



# Lake Lou Yaeger Watershed Implementation Project

Illinois Association of Floodplain and Stormwater Management

2022 Annual Conference

March 9 2022

Ted LaBelle P.E. CFM Env SP





## ***OVERVIEW***

REDUCE THE SEDIMENT AND NUTRIENTS ENTERING LAKE YAEGER

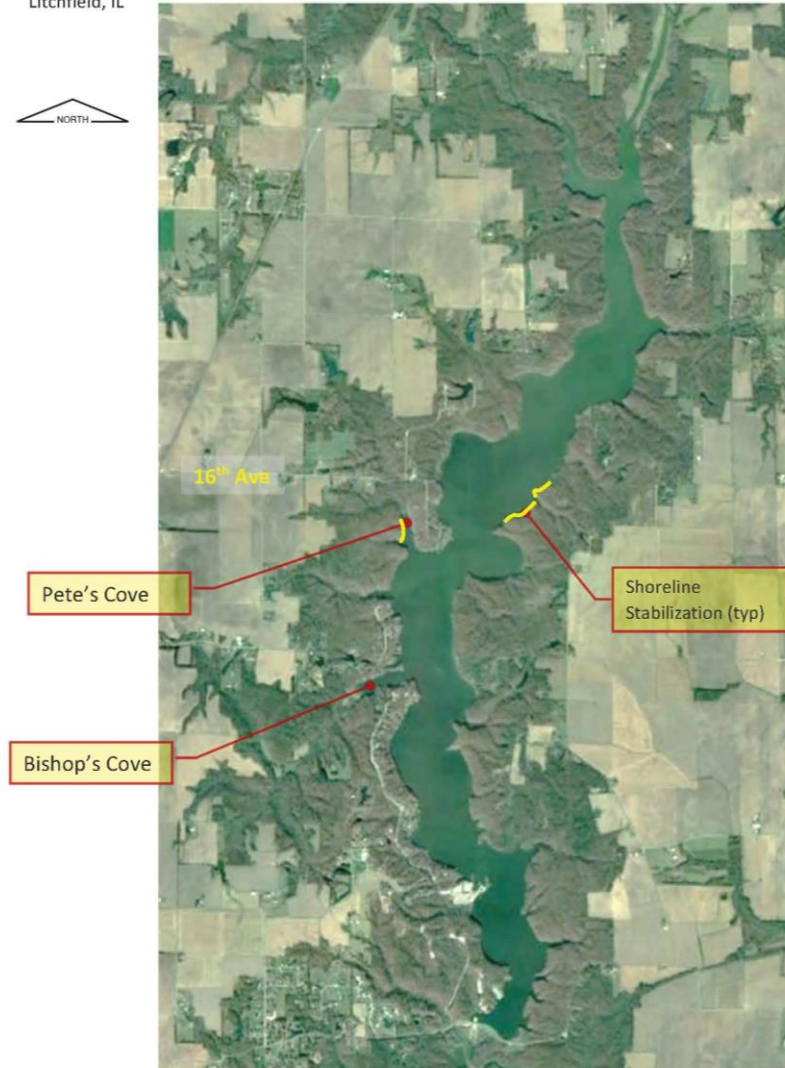
## ***TIMELINE***

- APPLY FOR SECTION 319 GRANT JULY 2017
- GRANT AWARDED AND EXECUTED DECEMBER 2018
- PRE-PERMIT DISCUSSION WITH CORPS OF ENGINEERS JANUARY – MARCH 2019
  - RE-FORMULATE BMP'S APRIL – JULY 2019
- SECTION 404 APPLICATION AND WATERS REPORT AUGUST – DECEMBER 2019
- CORPS REVIEW OF PERMIT AND PLAN COMPLETION DECEMBER 2019 – MAY 2020
  - CONSTRUCTION BIDDING AND AWARD MAY – JUNE 2020
- CONSTRUCTION TO SUBSTANTIAL COMPLETION JULY – NOVEMBER 2020
  - CONSTRUCTION COMPLETION SPRING 2021

## General Lake Map

### Lake Lou Yaeger 319 Grant Application

Litchfield, IL



# Application for Section 319 Grant

## Three Best Management Practices

- Shoreline Protection
- Bishop's Cove Sediment Basin Impoundment
- Pete's Cove Sediment Basin Impoundment





