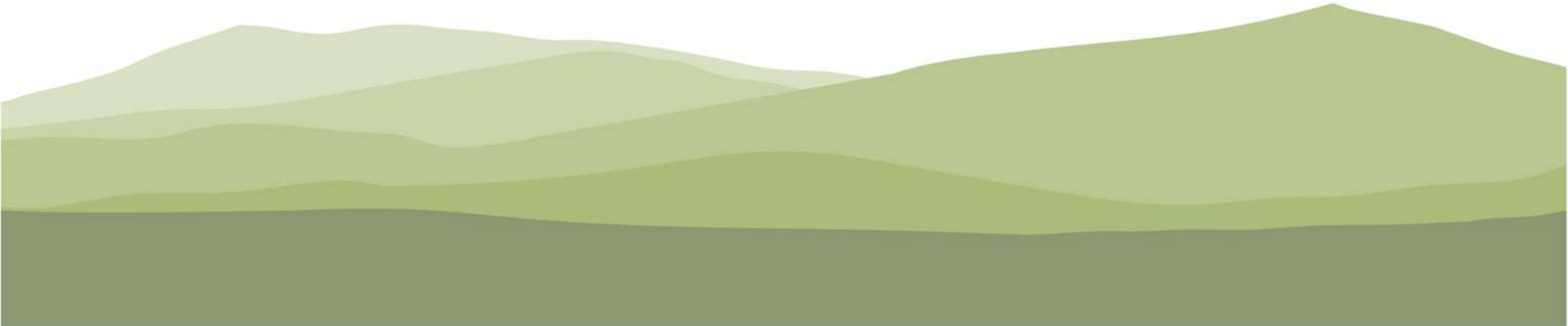


MAIDEN LANE DAM REMOVAL: SEDIMENT MANAGEMENT IN HUDSON VALLEY



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OUTLINE



★ Fort Edward Dam

- A cautionary tale of dam removal in the Hudson Valley

★ Recent Hudson River Tributary Dam Removals

- Strooks Felt & Barrier #1

★ Maiden Lane Dam Removal

- Site & design considerations
- Sediment characterization
- Sediment management approach
- Permitting considerations
- Initial response from NYSDEC



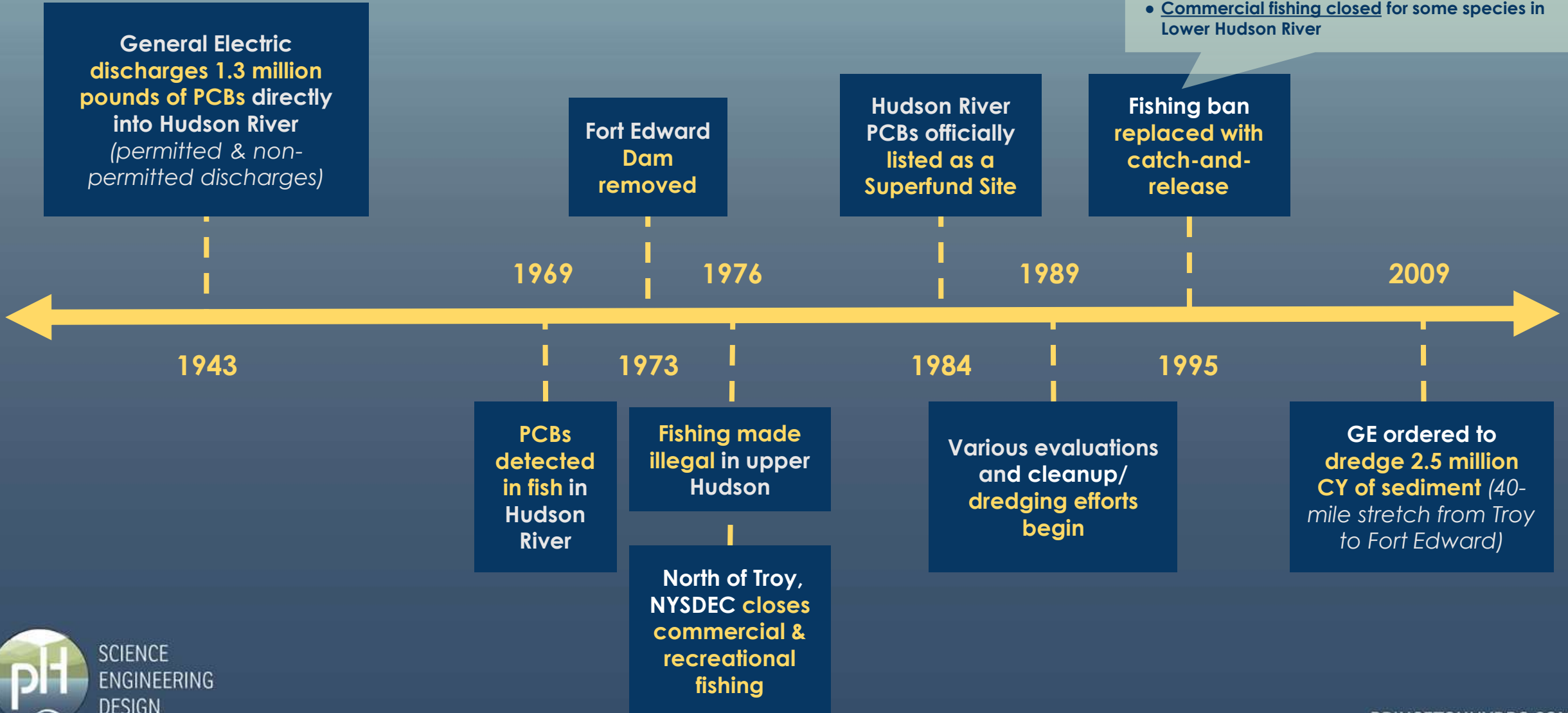
Source: hudsonriverstories.com

FORT EDWARD DAM

FORT EDWARD DAM TIMELINE

To this day, NYSDOH recommends:

