The COMMONS

FIELDDOC

Planning, Tracking and Documenting BMP Implementation in the Bay Watershed

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Our Team

John Dawes

Executive Director/Co-Founder

Erin Hofmann

Project Strategy Lead

Brendan McIntyre

Senior Software Engineer/Co-Founder

Ivan Trajkovic

Senior Software Engineer/Dev. Opps

Gabe Watson

Data Scientist

Zach Thrun

Software Engineer UI/UX Developer

Robbie O’Donnell

WDC Coordinator

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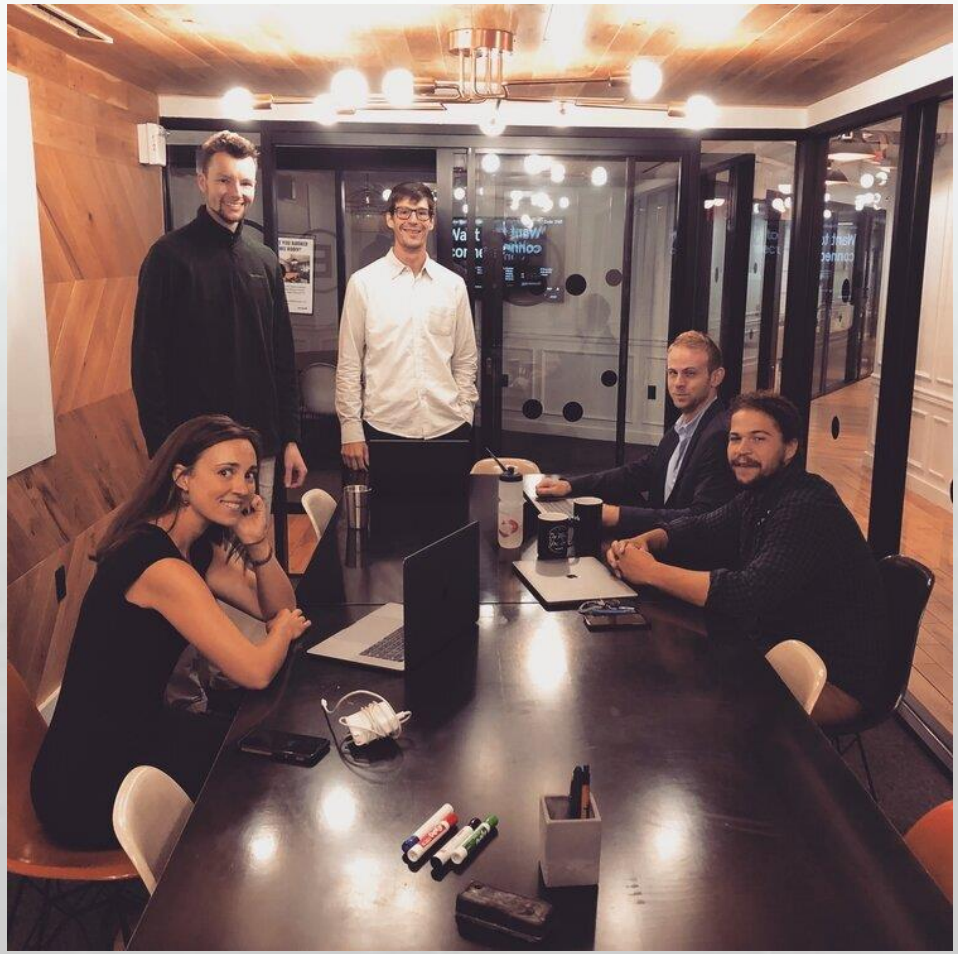
Our Organization



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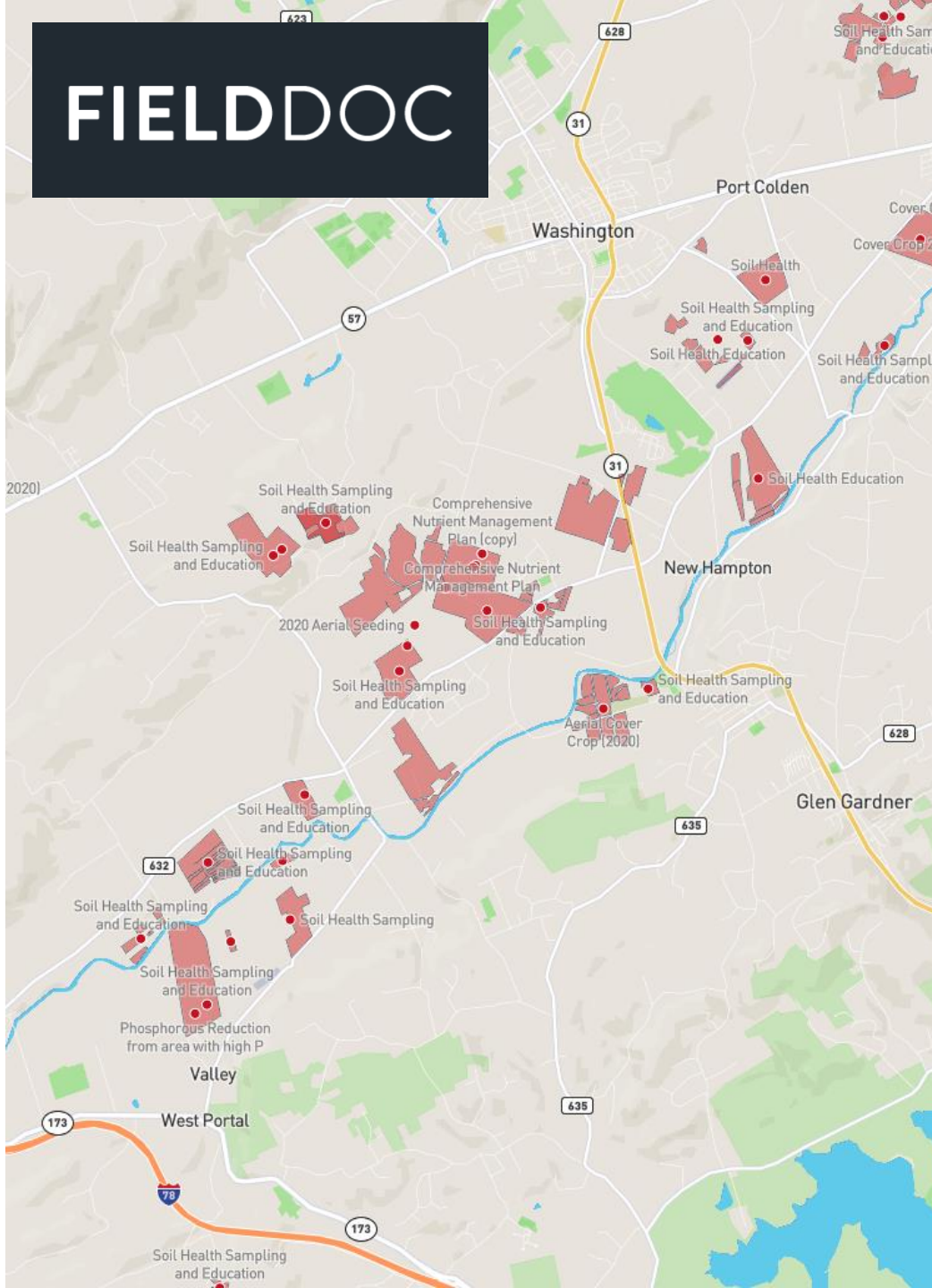
Programs

Provide the highest level or organization for restoration and land protection work. Real-time insight across all related implementation

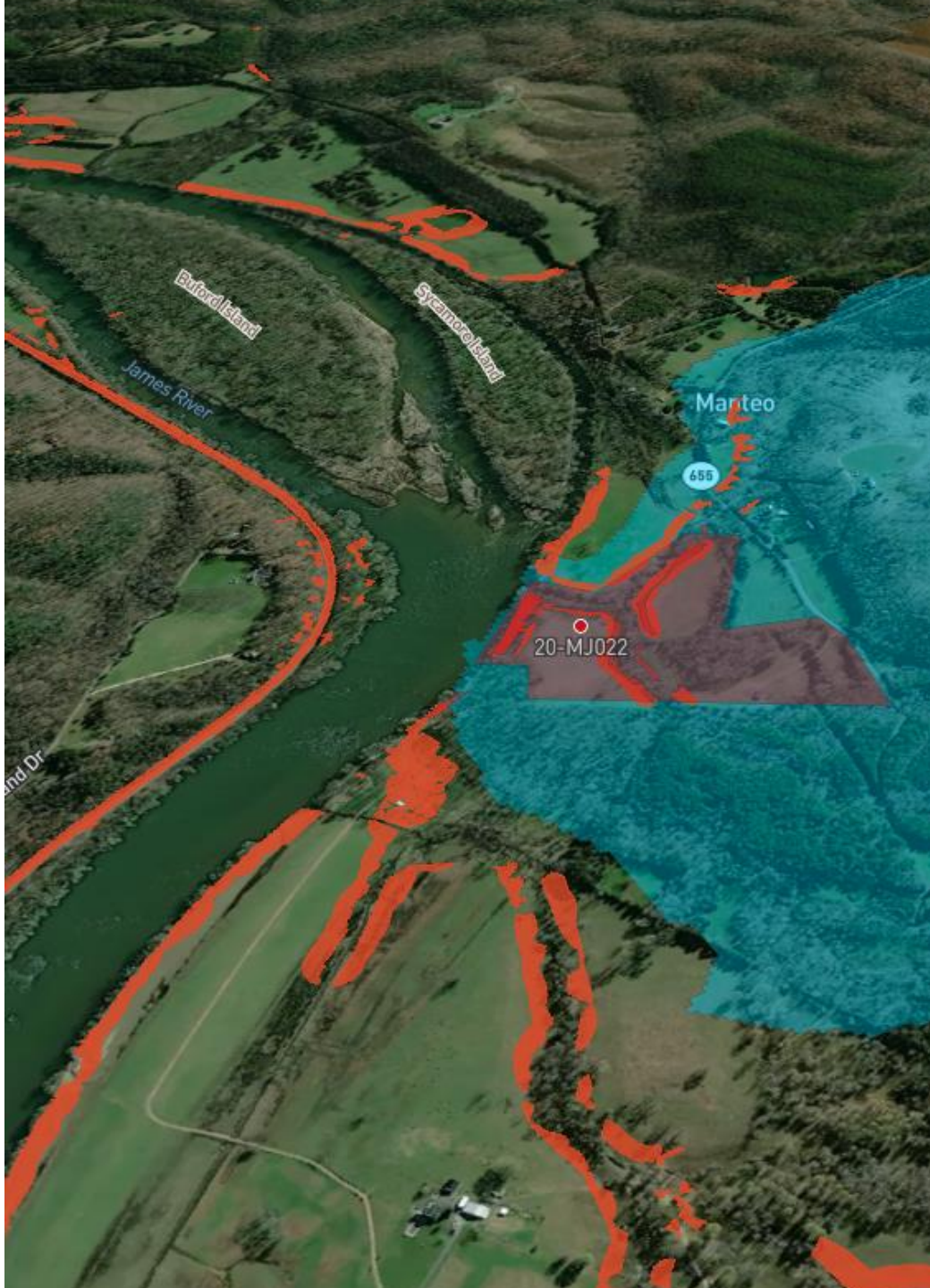


Projects

Organizes all sites and BMPs into a convenient folder to classify and details work.