Bishop's Cove tributary





Pete's Cove tributary





# Reformulated BMP's

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- Shoreline Protection
- Bishop's Cove
  - In-lake Sediment Basin
  - Three Dry Sediment Trapping Cells
- Pete's Cove
  - In-lake Sediment Basin
  - Impoundment Sediment Basin





*Lake Lou Yaeger*

*Built 1960's*

*Lake Area 1400 acres*

*Watershed 104 sq. miles*

Five BMP's planned

Four BMP's constructed

Shoreline Protection 2,270 feet

- Sediment Reduction 291 tons/year

Bishop's Cove

- Watershed 2.3 sq. miles
- Sediment Reduction 290 tons/year

Pete's Cove

- Watershed 1.2 sq. miles
- Sediment Reduction 114 tons/year



# Shoreline Protection

Riprap ridge placed by barge







## Shoreline Protection at Vertical Bank

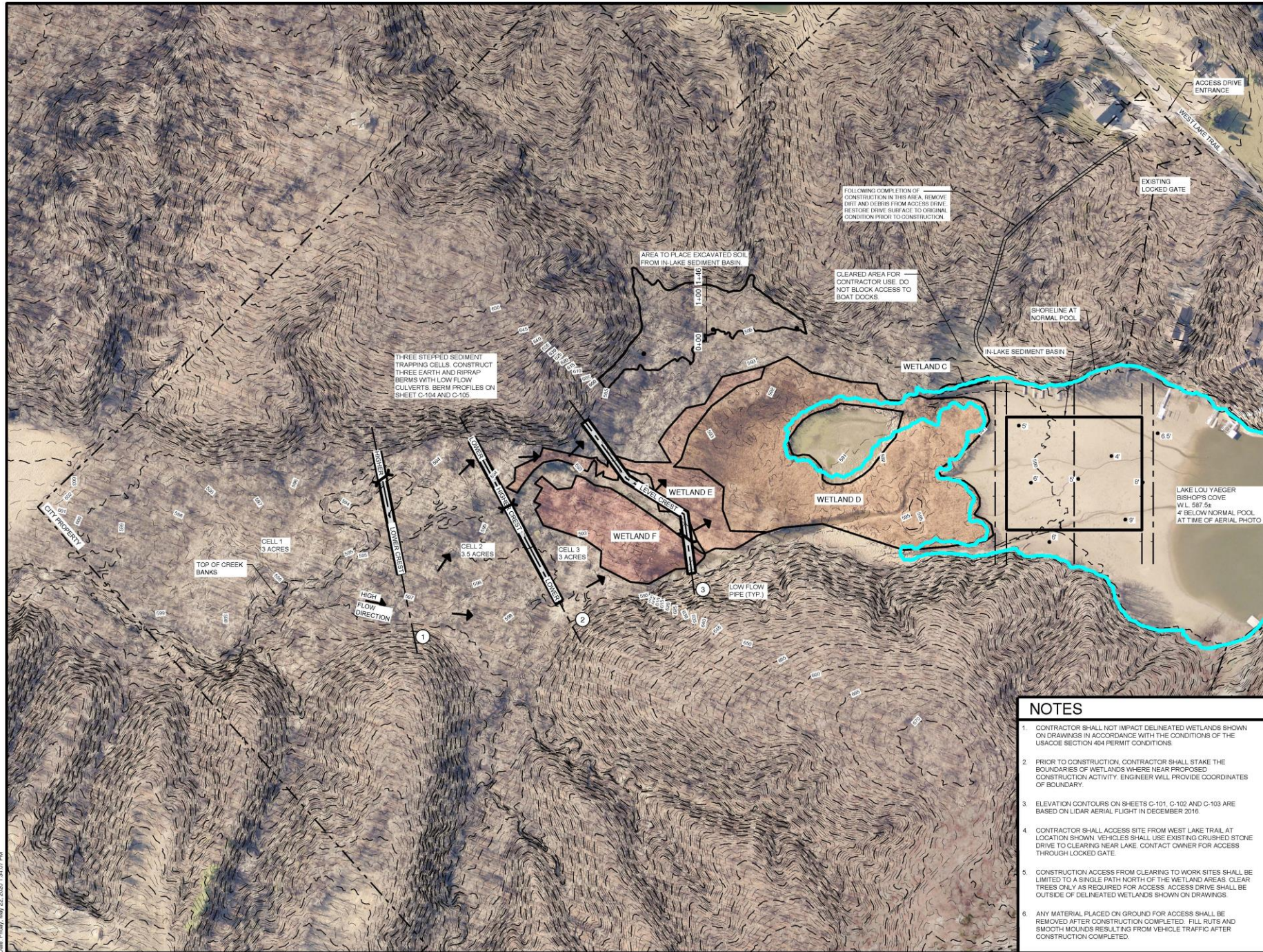




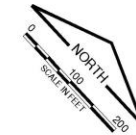
# Shoreline Protection

Installed 25 years ago





License No. 184-000613  
CONSULTANTS



ISSUED FOR BIDDING  
MAY 2020

LAKE LOU YAEGER  
WATERSHED  
IMPLEMENTATION PROJECT

OWNER

CITY OF LITCHFIELD  
LITCHFIELD, ILLINOIS

## NOTES

|      |      |             |
|------|------|-------------|
| MARK | DATE | DESCRIPTION |
