



Illinois State Beach Shoreline Restoration

Daniel Kucza PLS

Matt Holland

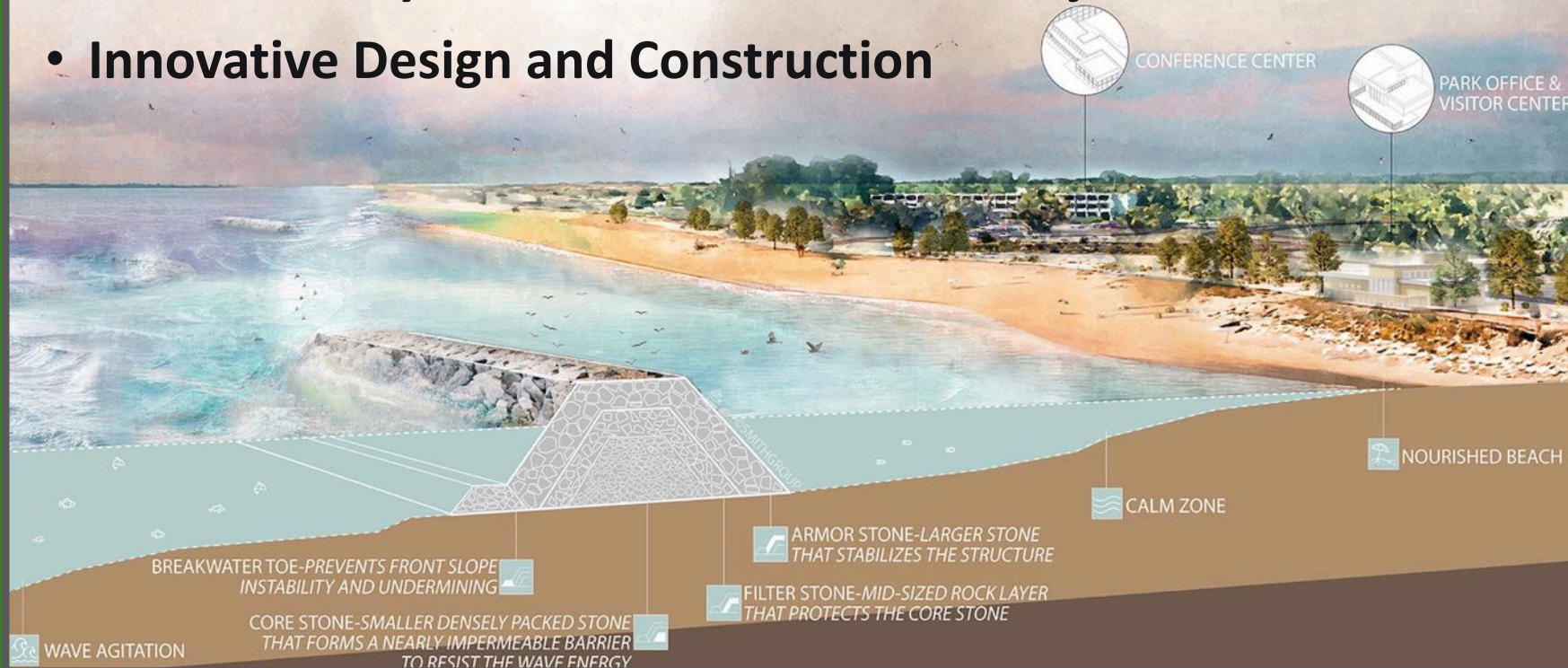
Takeaways

- Introduction to the Illinois State Beach shoreline restoration.
- The importance of the \$73M design-build project.
- How underwater geospatial technology transformed the construction process.