Sites (optional)

Specific properties or places where BMPs are being implemented.



Practices

Detail act
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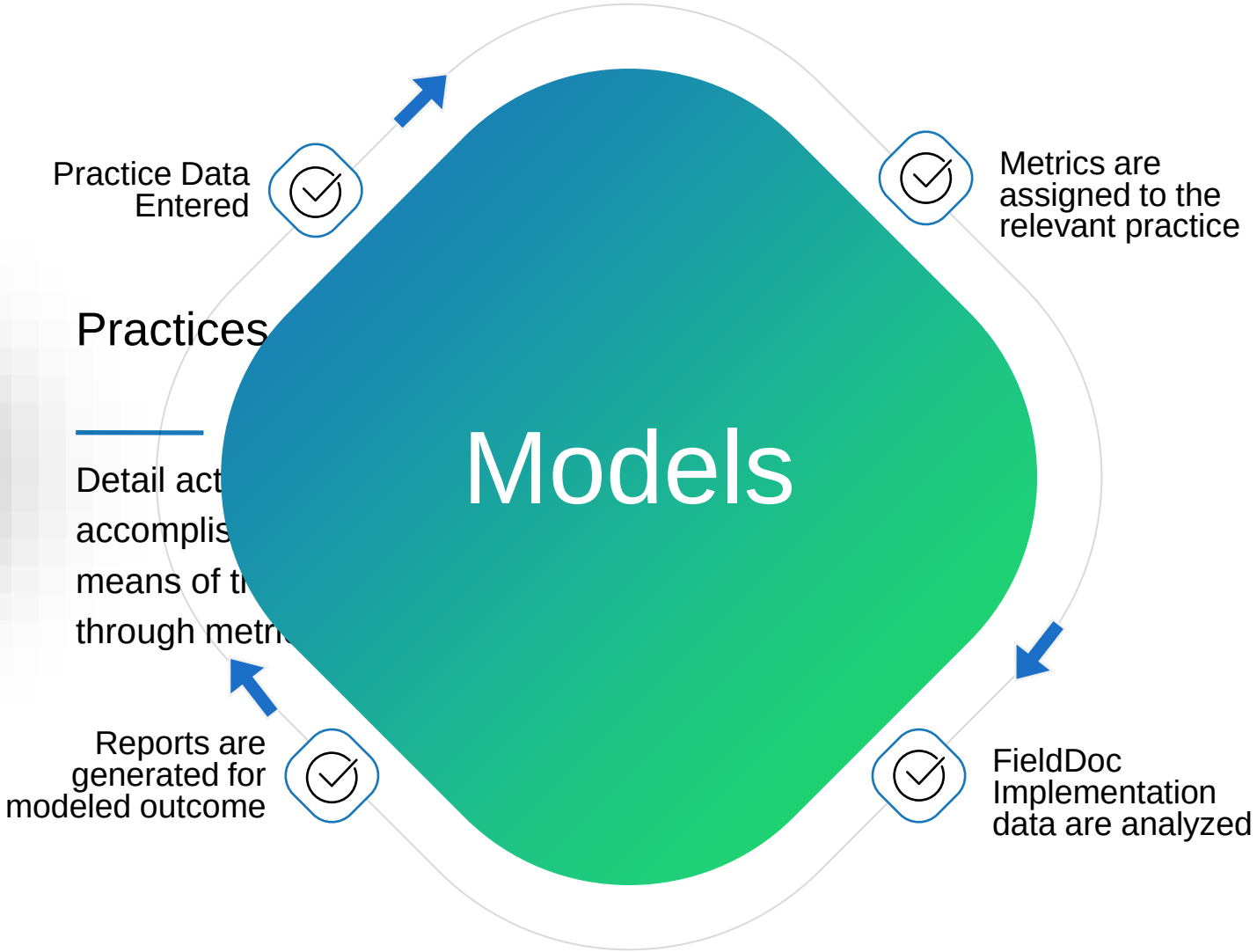
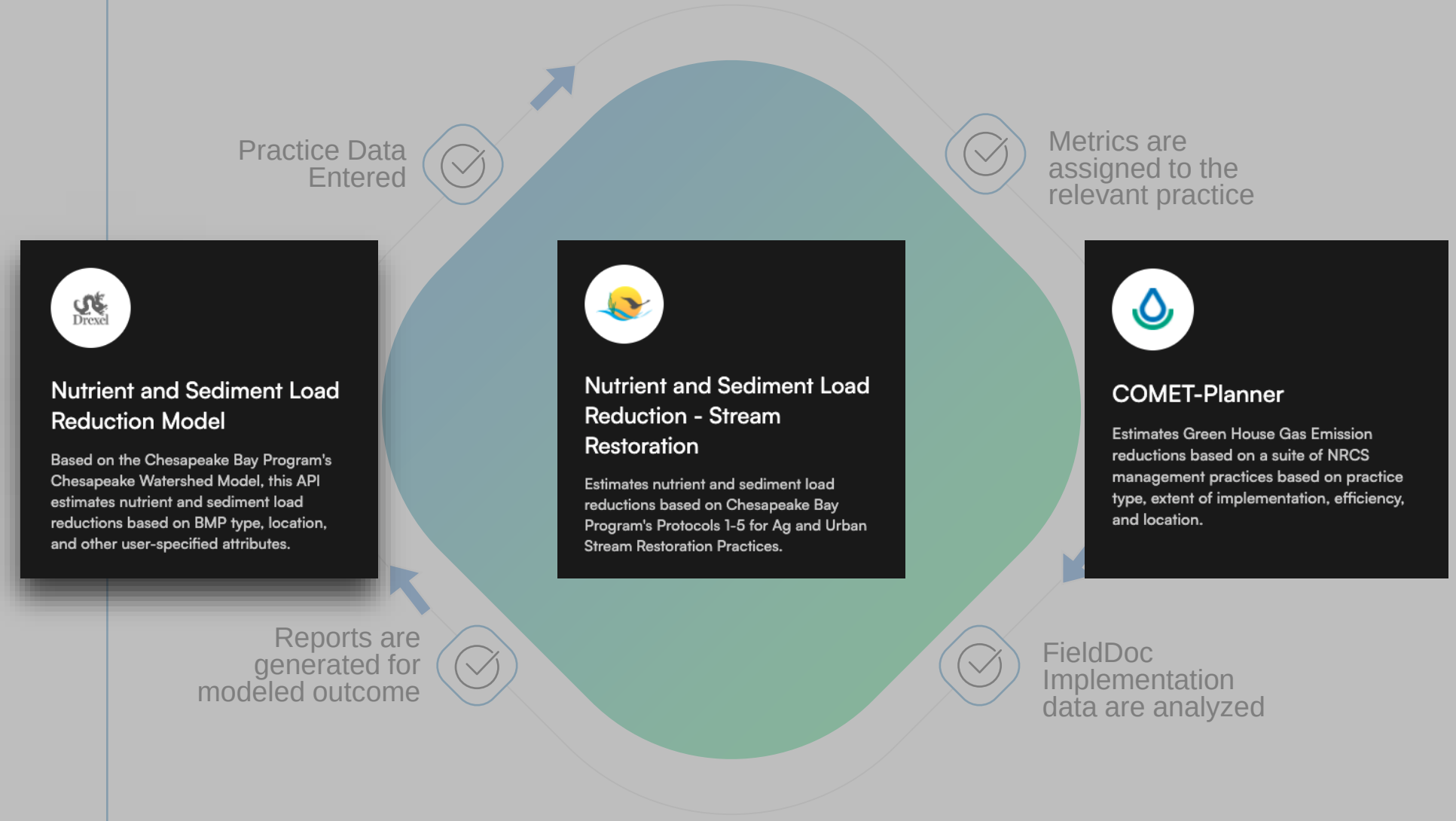
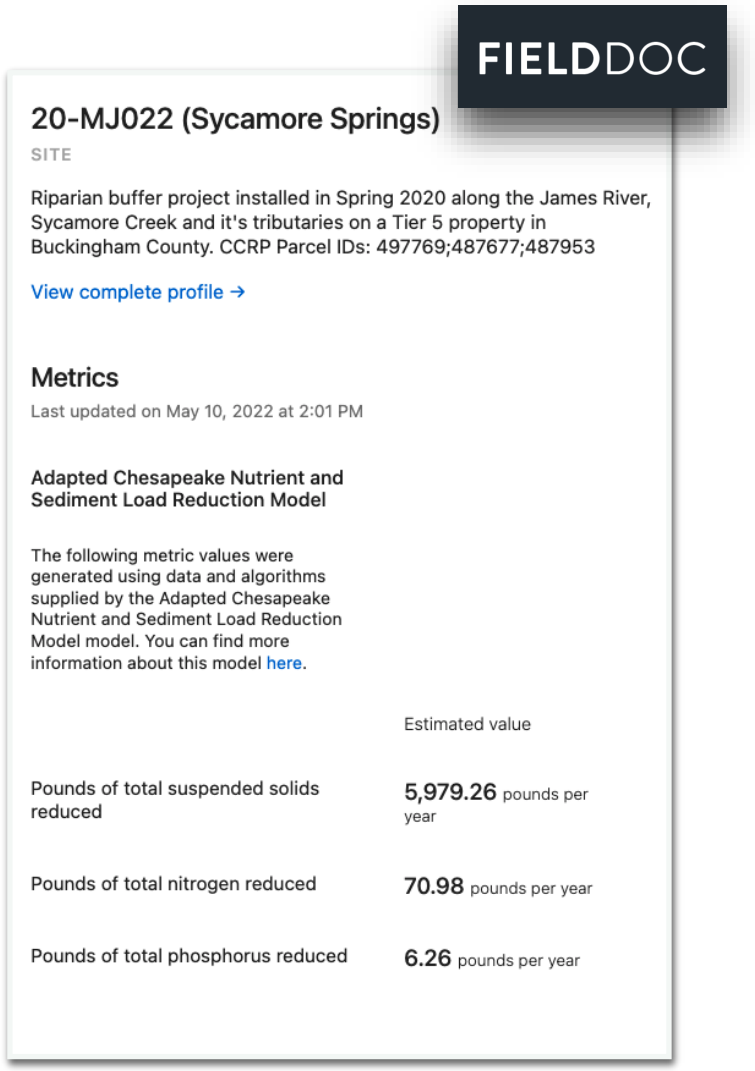
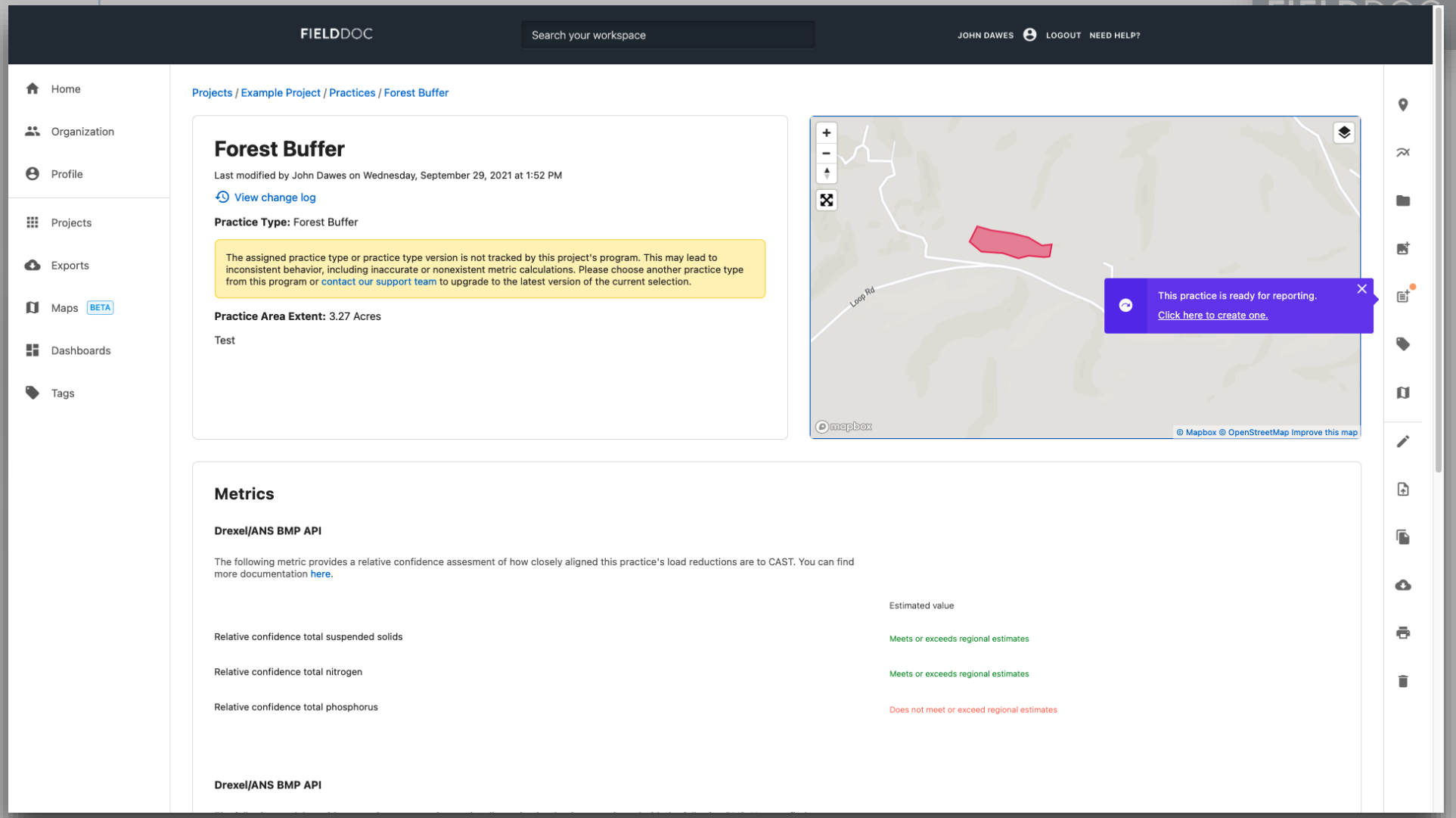



