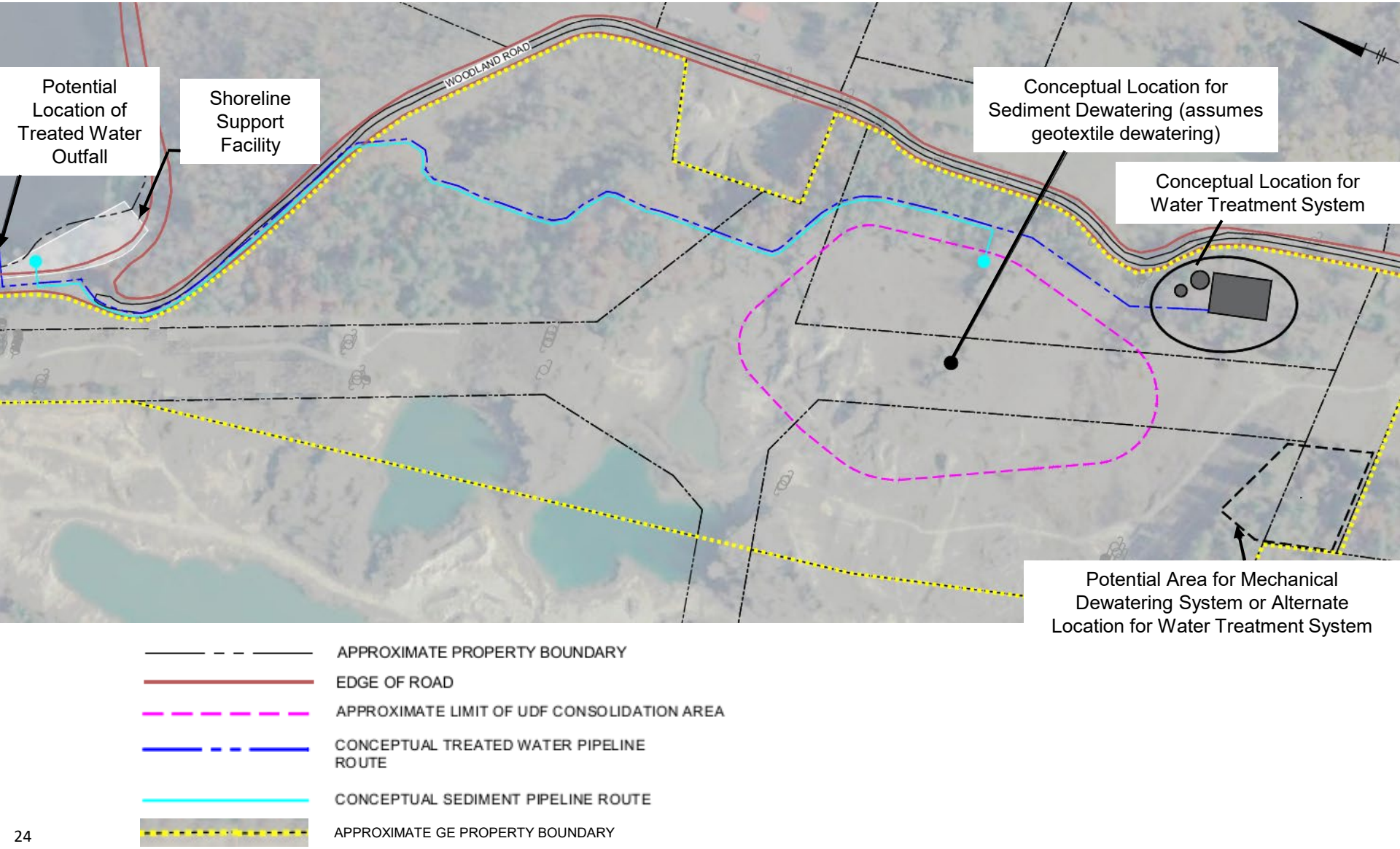
** All quantities are preliminary estimates, are rounded, and may be subject to change during final design. Volumes represent in-place quantities.*

Support Facilities

- A shoreline support facility will be built on the southern shore of Woods Pond to facilitate dredging/material handling
  - A bulkhead and boat launch will be constructed to provide pond access
  - Geotechnical investigations and surveying will be performed to inform decisions about final design and location of these facilities
- A rail spur and rail loading / unloading area will be constructed west of Woods Pond



Conceptual Hydraulic Sediment Transport Layout



Quality of Life (QOL) Considerations for Final Design

- In November 2024, GE submitted to EPA a revised QOL Compliance Plan that includes QOL standards for air quality, noise, odor, and lighting
- During Reach 6 remediation, best management practices (BMPs) and routine control measures will be implemented to maintain compliance with the QOL standards
- Monitoring for air quality and noise will be performed during the remediation to verify compliance with standards
- If needed, contingency response actions and mitigation measures will be implemented in coordination with EPA to address any exceedances of the QOL standards
- The Reach 6 final design and pre-construction plans will describe specific measures that will be implemented to mitigate potential exceedance of the QOL standards

Next Steps for Reach 6

- **Supplemental Data Collection (2025)**
  - Supplemental characterization sampling
    - PCBs (Valley Mill Pond sediment; floodplain soil)
    - Sediment waste characterization for disposal
  - Upland and in-water geotechnical characterization
  - Field studies
    - Bathymetry/topography
    - Shoreline delineation
    - Structure and utility surveys
  - Data to support cap design in Valley Mill Pond

Next Steps for Reach 6 (cont'd)

- **Dewatering and Water Treatment Design (2025/2026)**
  - Conceptual plans submitted to EPA on December 20, 2024
  - Treatability studies will test potential technologies for sediment dewatering and water treatment of the hydraulically transported dredge slurry
  - Data from treatability testing will be used to support final design of sediment dewatering and water treatment systems to be installed at the UDF
- **Final RD/RA Work Plan for Reach 6 (2026)**
  - Final design will be submitted 60 days after last EPA approval of various precedent activities/deliverables – currently anticipated in 2026
- **Contractor procurement, followed by sediment and soil removal work**

Summary

- **GE's Conceptual RD/RA Work Plan provides preliminary design information for Reach 6**
  - Removal of more than 490,000 cy of sediment
  - Sediment will be dredged hydraulically and pumped to the UDF (possibly supplemented by limited mechanical removal)
  - Limited floodplain soil removal
  - Some material with higher PCB concentrations will be transported off-site by rail (~ 8,610 cy)
  - Removal will take 3 to 4 years
  - A sediment cap will be placed after upstream remediation
- **EPA public input period ends February 3, 2025**
- **Following EPA review of the Conceptual RD/RA Work Plan, and following supplemental data collection and associated design evaluations, GE will submit to EPA a Final RD/RA Work Plan**

Thank you. Questions?