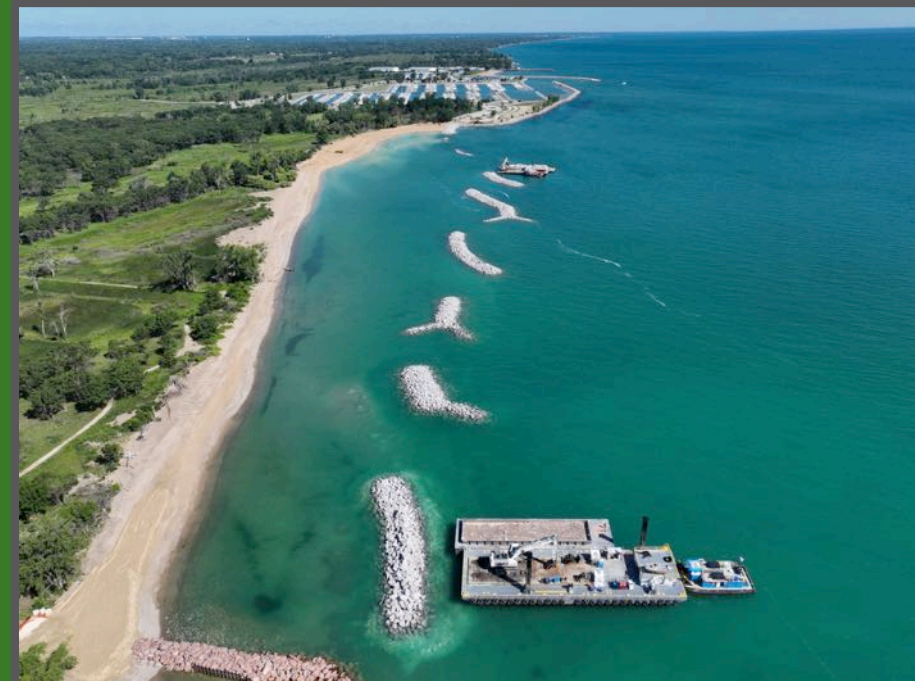
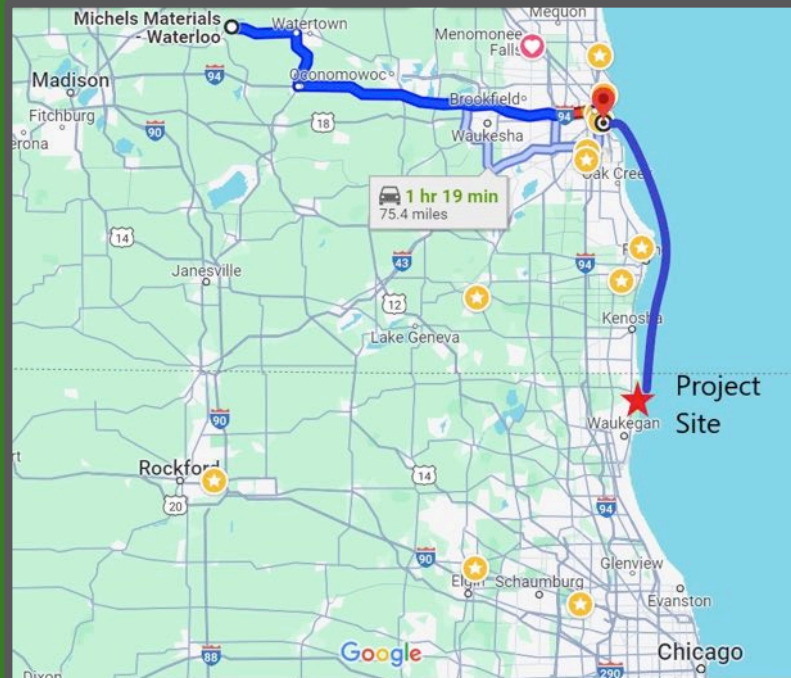
Illinois State Beach Restoration Project

- Revolutionary Shoreline Preservation Project
- Innovative Design and Construction



The Challenge

- Traditional measurements methods not adequate.
- Need for high-speed construction while maintaining survey accuracy.



Machine Grading from Design Models

- Machine grading accelerates the construction process.
- Unprecedented accuracy of machine grading.



The Speed-Reality Check Dilemma

- As construction speed increases, keeping up becomes a challenge.
- The vital role of interim monitoring.



Why Multibeam Sonar?

- Single Beam sonar did not provide enough data
 - From a Boat
 - From Remote Controlled Boat
- Multibeam sonar's ability to handle tough conditions.
- High resolution data helped create an accurate 'Digital Twin' for QC and payment .



