ACEC ESE 2026 Michigan

Official Entry Form

ABOUT THE PROJECT'S SCHEDULE AND BUDGET

Budgeted and/or actual costs may not apply to some studies in Category A and some projects in Category D.

With the exception of Category "A" and some Category "D" projects, **costs reflected below are always construction costs and are NOT ENGINEERING FEES**. If your firm was responsible for the entire engineering-design of the project, then the *Entrant's Portion of the Total Construction Budget* amount and the *Entrant's Portion of Total Construction Actual Cost* amount will be the same as the *Total Construction Budget* amount and *Total Construction Actual Cost* amount.

If your firm was not responsible for the entire engineering-design of the project, then the *Entrant's Portion of the Total Construction Budget* amount and the *Entrant's Portion of Total Construction Actual Cost* amount should be the part of total project construction cost your firm was responsible for. (i.e.: A mechanical engineering firm was responsible for $12M of a total Construction budget of $40M. $12M is the *Entrant's Portion of the Total Construction Budget*. $12M is the *Total Construction Budget*.)

Furnish all information requested below for each entry (signatures by the submitting firm(s) and the client(s)/owner(s) are required). Firm, project, and client/owner's name should be typed or printed as they are to appear on the award. The project name is strictly limited to 45 characters.

The entry fee is $400 per entry for ACEC/Michigan and MSPS members; $1,300 for non-members. Checks for the remaining entry fee (less intent to enter deposit) should be made payable to ACEC/Michigan and delivered with your physical project panel or mailed to 530 W. Ionia Street, Suite D, Lansing, MI 48933. Click here to pay by credit card.

ABOUT THIS PROJECT

Submitting Firm(s): Nowak & Fraus Engineers

Primary Client/Owner: MDNR

Project Name: Aloha State Park LiDAR Survey and Study

Project Category: D - Surveying/Mapping Technology

Project Location: City: Cheboygan, State: Michigan, Country: United States

What was the Entrant's Role in the project: Surveying

(Budgeted and/or actual cost may not apply to some studies in Category A and some projects in Category D)

Completion/Use Dates:

Scheduled:	11/30/24	Actual:	11/30/24

Category A & D Costs:

Total Project Budgeted:	52,300.00	Total Project Actual:	52,300.00

Construction Costs:

Total Construction Budgeted:	700,000	Total Construction Actual:	TBD
Entrant's Portion of Total Construction Budgeted:	0	Entrant's Portion of Total Construction Actual:	0

QBS: No

ABOUT THE FIRM(S) SUBMITTING THE PROJECT

Entering Firm: Nowak & Fraus Engineers

CEO - **Title:**

Firm Representative - Jeffrey J. Huhta, PE, PS **Title:** Managing Partner

I hereby authorize submission of this project into the American Council of Engineering Companies' 2026 Engineering Excellence Awards competition.

Senior Executive/Principal - Steve Sutton, PE **Title:** Managing Partner
(Signature will be required)

Address (no P.O. Box): 46777 Woodward Avenue Pontiac MI 48342

Phone: (844) 416-3364

Mobile: (248) 635-6571

Email: swsutton@nfe-engr.com

SIGN HERE

Date: 9/19/2025

Marketing Representative - Marion Hester **Title:** Marketing Coordinator

Address (no P.O. Box): 46777 Woodward Avenue Pontiac MI 48342

Phone: (844) 416-3364

Mobile: (248) 842-9112

Email: mhester@nfe-engr.com

ABOUT THE CLIENT/OWNER(S) OF THE PROJECT

Primary Client/Owner: Michigan Department of Natural Resources (MDNR)

I believe the work of the engineer meets the intended uses and expectations for the project and hereby grant permission to enter this project in the ACEC 2026 Engineering Excellence Awards competition, and authorize publication of images and details of the project. I confirm that the project was ready for use between November 1, 2023 and October 31, 2025.

Primary Client/Owner Representative - Kimberly Beck-Williams **Title:** Park Supervisor
(Signature will be required)

Address (no P.O. Box): 4347 3rd Street, City: Cheboygan, State: MI Zip: 49721

Phone: (231) 625-021

Mobile: (231) 420-5326

Email: beckwilliamsk@michigan.gov

SIGN HERE Kimberly S. Beck-Williams **Date:** 9/19/2025

Aloha State Park, located on the shores of Mullett Lake in Cheboygan County, Michigan, is a beloved recreation destination that welcomes over 70,000 campers, anglers, and boaters each year. The park's 107 acres include a 290-site modern campground, three comfort stations, a sanitation station, and more than 90 full hook-up sites that support both seasonal and short-term visitors.

In recent years, however, the park has faced significant challenges in water management. High groundwater levels, failing drainage infrastructure, and altered stormwater flow patterns have caused premium campsites to flood and compromised utility systems. These conditions compromised the park's ability to provide safe and reliable accommodations, leading to lost revenue and decreased visitor satisfaction.