Practice Data Entered
Metrics are assigned to the relevant practice
Nutrient and Sediment Load Reduction Model
Based on the Chesapeake Bay Program's Chesapeake Watershed Model, this API estimates nutrient and sediment load reductions based on BMP type, location, and other user-specified attributes.
Nutrient and Sediment Load Reduction - Stream Restoration
Estimates nutrient and sediment load reductions based on Chesapeake Bay Program's Protocols 1-5 for Ag and Urban Stream Restoration Practices.
COMET-Planner
Estimates Green House Gas Emission reductions based on a suite of NRCS management practices based on practice type, extent of implementation, efficiency, and location.
Reports are generated for modeled outcome
FieldDoc Implementation data are analyzed

Reports

Provide detailed information on implementation for a planned practice




FIELDDOC
Search your workspace
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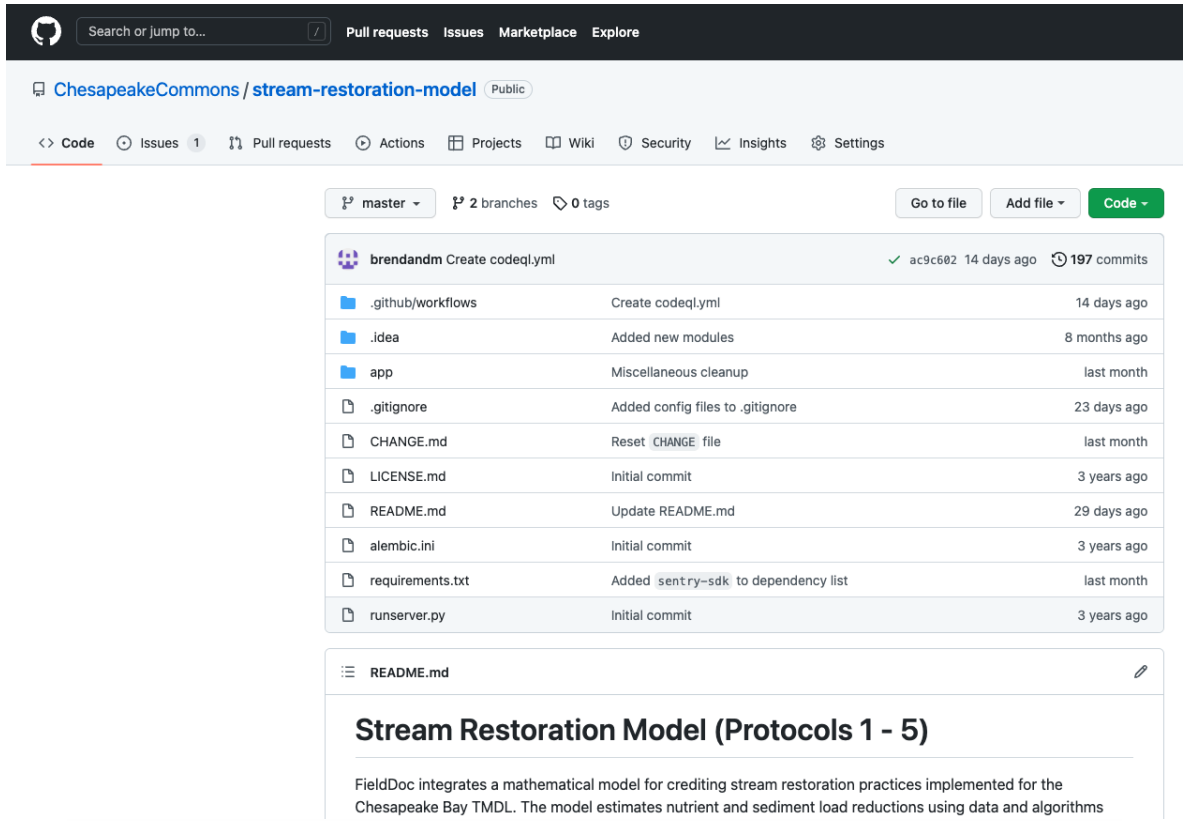
Maps BETA
Dashboards
Tags
Projects / Example Project / Practices / Forest Buffer
Forest Buffer
Last modified by John Dawes on Wednesday, September 29, 2021 at 1:52 PM
View change log
Practice Type: Forest Buffer
The assigned practice type or practice type version is not tracked by this project's program. This may lead to inconsistent behavior, including inaccurate or nonexistent metric calculations. Please choose another practice type from this program or contact our support team to upgrade to the latest version of the current selection.
Practice Area Extent: 3.27 Acres
Test
Loop Rd
This practice is ready for reporting.
Click here to create one.
mapbox
© Mapbox © OpenStreetMap Improve this map
Metrics
Drexel/ANS BMP API
The following metric provides a relative confidence assesment of how closely aligned this practice's load reductions are to CAST. You can find more documentation here.
Estimated value
Relative confidence total suspended solids
Meets or exceeds regional estimates
Relative confidence total nitrogen
Meets or exceeds regional estimates
Relative confidence total phosphorus
Does not meet or exceed regional estimates
Drexel/ANS BMP API