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|  |                               |
|--|-------------------------------|
| PROJECT NO:                                    | 160028-04-03                  |
| CAD DWG FILE:                                  | 1600280403 - DESIGN PLANS.DWG |
| DESIGNED BY:                                   | GK, TL                        |
| DRAWN BY:                                      | DLB                           |
| CHECKED BY:                                    | TL                            |
| APPROVED BY:                                   | TL                            |
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## SHEET TITLE

## BISHOP'S COVE OVERALL PLAN

C-101

SHEET 3 OF 28



# Sediment Trapping Cells

Three low height earth and riprap berms





# Completed berms

Low flow pipes through berms

Aligned to avoid wetlands







Berms 1 & 2

Looking upstream - Drone





Berms 2 & 3

Looking downstream to lake



# In-lake Sediment Basin

Excavation with lake level  
lowered 6 feet







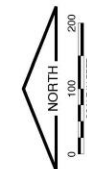
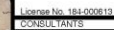
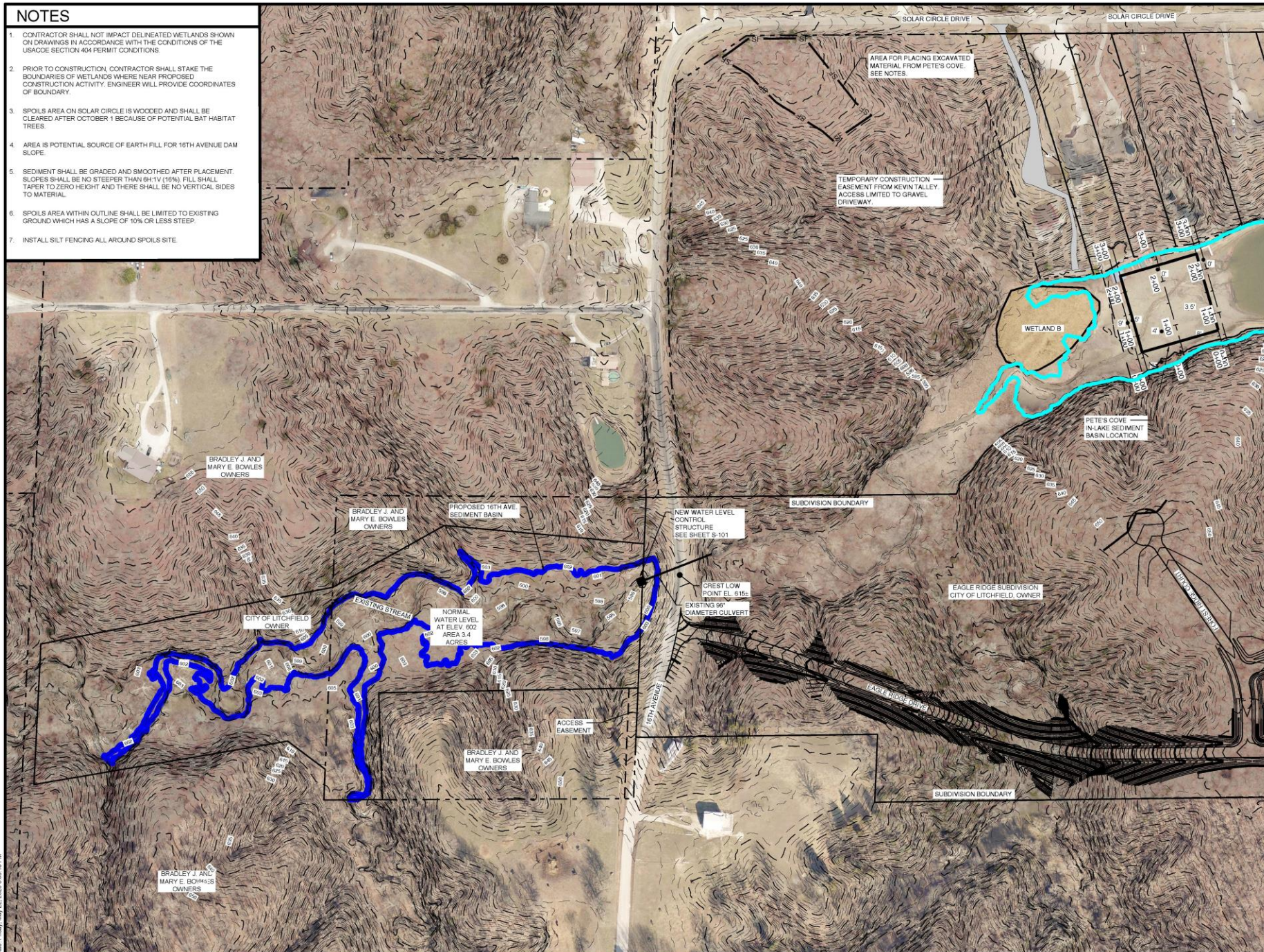
# Bishop's Cove

