Utilizing a Web-Based Geographic Information System for Project Collaboration, Great Lakes Legacy Act, Otter Creek Sediment Site

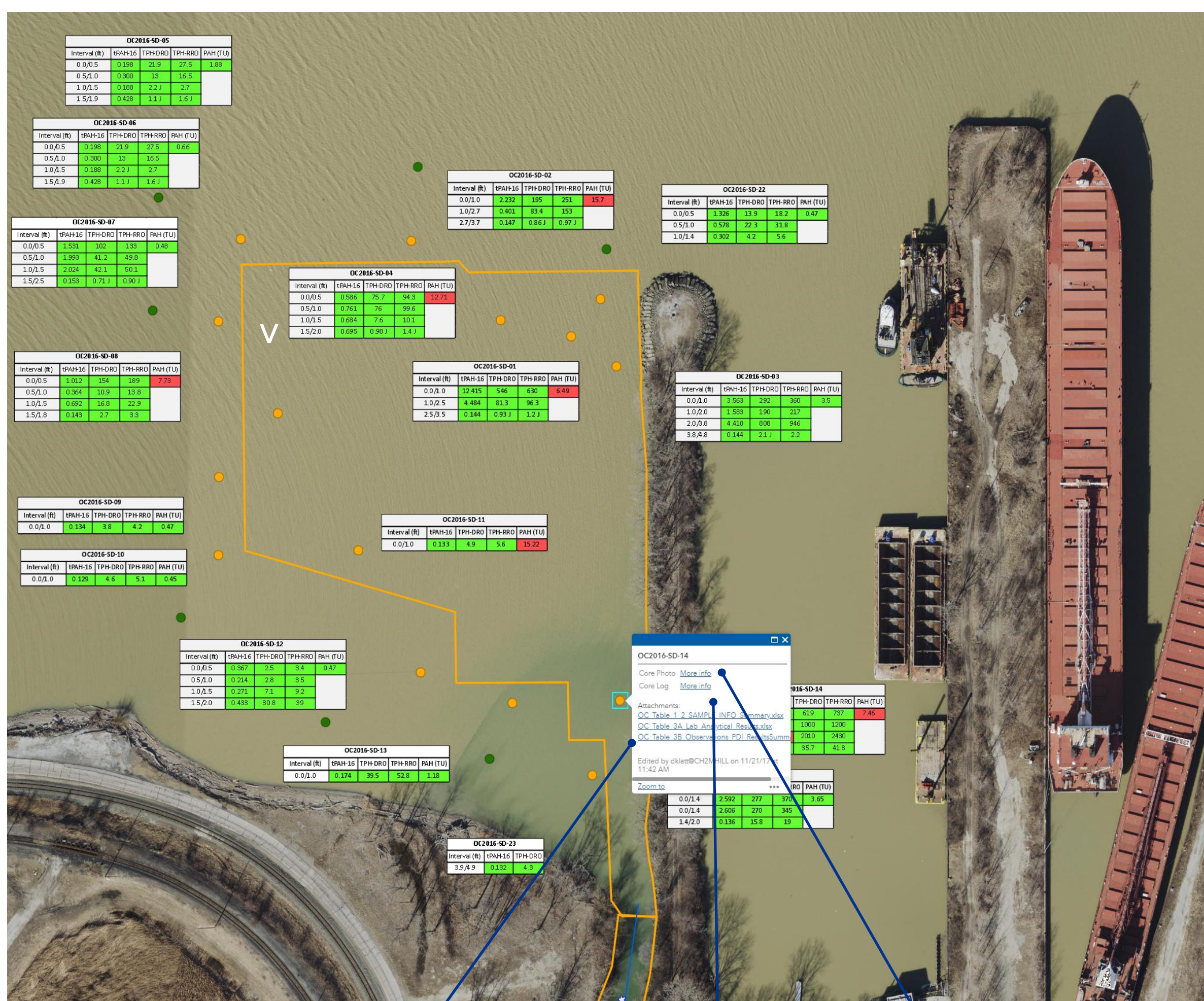**Authors**

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Developing Web-based GIS Technology