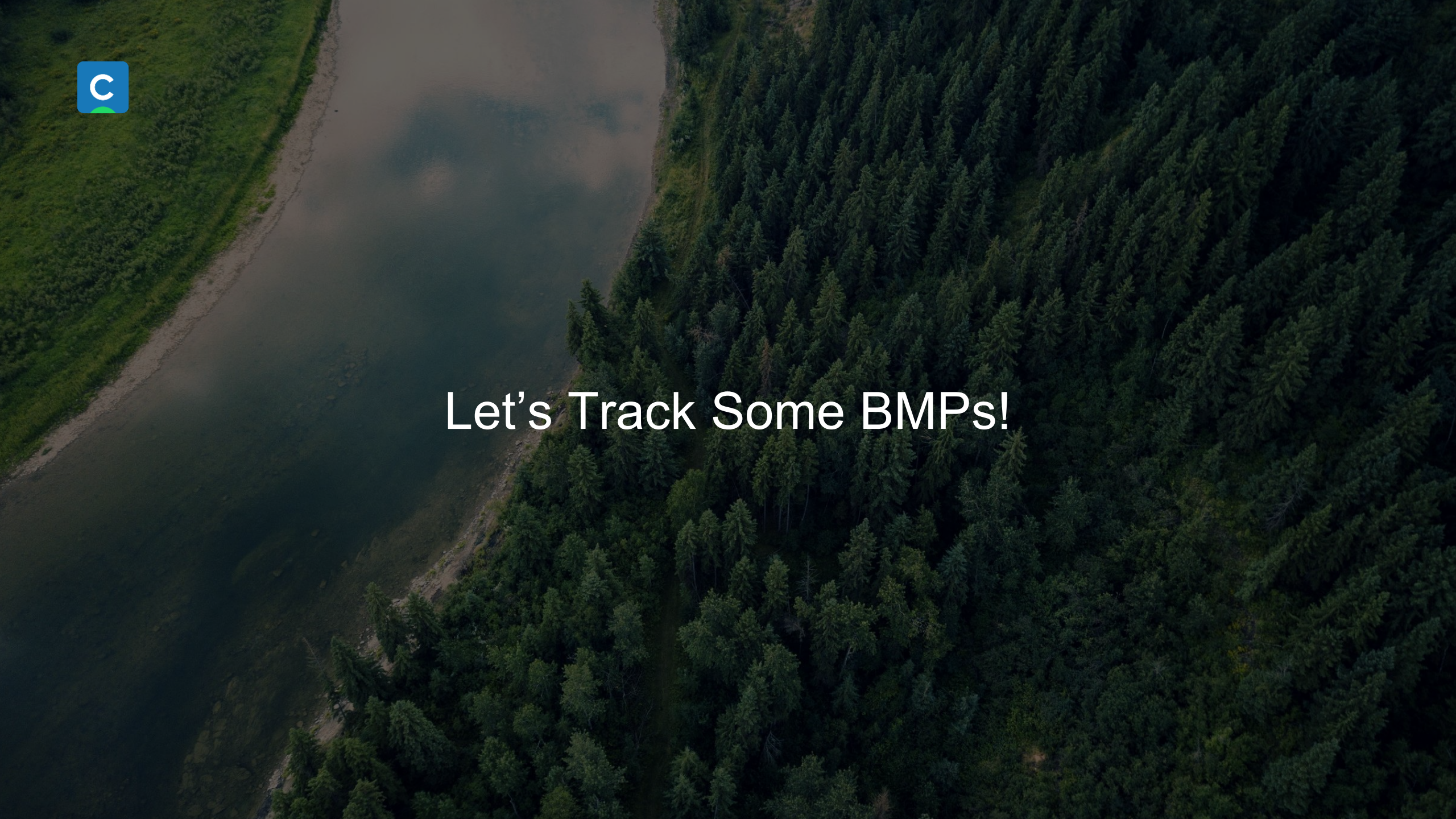


Stream Restoration Model

Documentation and stand-alone service modeling nutrient and sediment load reductions based on CBP Protocols 1-5

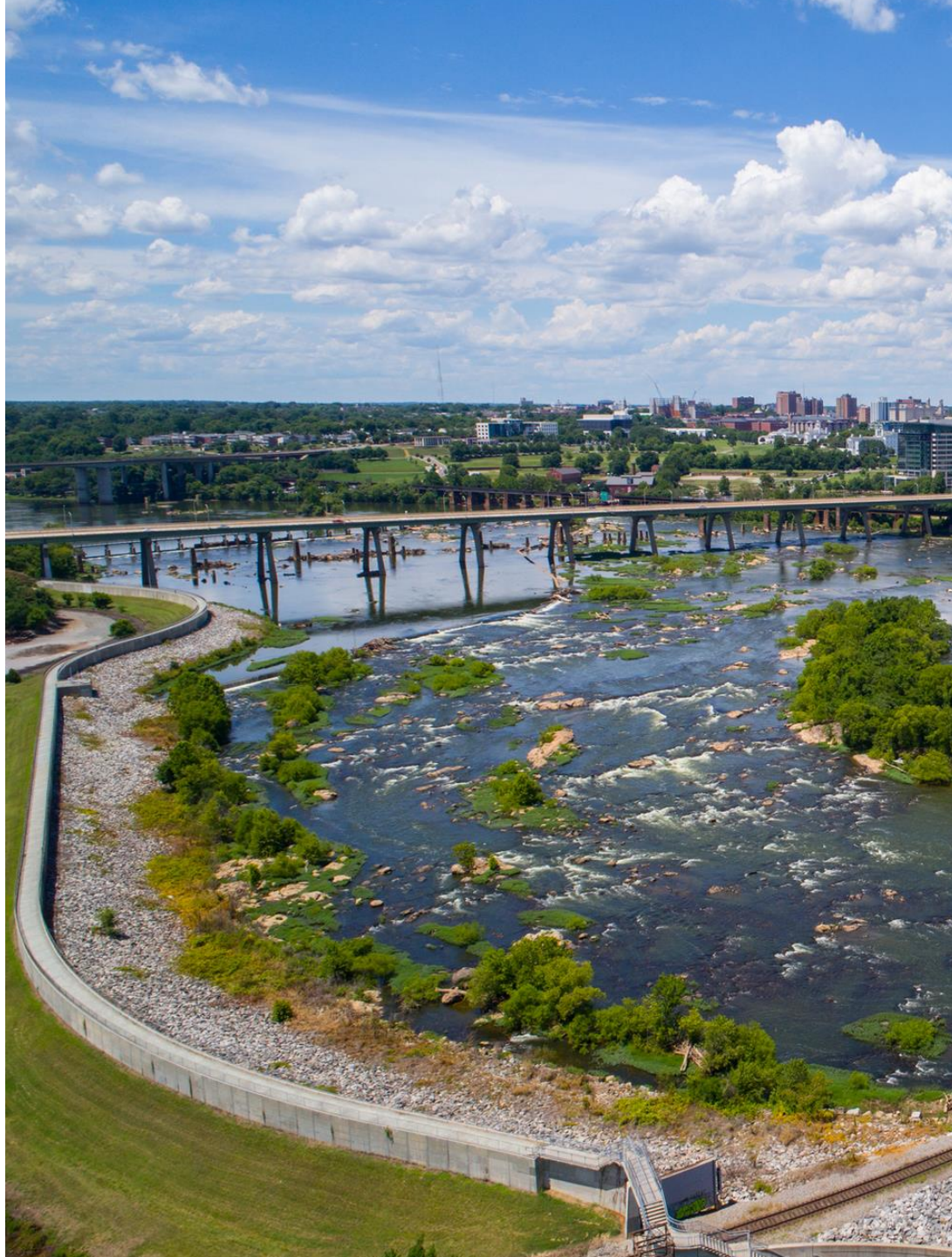
FieldDoc Application Programming Interface - Models and Project Data

- Structured JSON data on BMP Implementation and status
- Conducive to building third party applications for visualizing restoration and land protection efforts
- Models can be integrated into the FieldDoc platform or as a stand-alone service used internal analytical purposes.
- GOAL: Build a standard index of modeling services and documentation that ensure decision support is handled through a unified set of services and assumptions.


Let’s Track Some BMPs!

James River Water Quality Improvement Program

- $15.595 million grant program designed to accelerate and advance significant water quality improvements throughout the James River watershed.
- Needed support establishing a prioritization regime that balanced investment portfolio deliverables along with current and prospective grantee restoration programing
- Wanted to quantify and measure the benefits of their investments in water quality improvements in the James.