- General people eat no fish from Upper Hudson
- Children under 15 and women in child-bearing ages eat no fish from Hudson
- General population eat limited species from Troy to Catskill
- Commercial fishing closed for some species in Lower Hudson River



FORT EDWARD DAM



GE Facility
Source: NY Times (2016)

- ★ Removed in 1973
- ★ Owned by Niagara Mohawk Power Corporation
- ★ Downstream of 2 GE facilities in Hudson Falls, Fort Edward
- ★ Black eye for USACE, NYSDEC, who permitted its removal
- ★ 30 feet tall, ~600 feet long
 - 18 feet of sediment behind dam
 - An estimated 440,000 CY of sediment mobilized after 1 year
 - An estimated 1 million CY of sediment behind the dam at that time



RECENT DAM REMOVAL PROGRESS IN HUDSON VALLEY



SCIENCE
ENGINEERING
DESIGN

PRINCETONHYDRO.COM

STROOKS FELT DAM REMOVAL

QUASSAIC CREEK



Removed Fall 2020

Engineer/Design:
Hydro

Princeton

Construction:

RiverLogic

Client:

Riverkeeper



BARRIER #1 REMOVAL

FURNACE BROOK



Removed Fall 2020

Engineer/Design:
Hydro

Princeton

Construction:

RiverLogic

Client:

Riverkeeper





MAIDEN LAKE DAM REMOVAL



SCIENCE
ENGINEERING
DESIGN

PRINCETONHYDRO.COM

MAIDEN LANE DAM

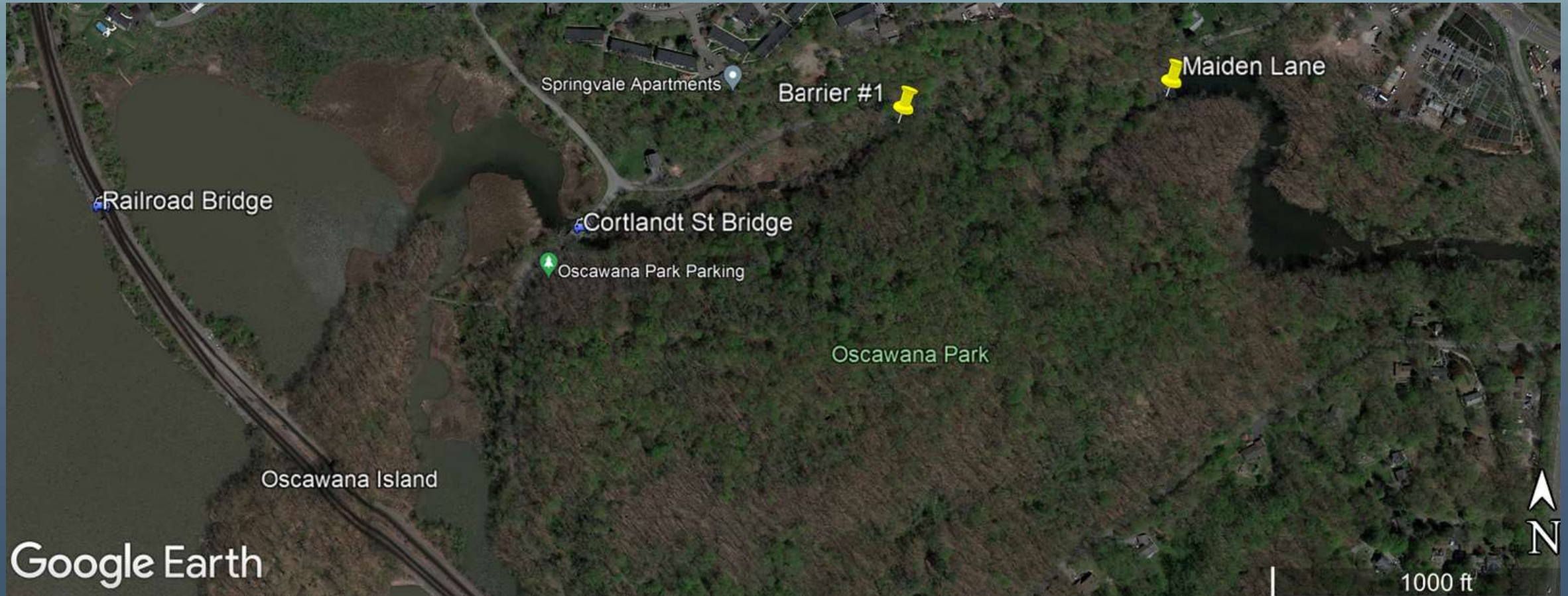


25 feet tall
7.9 Sq mi watershed



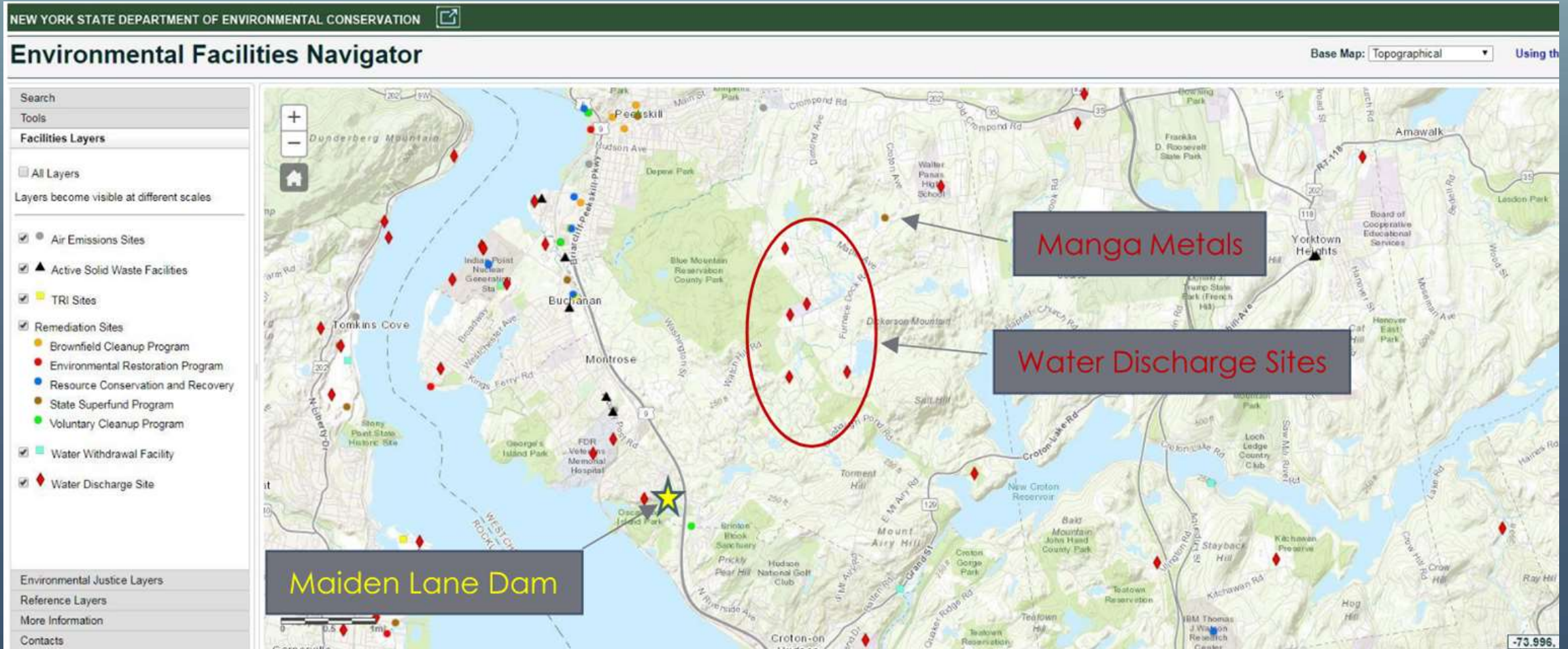
SCIENCE
ENGINEERING
DESIGN

SITE CONCERNS



Sediment Management primary design consideration
Flooding at Cortlandt St. Bridge (downstream)