Until recently, GIS technology was largely applied to environmental projects by GIS specialists who manipulated the data behind the scenes, and provided static information outputs to end users like project managers, scientists, and stakeholders. **Now, web-based GIS tools are much more accessible to end users so they can directly interact with multi-media spatial data** using computers, tablets, or smartphones.
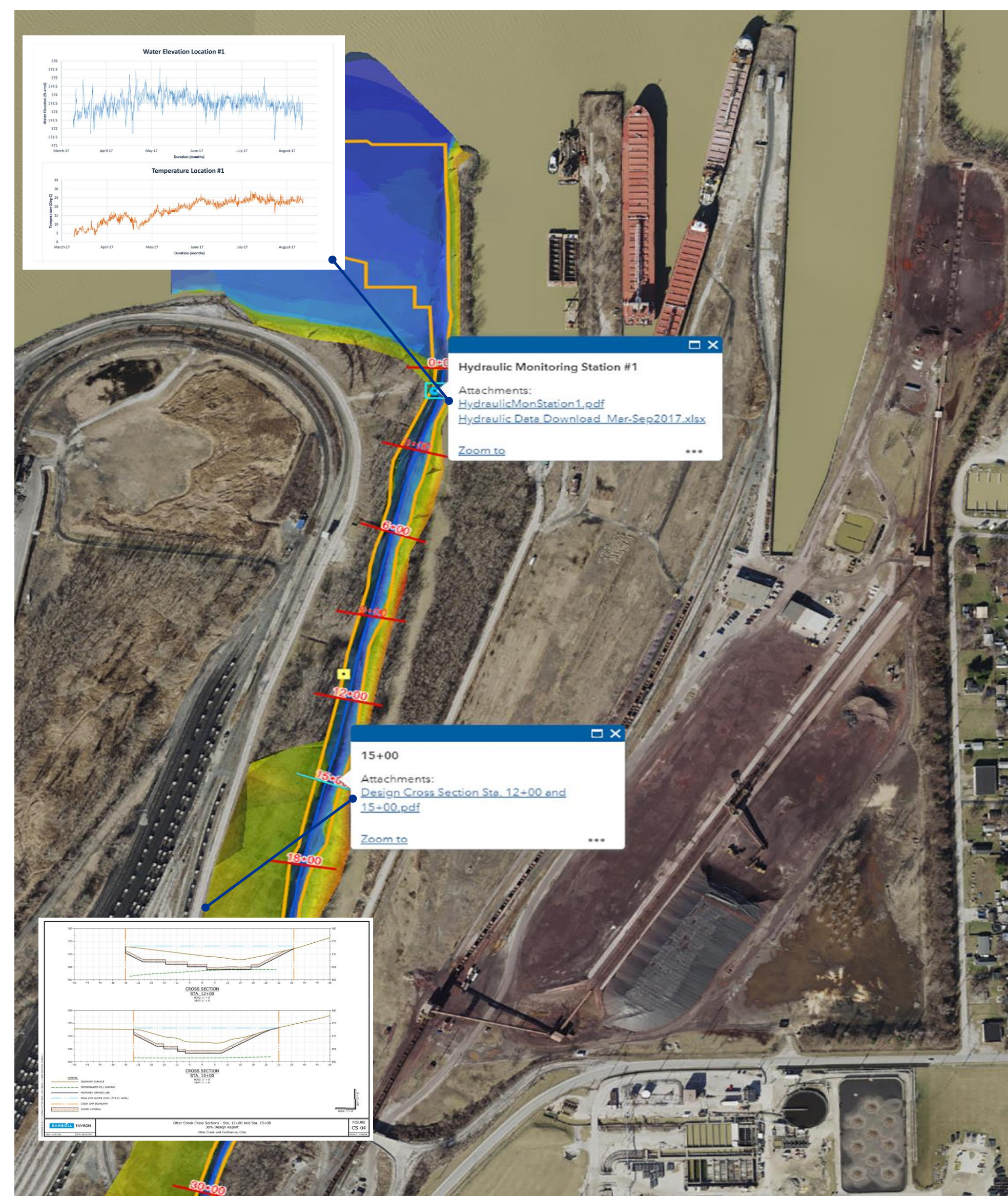

Core logs, photos, and laboratory data are easily accessible

Features include design cross sections, hydraulic monitoring data, topographic/clay surface contours, and high resolution drone imagery.

Approach

A web-based GIS tool was developed for the Otter Creek sediment project in Toledo, Ohio to provide interactive access to multi-media information, including lab data, hydraulic stream data, drone-collected aerial photography and videos, design plans, and other key site features (GIS layers shown at right). Project team members in different locations can access the tool through a password protected web address.
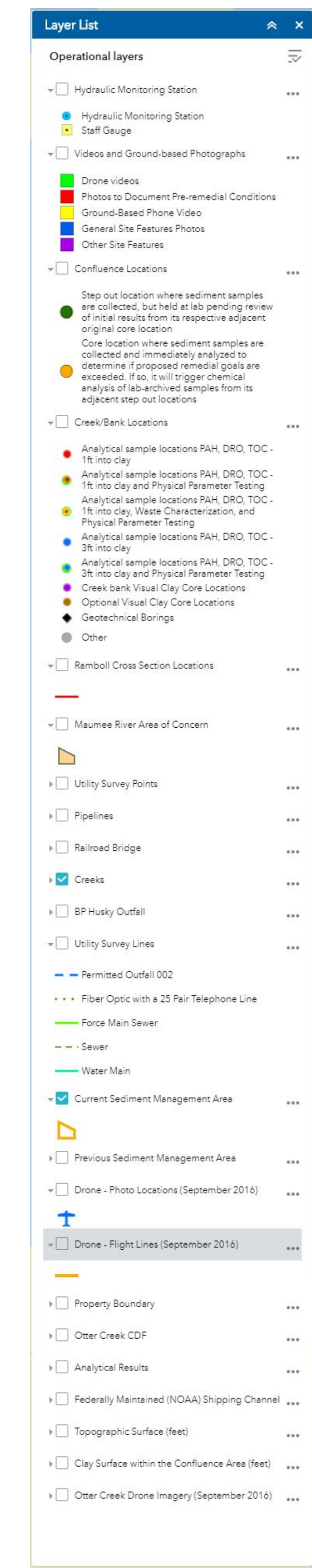
Results