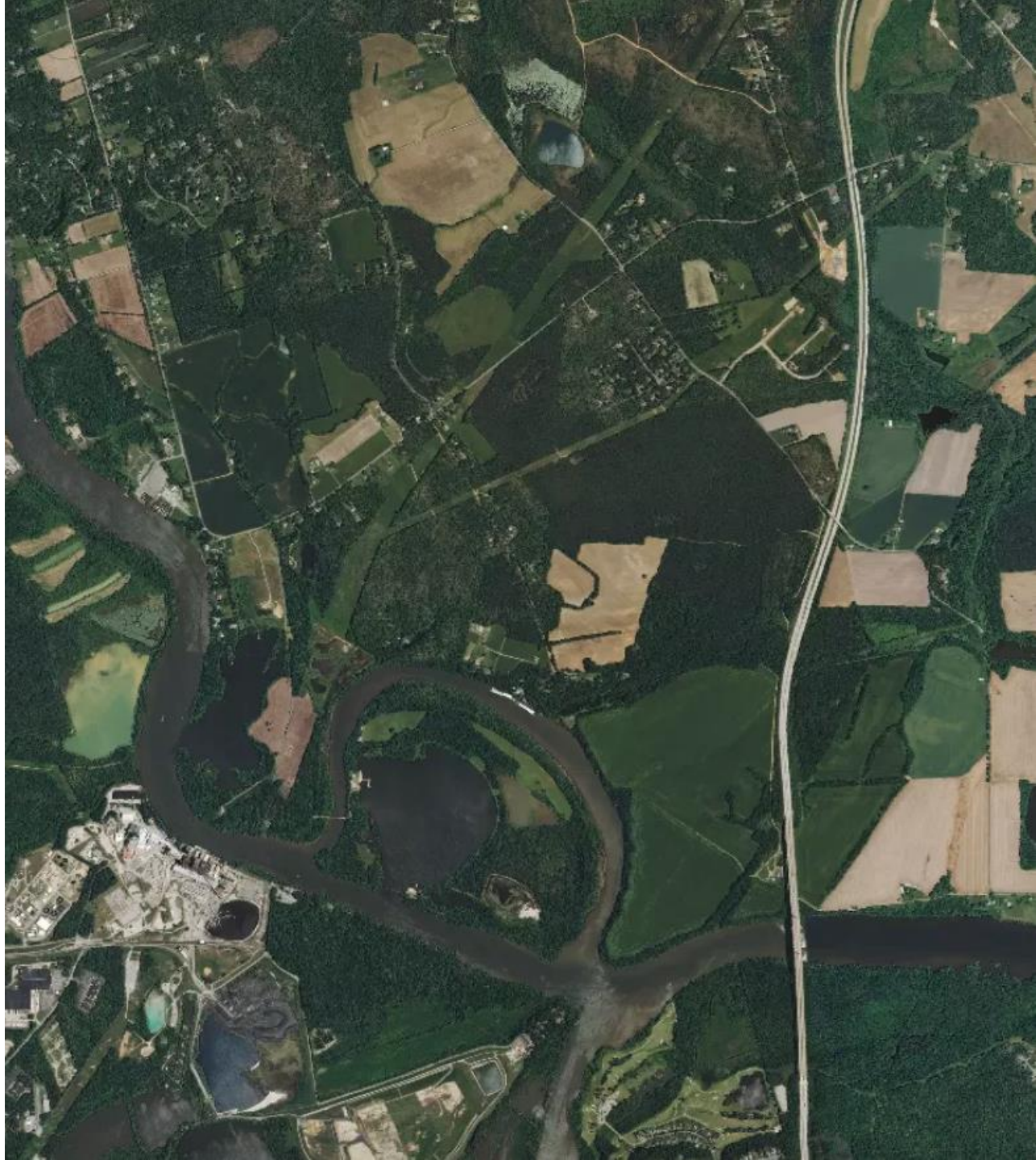


Prioritization in Use

- Identification of priority buffers opportunities
  - Buffer opportunity area (100ft)
- Parcel prioritization
  - Tier 1 (Highest Priority)
  - Tier 2
  - Tier 3
  - Tier 4
  - Tier 5 (Lowest Priority)

Data provided by Chesapeake Conservancy

EXPLORE. CONSERVE. INNOVATE.



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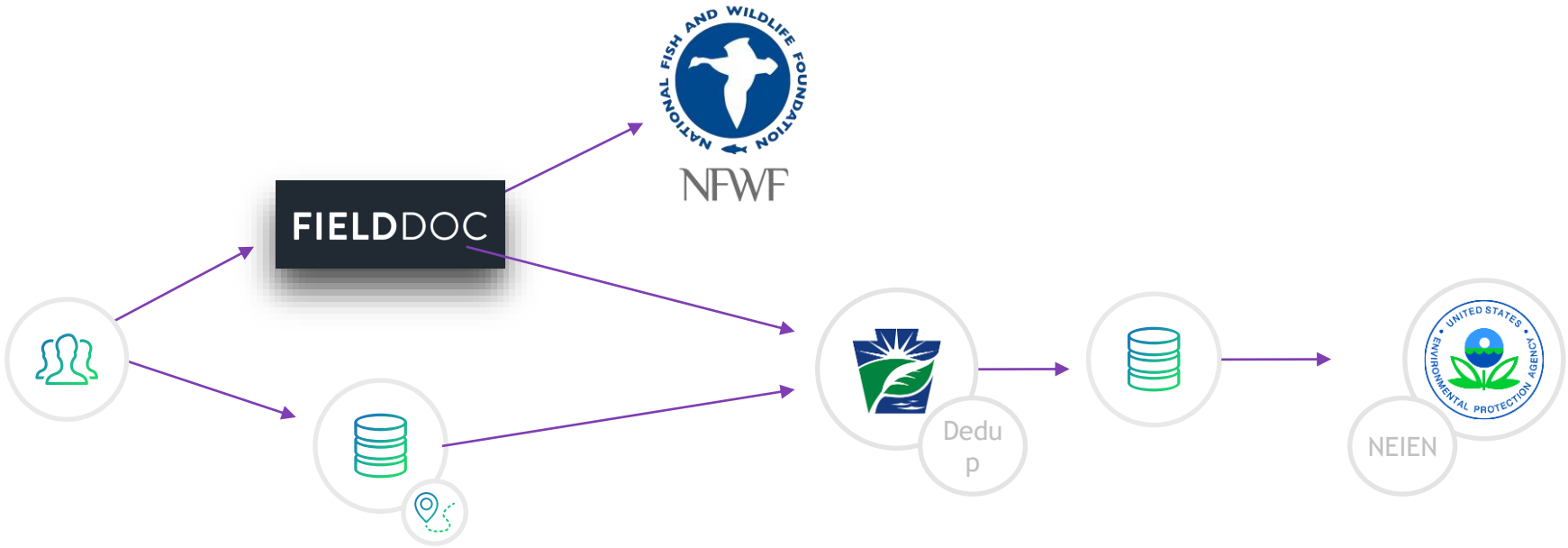
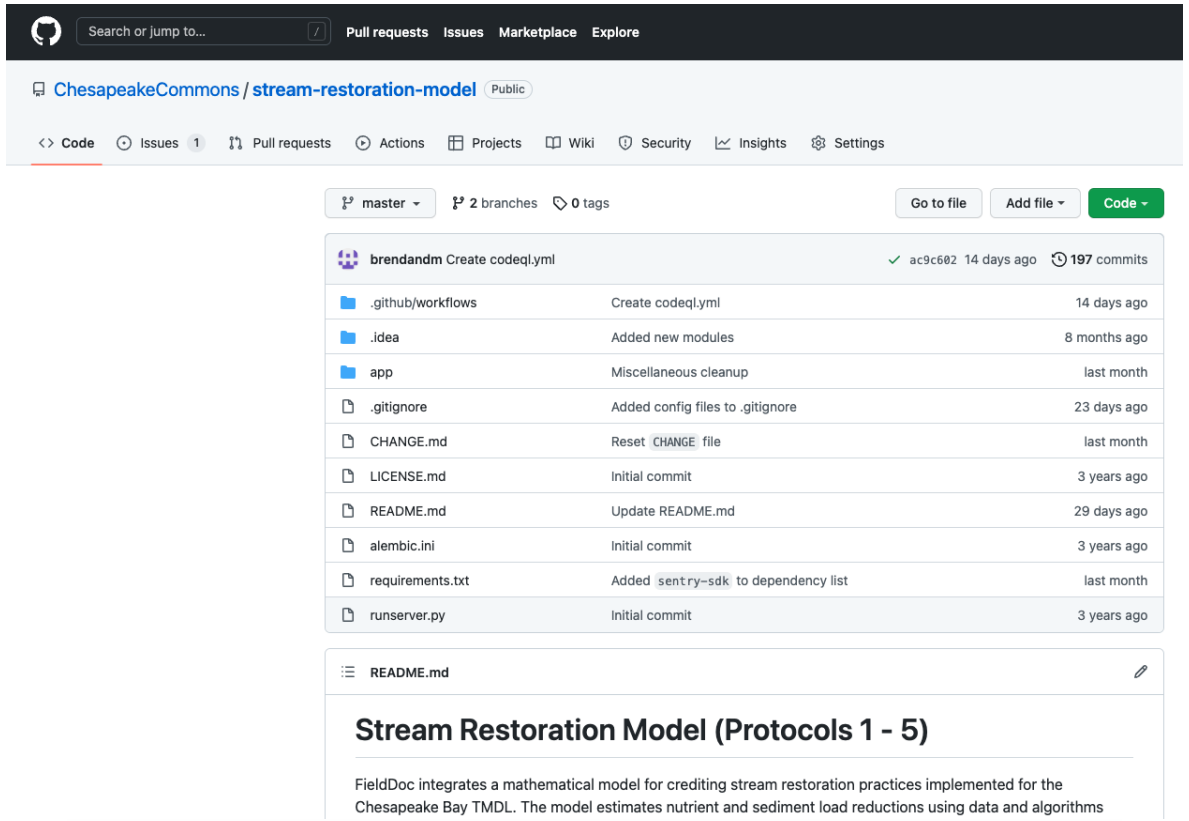
Let’s Looks at the JRWQIP

PADEP Live Connection of BMPs via API

- Uses FieldDoc to track BMPs falling outside of established state reporting programs
- Each county WIP Coordinator maintains a program within FieldDoc and PADEP staff oversees all WIP programs
- Data entered into FieldDoc are pulled via the JSON API into the data warehouse
- PADEP Contractor, GeoDecisions, flags BMPs that are possible duplicates for review and final commitment to NEIEN