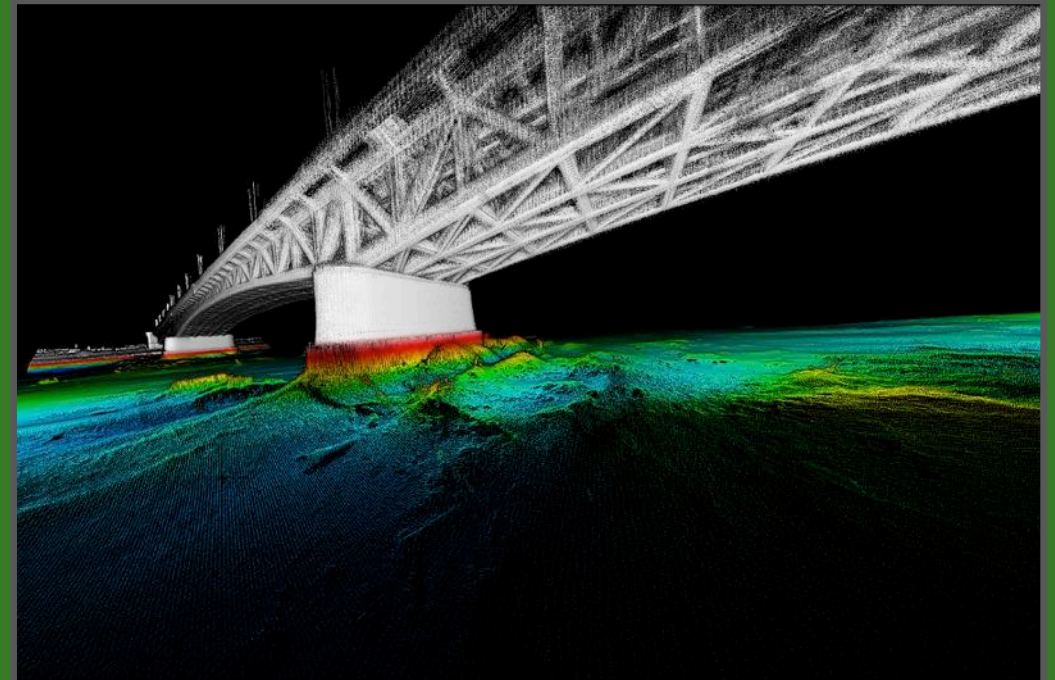
High Performance Sonars

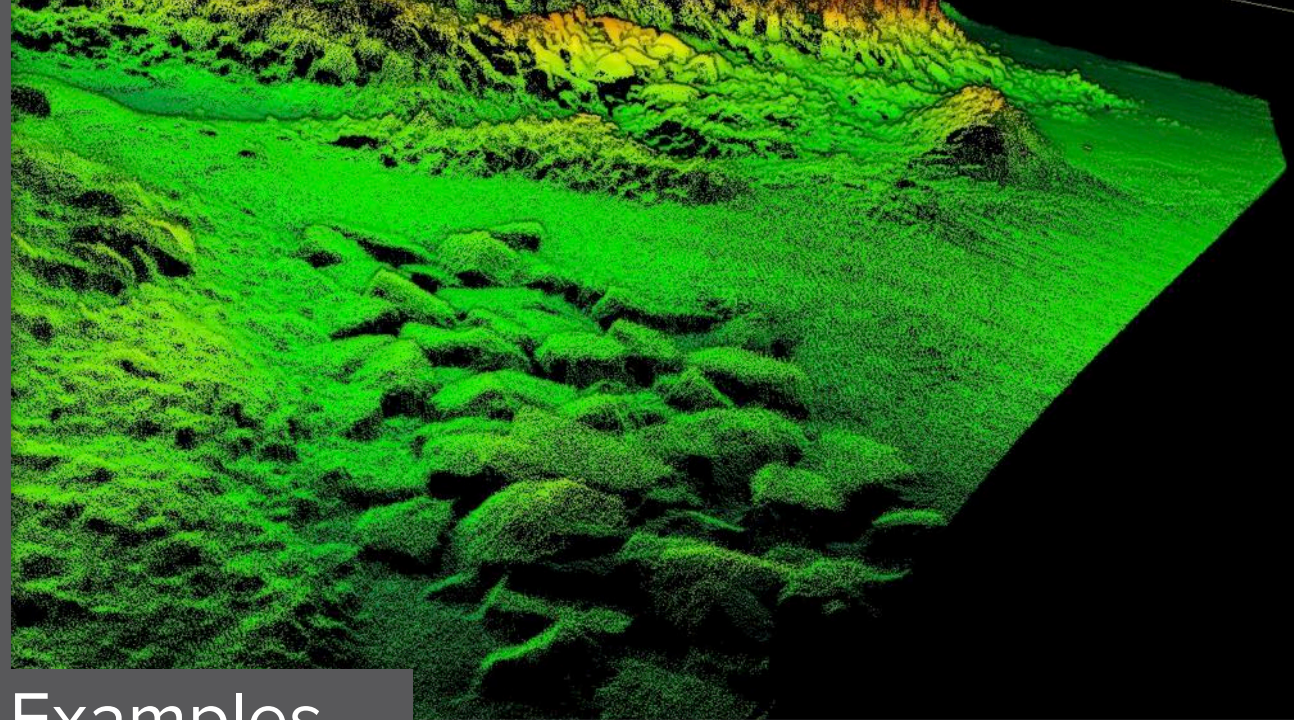
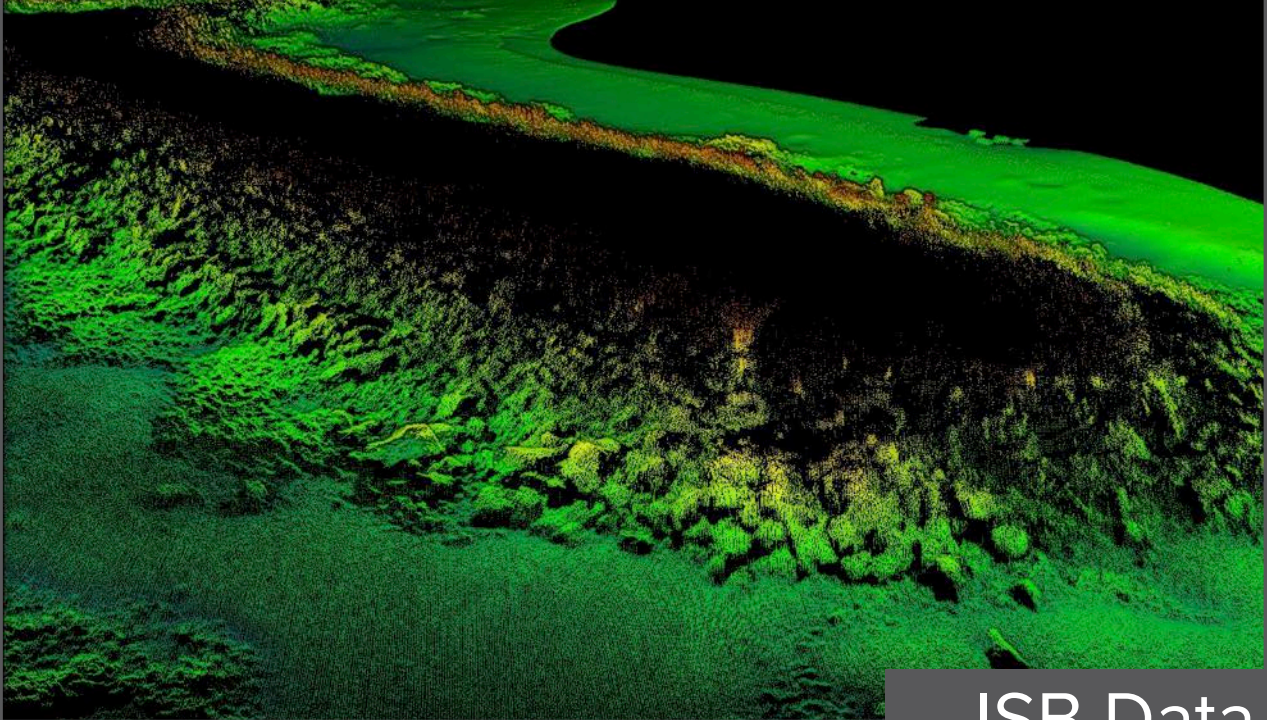
- Ultra compact and unique curved array design.
- Tight positioning and motion sensor integration.
- Effective in extreme environments and demanding conditions.
- Highly portable for ease of installation and use.