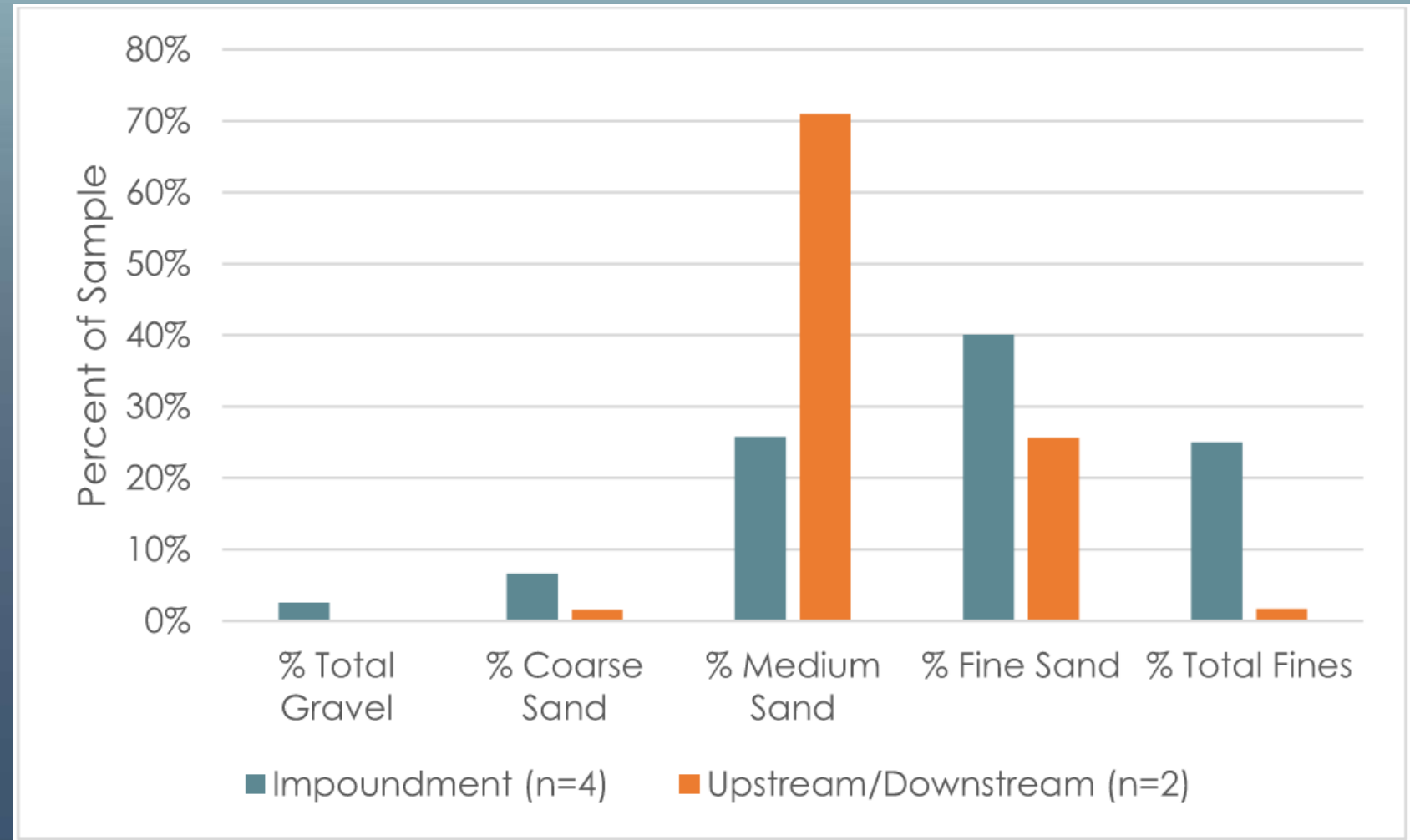
SEDIMENT QUALITY



SEDIMENT QUALITY

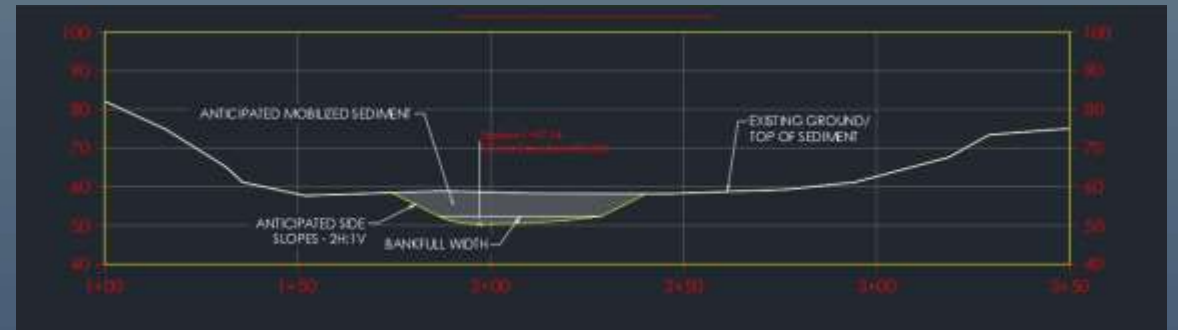
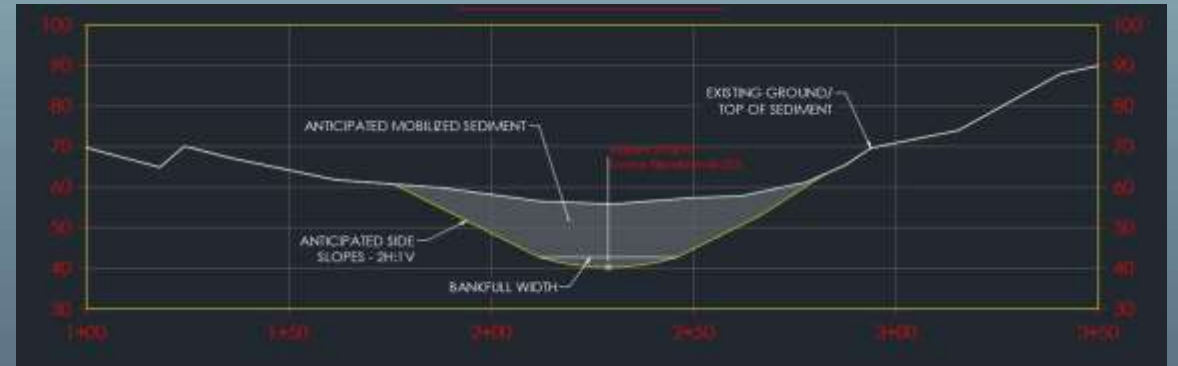
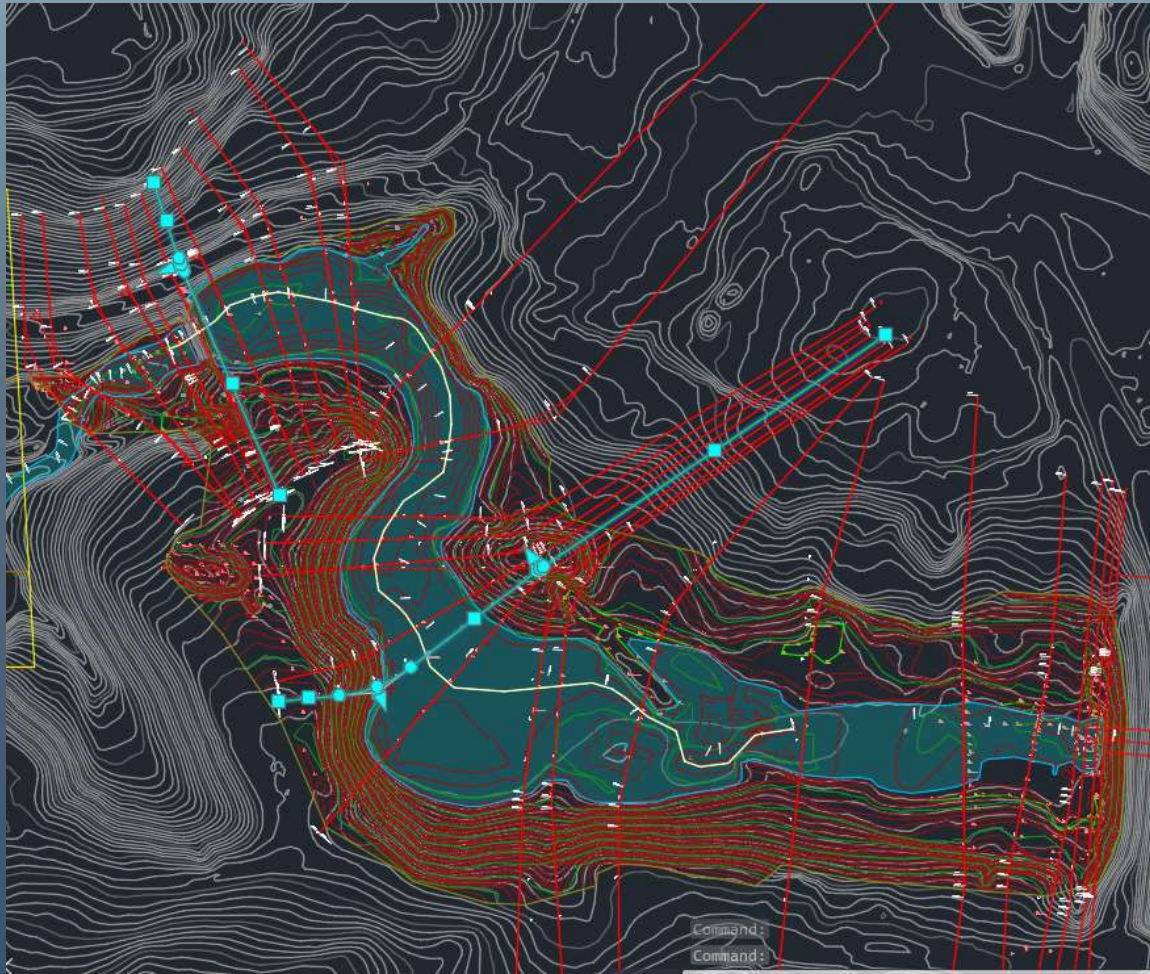
Moderate exceedances

- PAHs
- pesticides
- metals



Impounded Sediment Size

IMPOUNDED SEDIMENT QUANTITY



~36-39,000 CY of total impounded sediment

~20-24,000 CY of sediment that would mobilize upon dam removal

ANNUAL SEDIMENT YIELD

★ Dam and Sediment in the Hudson (DaSH) tool

- Research to assess how sediment released by dam removals in Lower Hudson River watershed would affect the estuary
 - ~900 cy/yr
 - 22-27 years of annual sediment