PADEP Live Connection of BMPs via API





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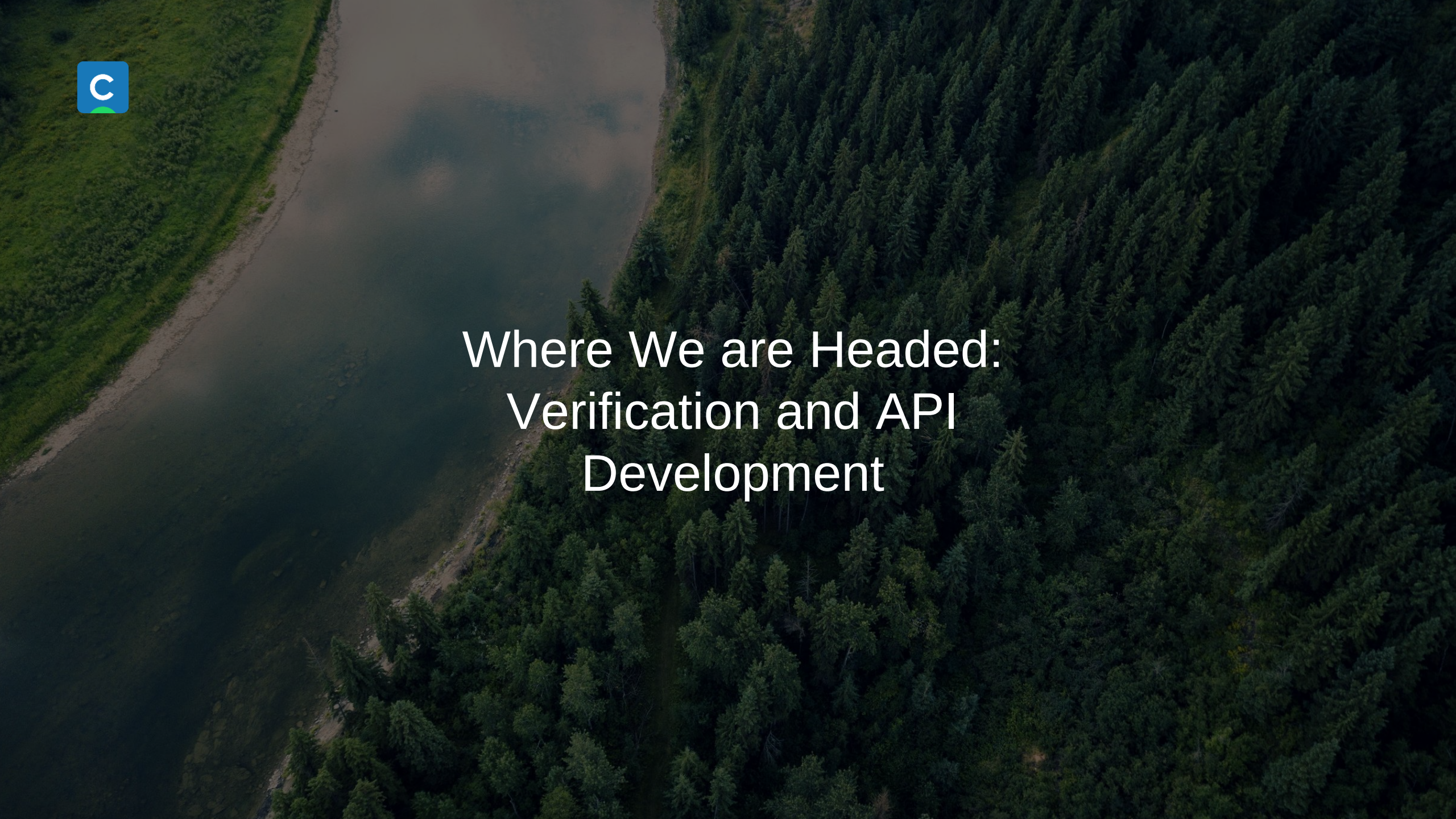
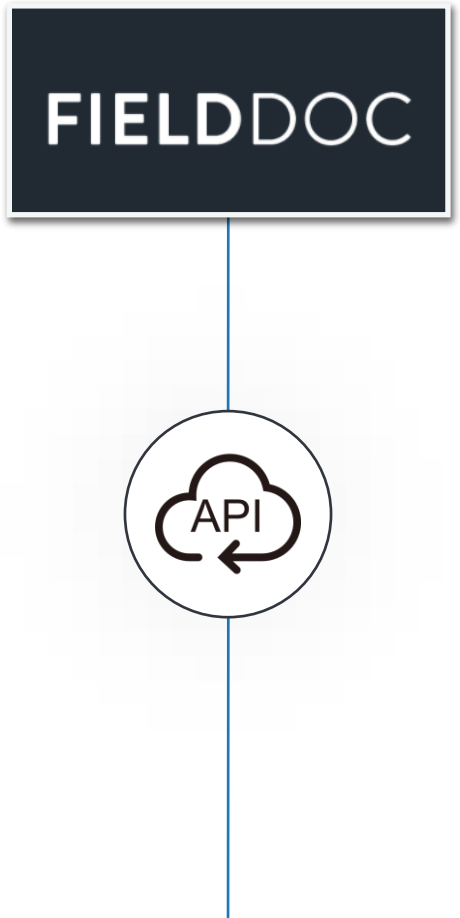


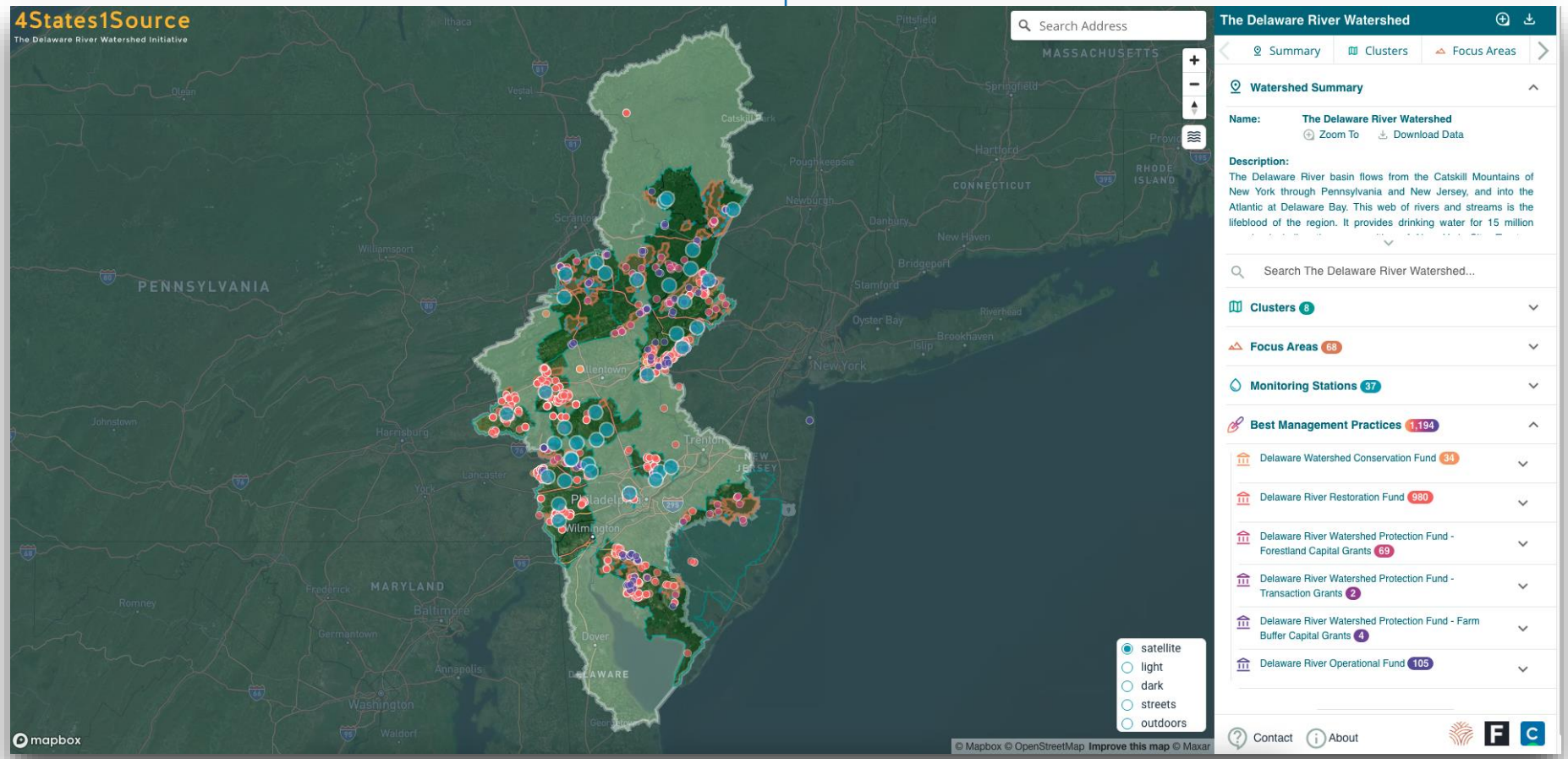
Where We are Headed: Verification and API Development