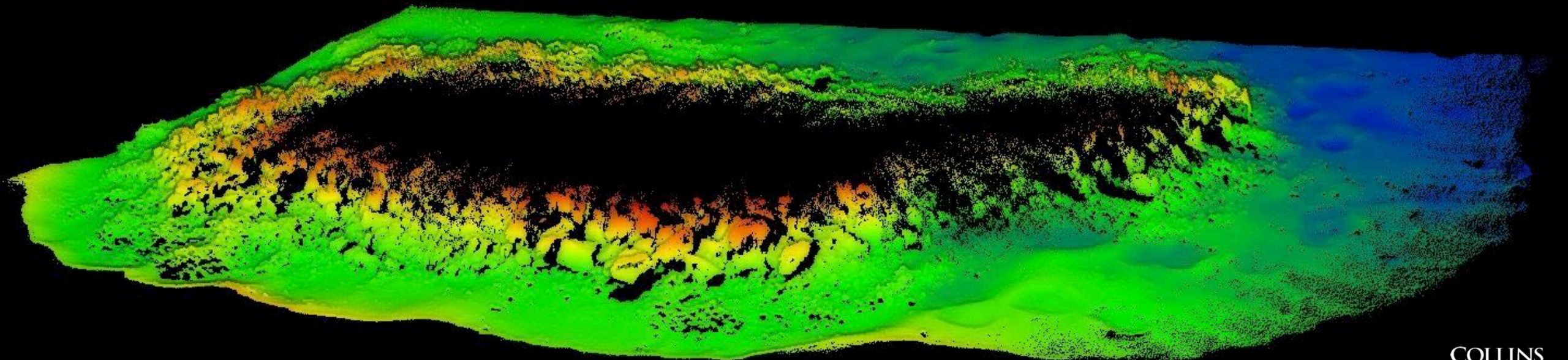
Underwater Structure Inspection

- Industry leading data coverage, resolution and quality.
 - Motion stabilization.
 - Unique '4D scanning' capability.
 - Smart techniques to maximize quality and minimize operator intervention.





ISB Data Examples



Results & Benefits

- Faster construction.
- High accuracy.
- Increased confidence in the infrastructure.



Future Considerations



Advanced Technology in
Marine Construction

Evolving “Best Practice”
in measurement and QC

Questions?

Thank you!

Dan Kucza, PLS, Survey & Technology Manager

Collins Engineers

M: 262.206.4957, E: dkucza@collinsengr.com

Matt Holland, VP Sales Canada

NORBIT Subsea

M: 503. 462. 2362, E: matt.holland@norbit.com



About Us

In 1979, Collins Engineers, Inc. opened its doors in Chicago providing engineering services in structural and transportation analysis and design, and underwater engineering. It was in the field of underwater engineering that Collins pioneered the use of professional engineers as diving inspectors in the evaluation of underwater structures.

The logo for Collins Engineers Inc. is centered within a white hexagonal shape. The word "COLLINS" is written in a large, bold, black serif font. Below it, the word "ENGINEERS" is written in a smaller, green, sans-serif font. To the right of "ENGINEERS", the letters "INC." are written in a small, black, sans-serif font. The entire logo is set against a dark green background with a decorative border of lighter green hexagons and lines.

COLLINS
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About NORBIT

- Global provider of tailored technology to carefully selected niches.
 - Headquartered in Norway
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 - Worldwide sales and distribution
- Key markets:
 - Oceans
 - Connectivity
 - Product Innovation and Realization
- Mission to 'Explore More'