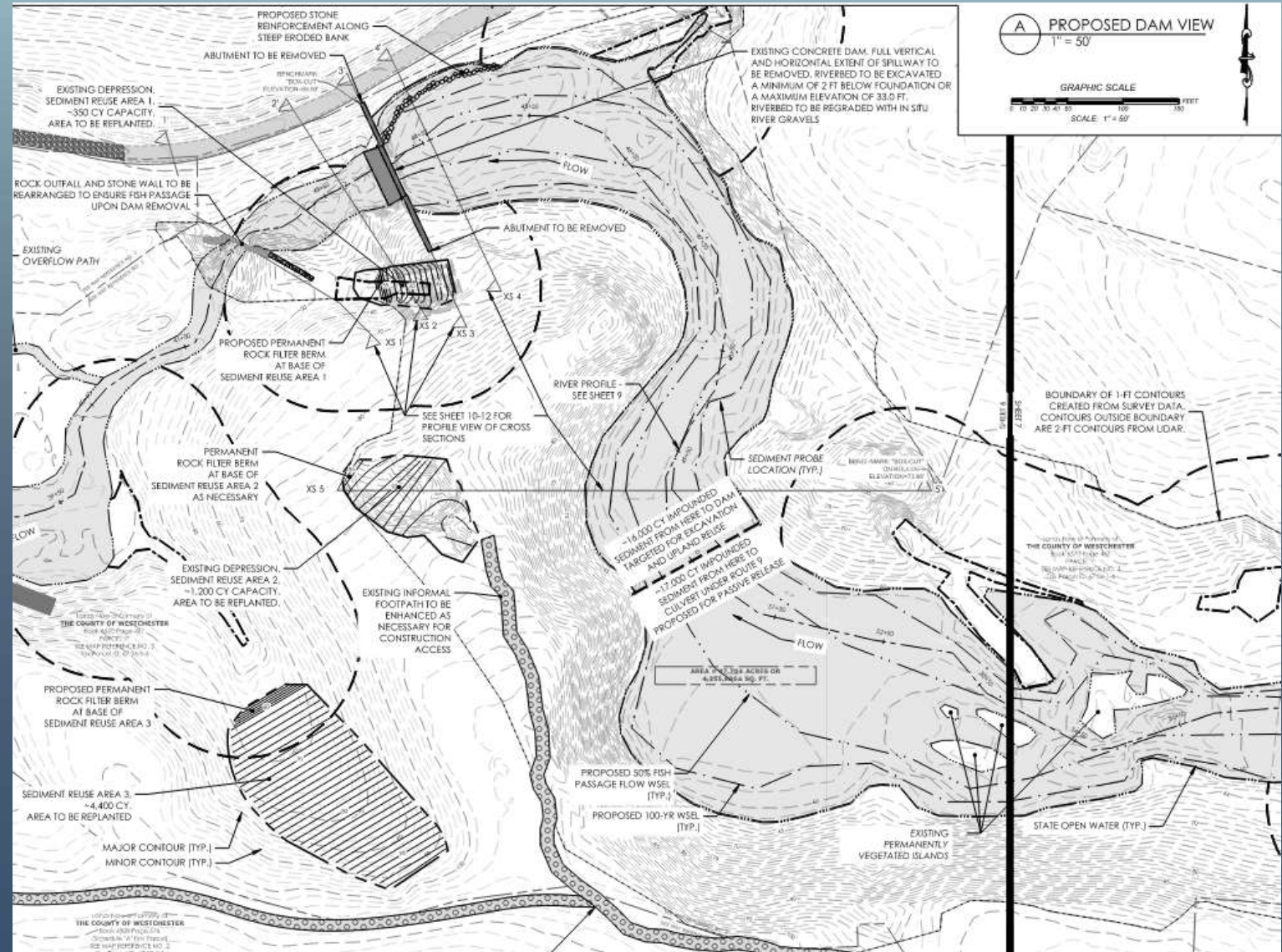
★ Erosion and Sedimentation Manual, Bureau of Reclamation

- Qualitative watershed calculation
 - 2,500-7,000 cy/yr
 - 3-10 years of annual sediment