API Development and Documentation

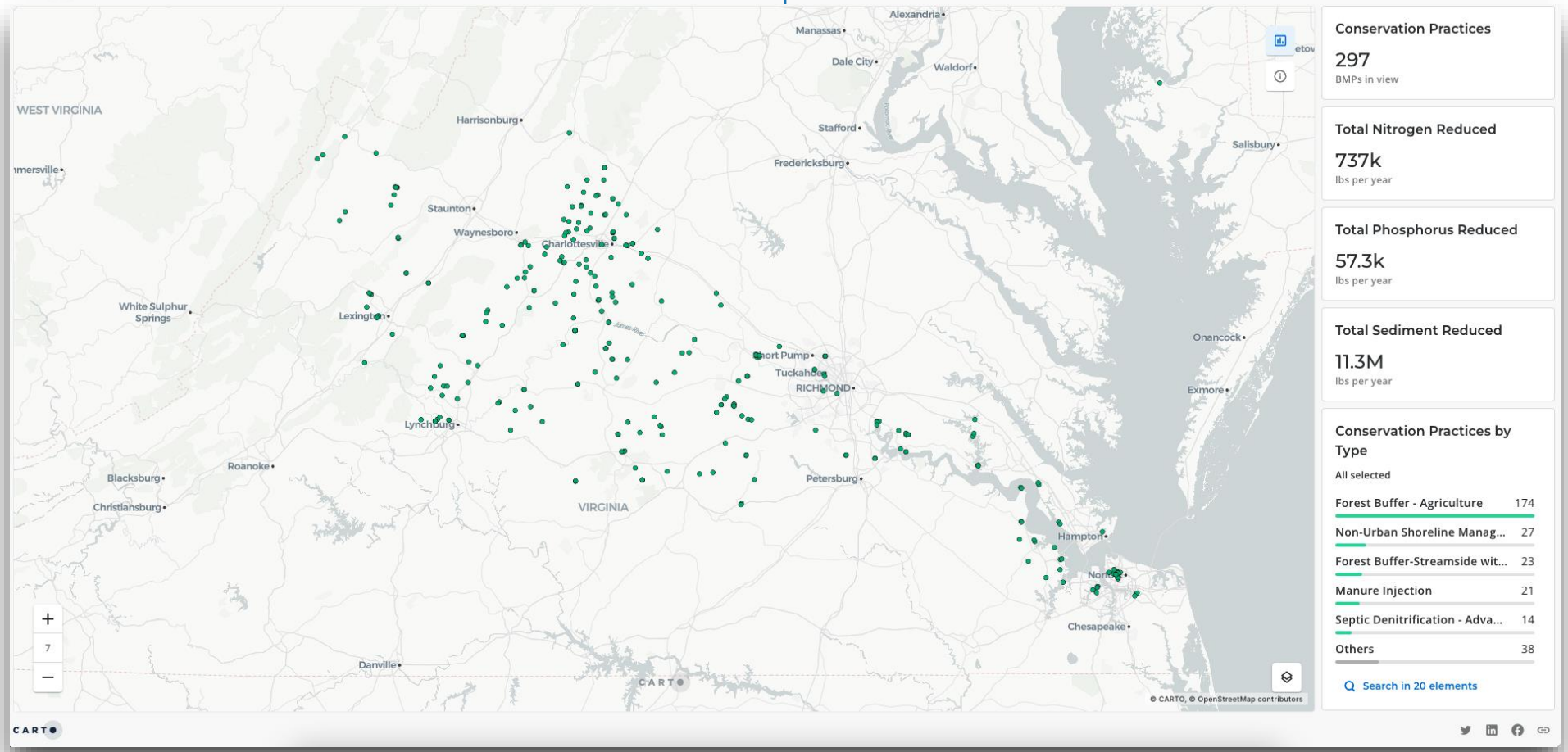
API Development and Documentation



DRWI Data Portal (Custom App.)



VEE JRWQIP Map (Carto Builder)



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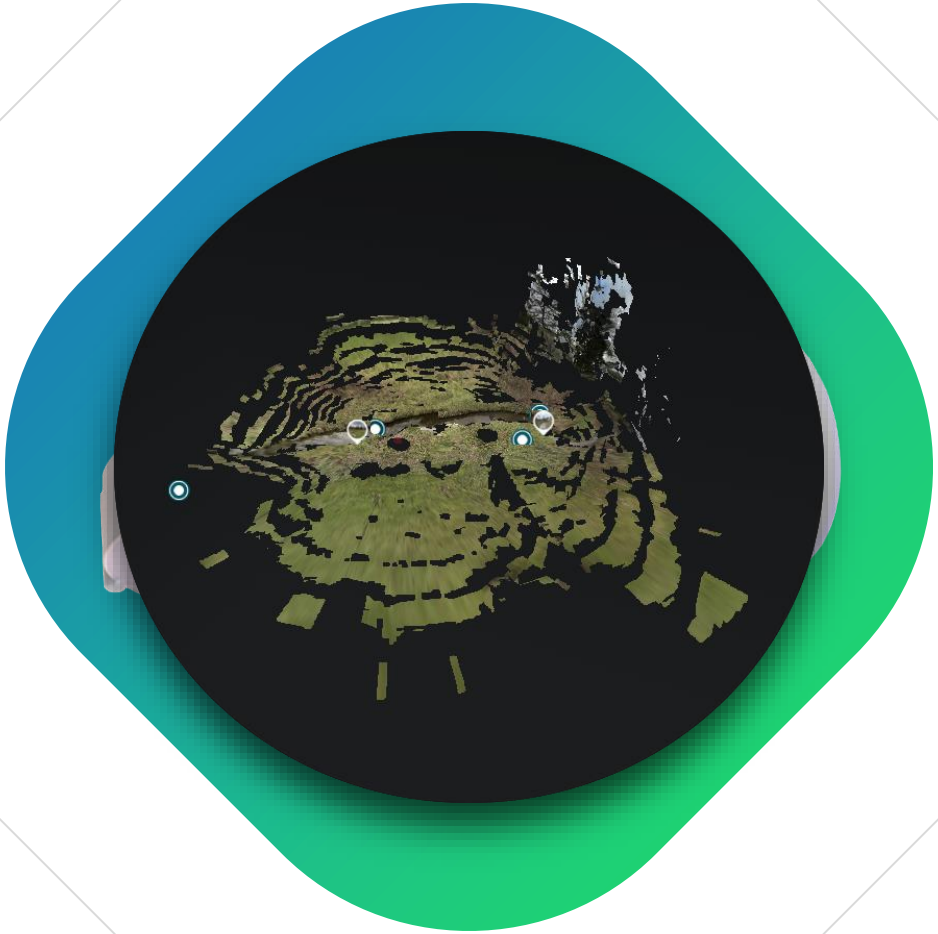
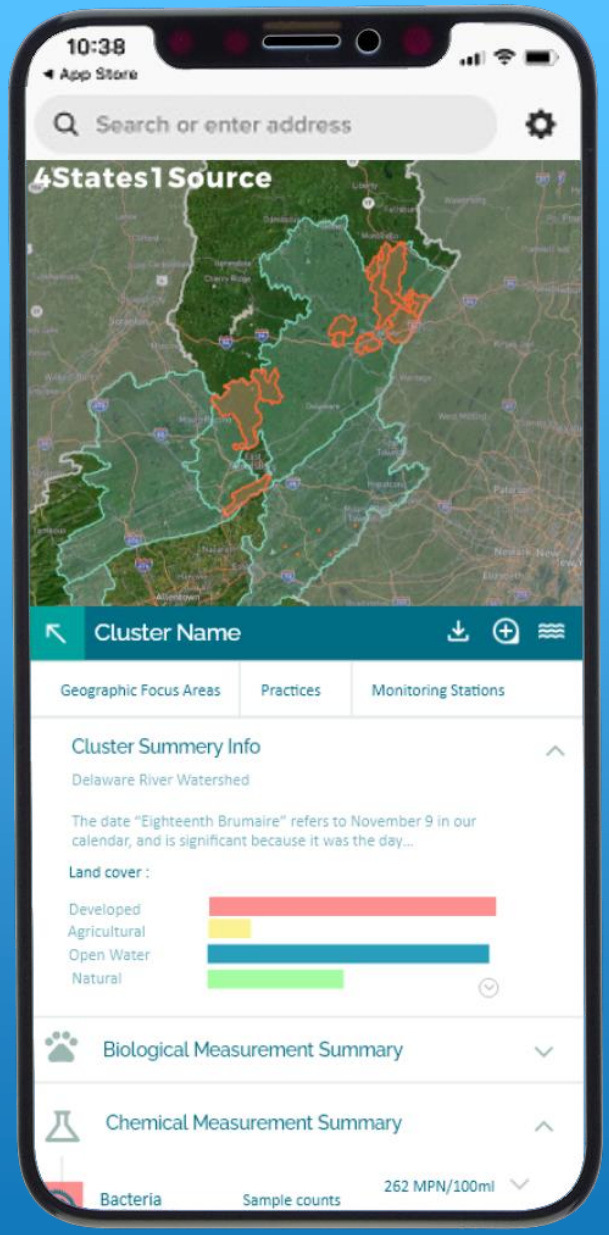
Innovative Verification

- Infield LiDAR Based Scanning
- Proves work has occurred
- Supports in-field practice annotation



- Supports active measurement in a 3D Model
- 360 views and anchor points for restoration site tour
- Compatible with modern VR Headsets



DRWI Data Explorer

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BMP & WQM Data

View monitoring results along side best management practice and land protection projects

Integrated Data

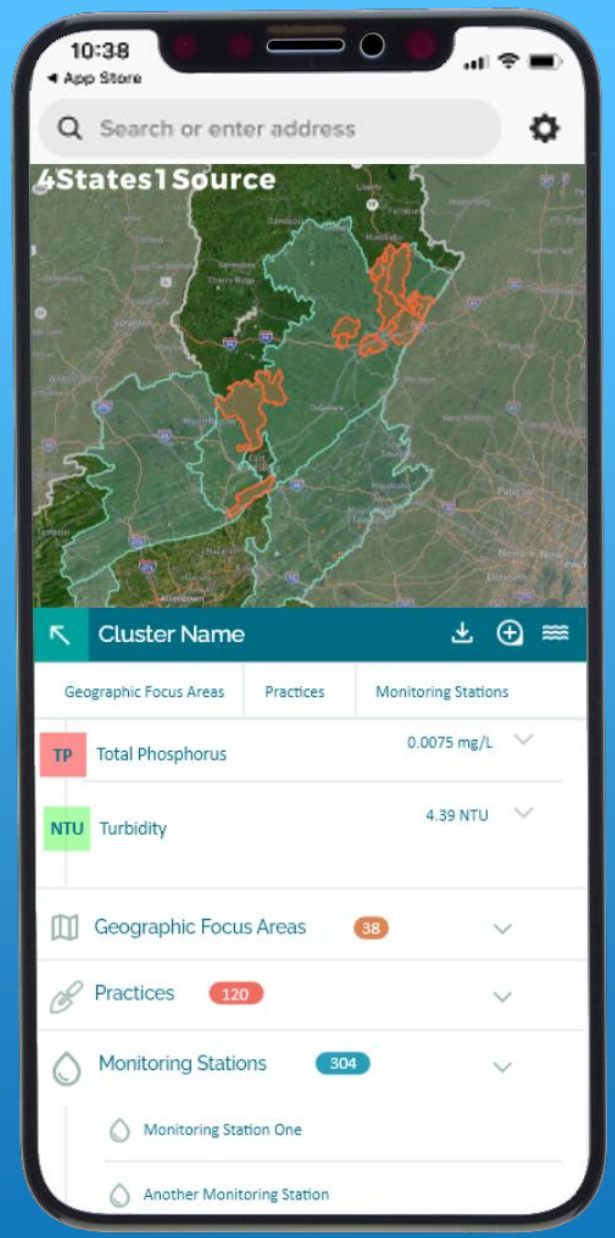
Pulls data from FieldDoc, Drexel Academy of Natural Sciences as well as the USGS

Built on Vue.js

an open-source front end JavaScript framework for building user interfaces and single-page applications.