Completed basin after two storms

No sediment deposits visible



1. CONTRACTOR SHALL NOT IMPACT DELINEATED WETLANDS SHOWN ON DRAWINGS IN ACCORDANCE WITH THE CONDITIONS OF THE USAGE SECTION 404 PERMIT CONDITIONS.
2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL STAKE THE BOUNDARIES OF WETLANDS WHERE NEAR PROPOSED CONSTRUCTION ACTIVITY. ENGINEER WILL PROVIDE COORDINATES OF BOUNDARY.
3. SPOILS AREA ON SOLAR CIRCLE IS WOODED AND SHALL BE CLEARED AFTER OCTOBER 1 BECAUSE OF POTENTIAL BAT HABITAT TREES.
4. AREA IS POTENTIAL SOURCE OF EARTH FILL FOR 16TH AVENUE DAM SLOPE.
5. SEDIMENT SHALL BE GRACED AND SMOOTHED AFTER PLACEMENT. SLOPES SHALL BE NO STEEPER THAN 4H:1V (10%). FILL SHALL TAPER TO ZERO HEIGHT AND THERE SHALL BE NO VERTICAL SIDES TO MATERIAL.
6. SPOILS AREA WITHIN OUTLINE SHALL BE LIMITED TO EXISTING GROUND WHICH HAS A SLOPE OF 10% OR LESS STEEP.
7. INSTALL SILT FENCING ALL AROUND SPOILS SITE.



ISSUED FOR BIDDING  
MAY 2020

LAKE LOU YAEGER  
WATERSHED  
IMPLEMENTATION PROJECT

OWNER

CITY OF LITCHFIELD  
LITCHFIELD, ILLINOIS

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SHEET TITLE

PETE'S COVE  
OVERALL PLAN

C-110





# Pete's Cove

Completed basin after  
two storms

Sediment deposits at  
creek entry





# Pete's Cove

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Sediment deposit after two storms  
in first half of December





# Bishop'sCove

Upstream berm 1 after  
two storms





# Bishop's Cove

- Downstream berm 3





## Bishop's Cove

West creek into cove

No visible sediment  
downstream of the berms





# Bishop's Cove

East creek into cove

No visible sediment  
downstream of the berms



# Questions

Presenter

Ted LaBelle P.E. CFM Env SP

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