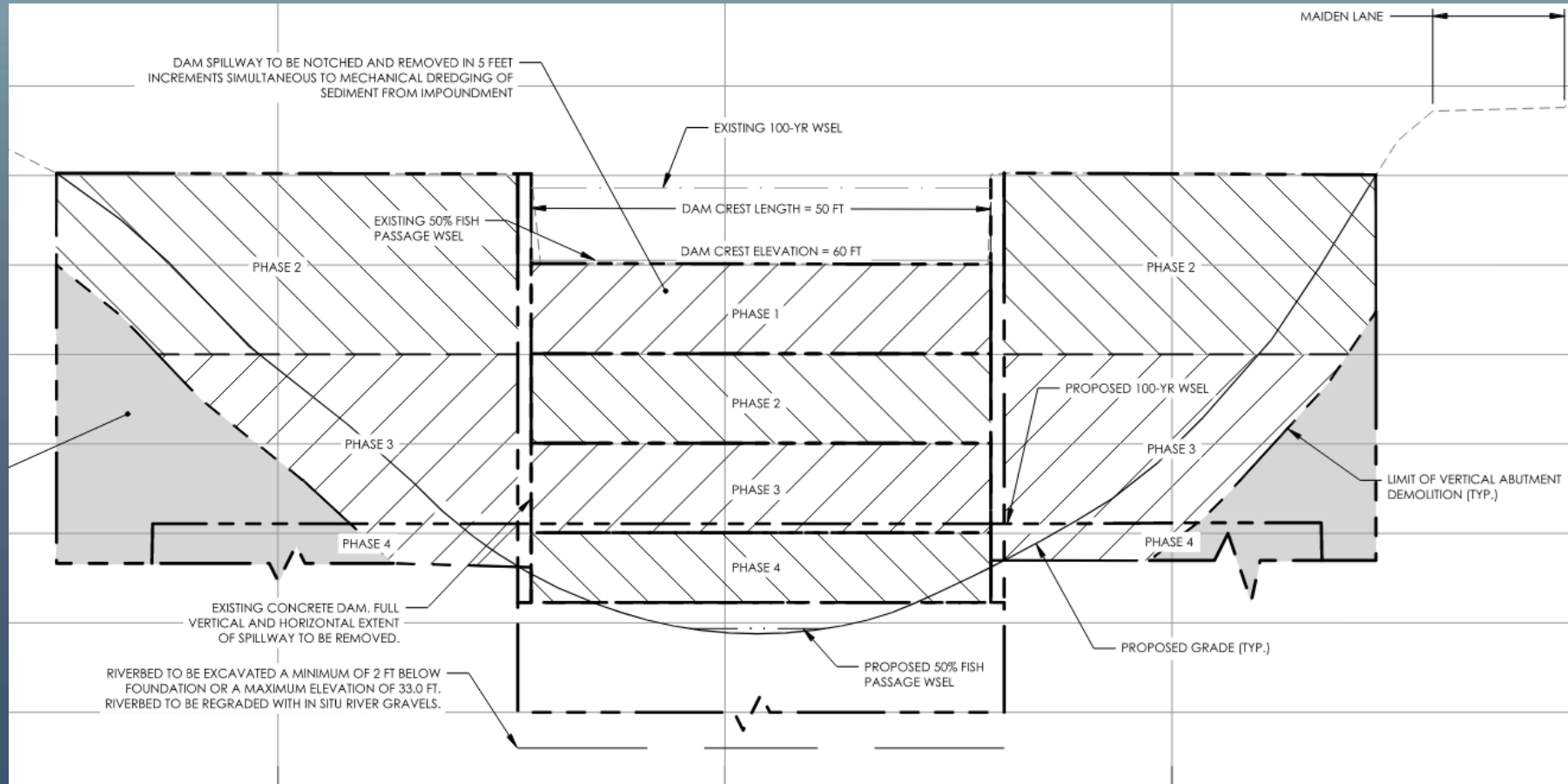
SEDIMENT MANAGEMENT APPROACH

Beneficial Upland Reuse

~6,000 CY in total placed in historic borrow pits onsite



SEDIMENT MANAGEMENT APPROACH



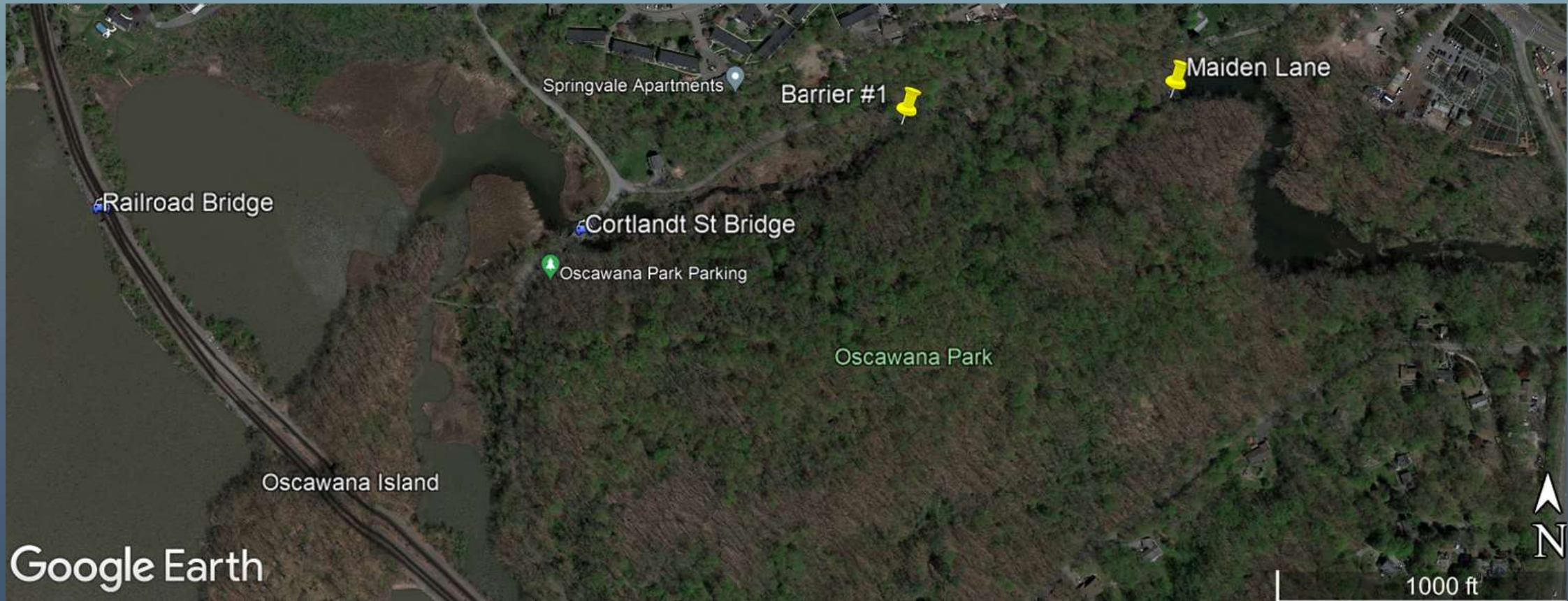
**Beneficial
upland reuse**

*~6,000 cy placed in
historic borrow pits
onsite*

**Passive sediment
release with
phased removal**

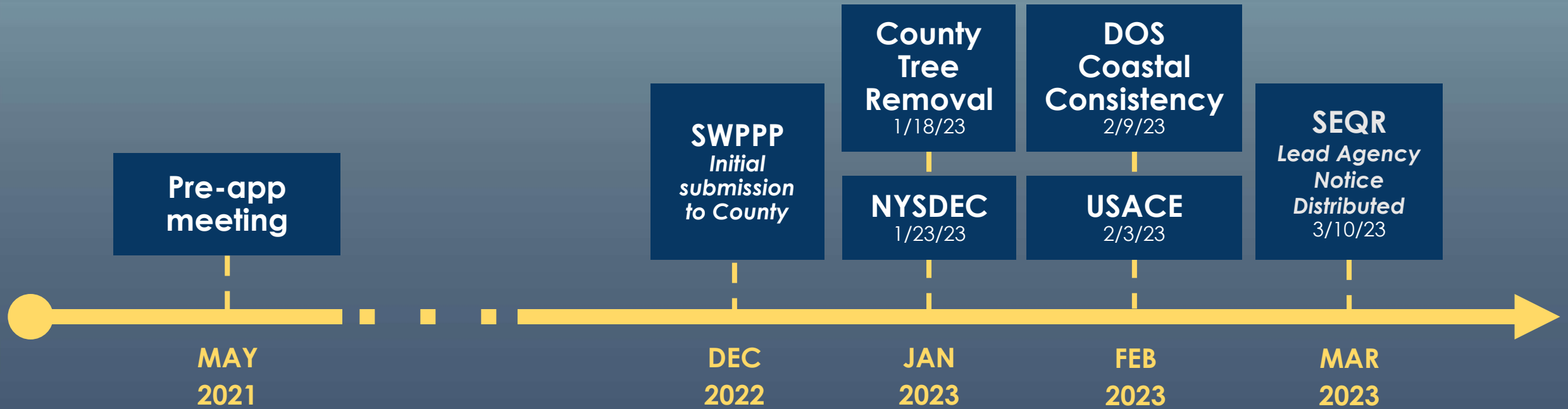
*Four phases over
~18 months*

ADAPTIVE MANAGEMENT APPROACH



- ★ Downstream sediment transport monitoring
- ★ Turbidity monitoring
- ★ Impoundment stabilization & planting monitoring

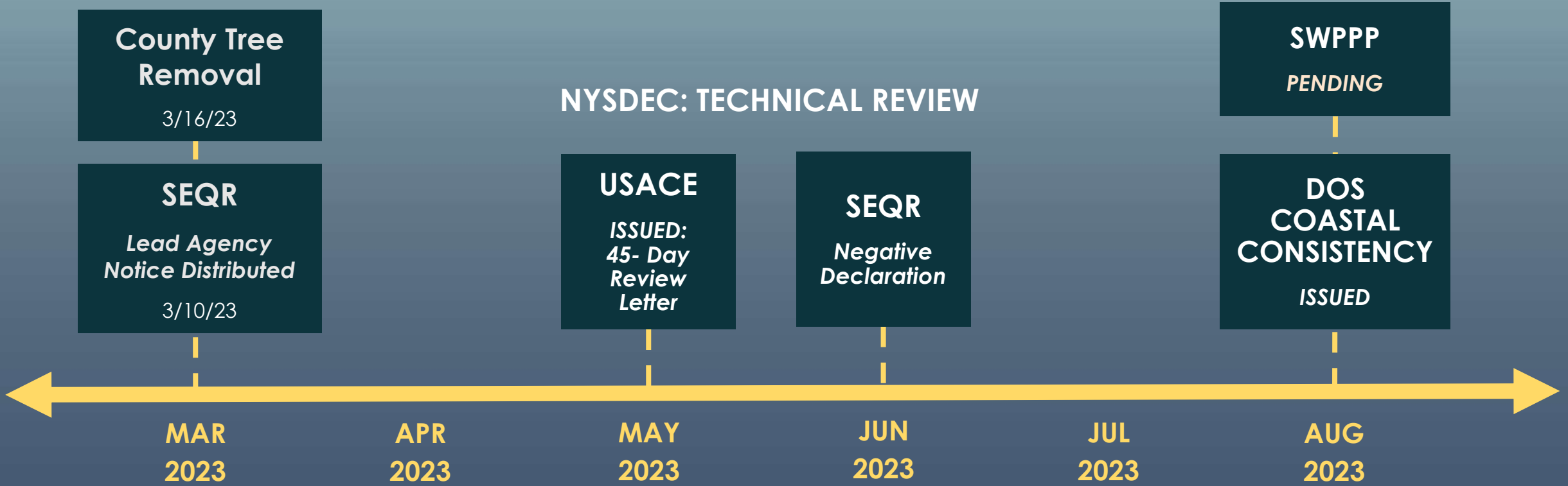
PERMITTING: APPLICATIONS



TOWN: Pending

Town asked we submit application after USACE and NYSDEC issues permits.

PERMITTING: STATUS



TOWN: Pending

Pre-application discussions requested for submission after NYSDEC issues permit

MAIN TAKEAWAYS



- ★ **History** of Sediment Management in Hudson Valley Dam Removals is **complicated**
- ★ **Adaptive Management** allows natural processes to support construction efforts
- ★ We'll hear officially, but **NYSDEC** appears to be **supportive of the sediment management plan** at Maiden Lane

QUESTIONS?



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THANK
YOU!

PRINCETONHYDRO.COM