Restoration and Response

Helps users working as part of the DRWI to better understand how their projects equate to changes in WQ



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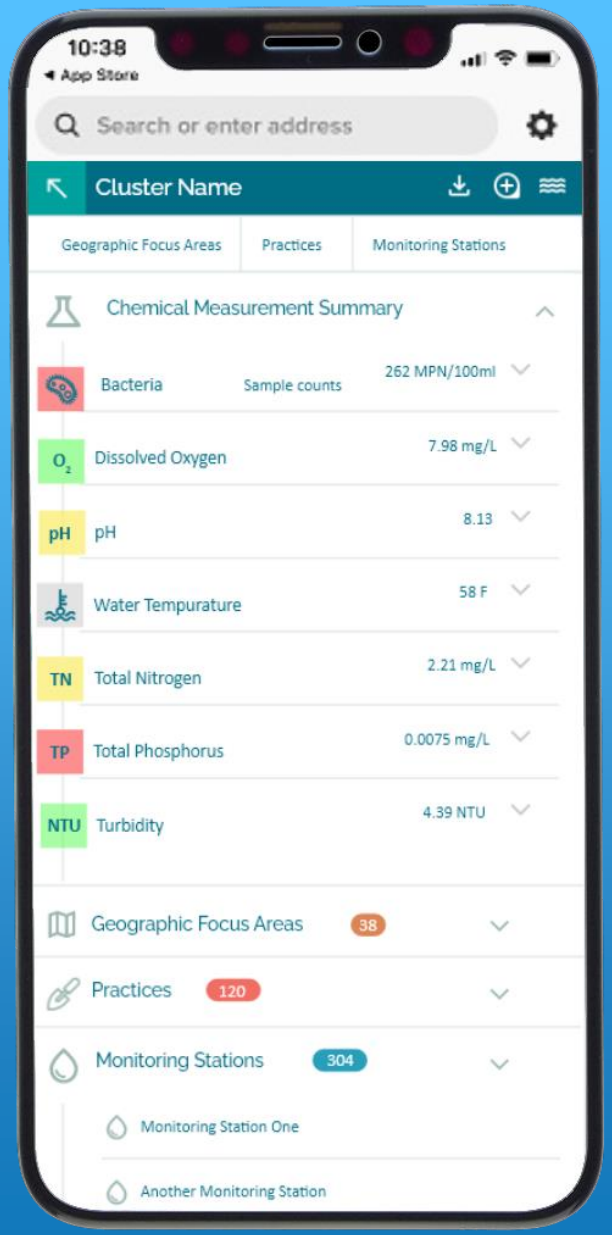

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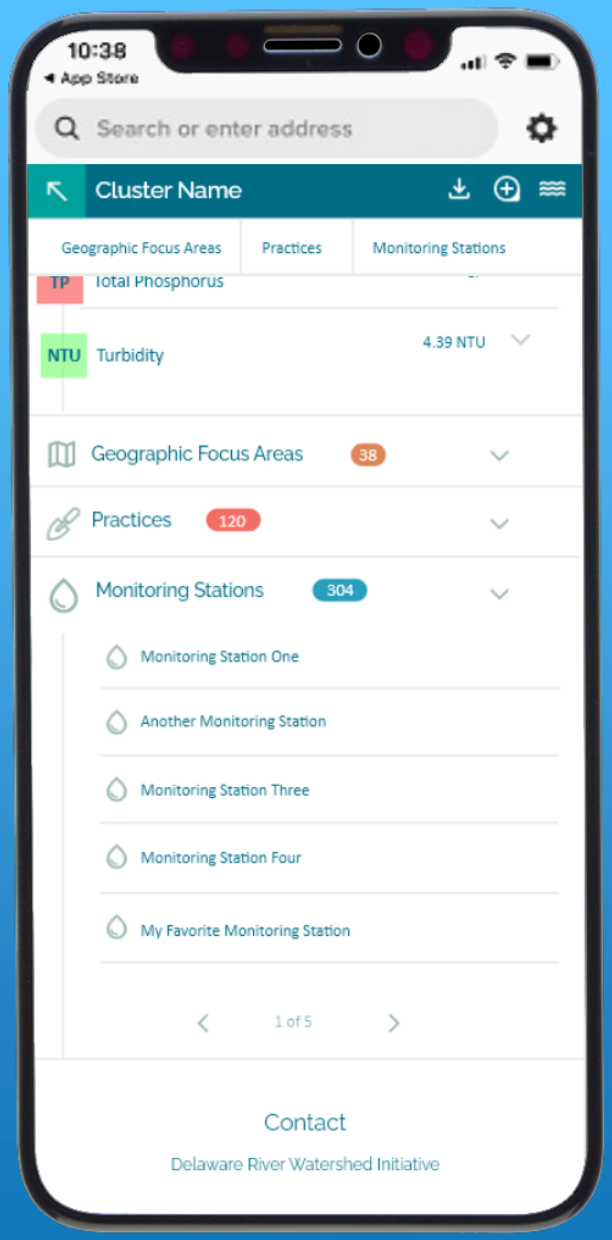

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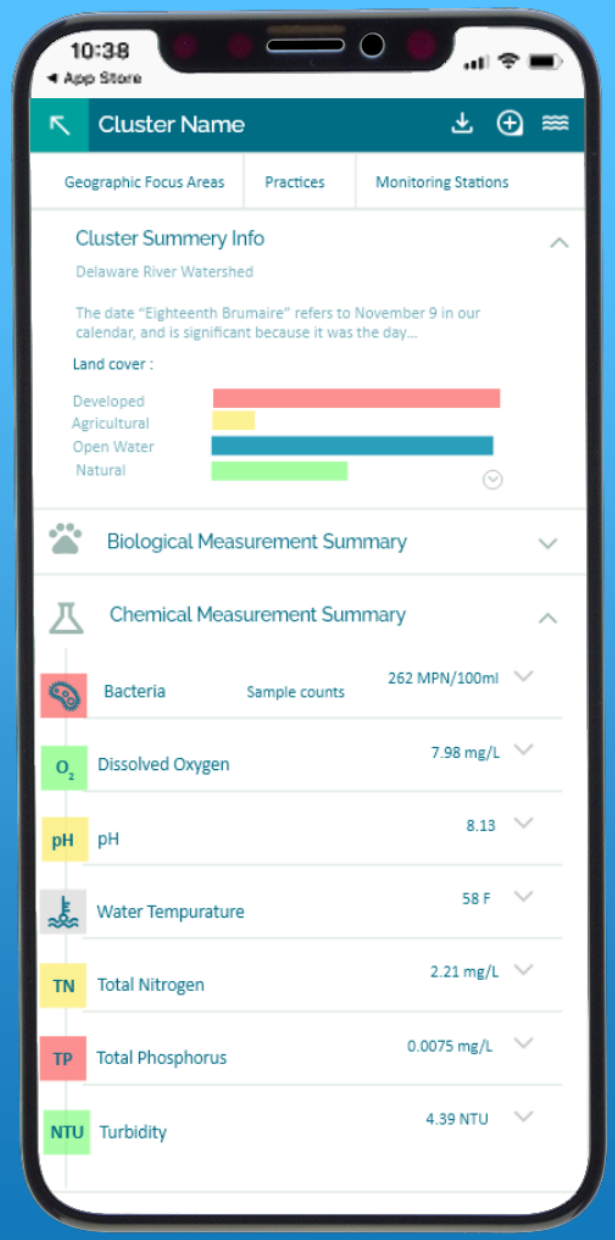

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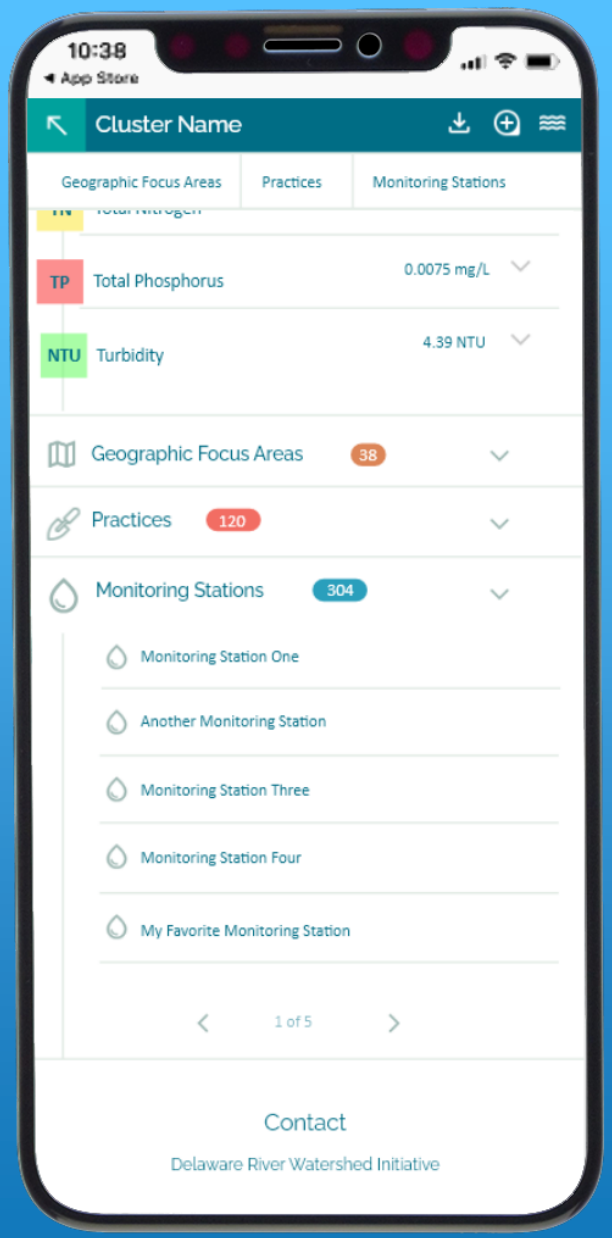

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Questions and Contact

John Dawes

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