- Web-based GIS tools applied to environmental projects can increase efficiency, information retrieval, and collaboration, especially for larger projects with multiple stakeholders and types of data and media.
- This GIS tool was used in a value engineering meeting with 15 participants to facilitate discussion and information retrieval.
- Planning and forethought are necessary to create an effective web-GIS tool for a project. A project team needs to understand end-user needs and the types of multi-media data to be included, as well as the technical GIS, data storage, and security options and limitations.
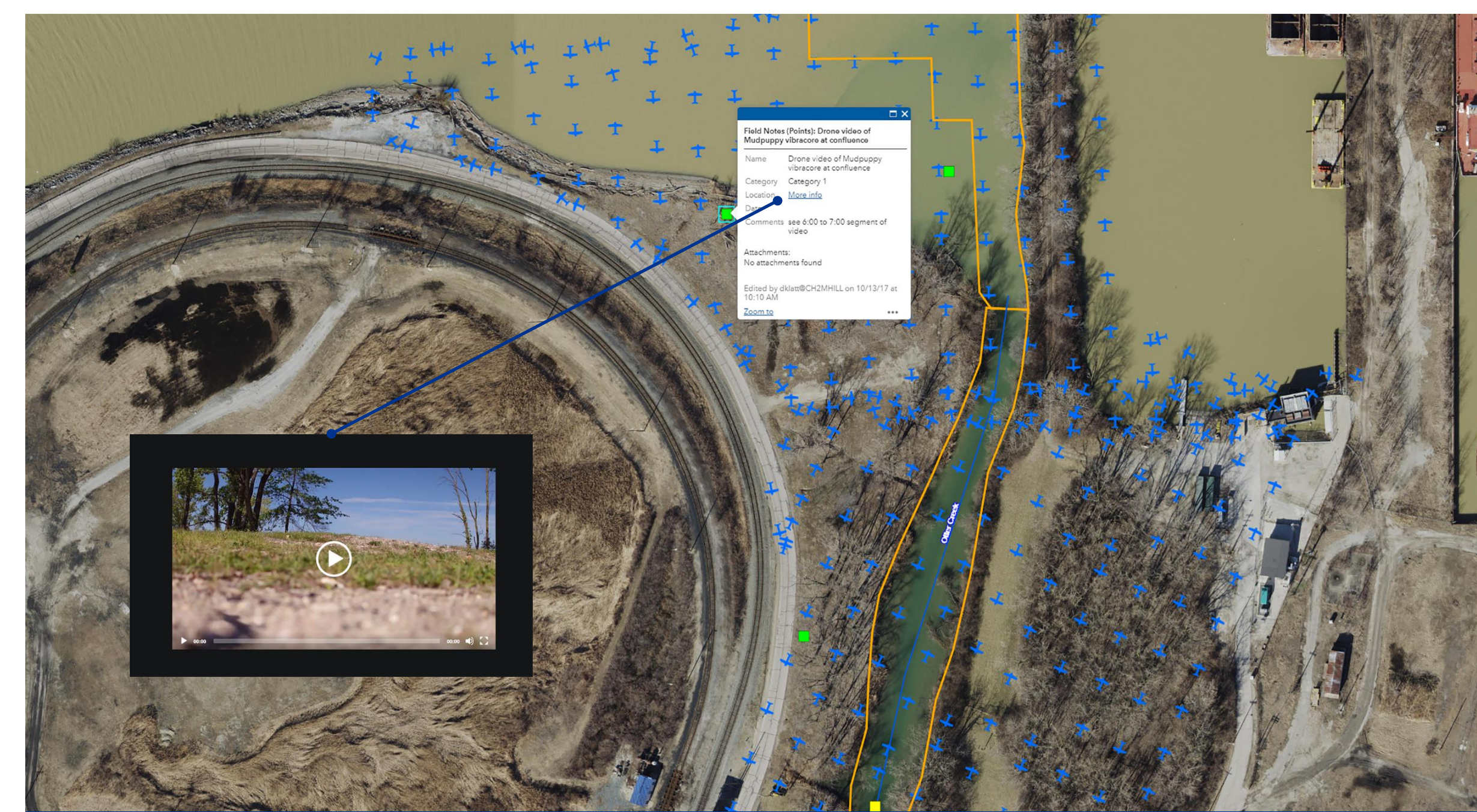
Hundreds of drone images (blue plane symbols above) were used to create a high resolution imagery layer (bottom left) that can be compared with other historical aerial images in the GIS with a "swipe" function. Drone videos of the site are also available.

Acknowledgements

Justin Hansen- Jacobs GIS Analyst, Milwaukee, Wisconsin