To address these critical issues, the Michigan Department of Natural Resources (MDNR), working in partnership with the Michigan Department of Technology, Management and Budget (DTMB), initiated the Aloha State Park Water Management and Drainage Improvements Project. Nowak & Fraus Engineers (NFE), in collaboration with Soils & Structures (SAS), was selected to lead the study and schematic design phases of this critical effort. Together, the project team provides innovative, science-driven solutions that will restore functionality, safeguard infrastructure, and improve the visitor experience.

The need for this project arose from a convergence of environmental, hydrologic, and infrastructure challenges. The campground was initially constructed on a former wetland system, making it vulnerable to fluctuations in groundwater levels. Seasonal variations in Mullett Lake, controlled by the Cheboygan Dam, exerted further influence on subsurface water conditions within the park.

Compounding the problem were recent utility improvements that inadvertently disrupted the stormwater system. Areas of the park that had previously drained effectively began exhibiting new flooding conditions. Electrical conduit was found to be transmitting groundwater, causing water to be discharged at pedestals near the shoreline — a hazardous condition for both campers and staff.

Additional complexities included:

- **Wetlands and environmental sensitivity**: Improvements risk altering adjacent wetlands, requiring careful planning and regulatory coordination.
- **Surface runoff barriers**: The Northeastern State Trail runs along the park's eastern edge, impeding natural drainage and redirecting runoff into the campground.

- **Artesian conditions**: Local groundwater pressure raised concerns that construction activities may have altered subsurface barriers, changing natural flow patterns.

These challenges required a team with not only technical expertise but also extensive experience in state park environments. NFE had previously led similar projects at Mitchell State Park and Young State Park, both of which experienced nearly identical groundwater and drainage concerns. Lessons learned from those projects provided a valuable foundation for success at Aloha.

The project encompassed Study and Schematic Design services, with a focus on developing practical, cost-effective, and environmentally sound solutions. Key elements of the approach include:

- **LiDAR Surveying**: Using advanced mobile LiDAR technology, NFE performed a high-resolution scan of the campground. NFE was able to develop a "Heat Map" at 0.10-foot contour elevations that identified low depressions where water collects, supporting the development of targeted interventions.
- **Precedent Research and Testimony**: Revelations from the LiDAR scanning revealed unique circular low depressions which were determined to be former tree locations. Using this as evidence, the NFE team obtained critical testimony from long-term staff that concluded the park and surrounding area had an unprecedented loss of vegetation (green ash trees) due to the Emerald Ash Borer that coincided with historical observations of ground water conditions.
- **Hydrologic and Hydraulic Analysis**: Detailed modeling of existing and future conditions to understand how groundwater and surface water interact within the campground. This analysis also examined how utility systems, including abandoned sanitary sewers and active electrical conduits, may be influencing water flow.
- **Geotechnical Investigation**: In partnership with Soils & Structures, the team conducted soil borings, installed monitoring wells, and performed drawdown studies to understand subsurface conditions. This work revealed the extent of high groundwater influence and informed the design of effective drainage solutions.
- **Wetland Delineation & Regulatory Coordination**: Recognizing the sensitivity of the surrounding ecosystem, the team delineated wetlands and worked proactively with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to ensure proposed solutions balanced infrastructure needs with environmental stewardship.
- **Design Alternatives & Phased Solutions**: Rather than prescribing a single approach, the team developed multiple conceptual options, allowing MDNR and DTMB to evaluate tradeoffs in cost, effectiveness, and environmental impact. Options ranged from large-scale infrastructure improvements to smaller, phased

projects that could be implemented by park staff. Long-term strategies included a sustainable and environmentally positive reforestation strategy.

The technical rigor of this work ensures that every proposed solution is grounded in data, responsive to site-specific conditions, and adaptable to the long-term needs of the park.

The Aloha State Park project delivers benefits that extend well beyond improved drainage. Its impacts can be grouped into three key areas:

- **Visitor Safety & Experience**: By addressing flooded campsites and compromised electrical systems, the project ensures campers can enjoy a safe, dry, and reliable environment. This directly enhances guest satisfaction and preserves the park's reputation as a premier recreation destination.
- **Economic Value**: As one of Michigan's most popular campgrounds, Aloha State Park generates significant tourism revenue for Cheboygan County and the broader region. Restoring full functionality of premium campsites protects this revenue stream and supports local businesses that depend on seasonal visitors.
- **Environmental Stewardship**: The design approach emphasizes sustainable water management practices, such as reforestation, bioswales and shoreline protection measures, to improve water quality before runoff enters Mullett Lake. Careful permitting and coordination with EGLE ensures that solutions not only solve current problems but also protect wetlands and natural hydrology for future generations.

This balance of human, economic, and environmental benefits underscores the project's long-term value to the state of Michigan.

At the heart of the project is a highly experienced team that brings continuity, technical excellence, and collaboration.

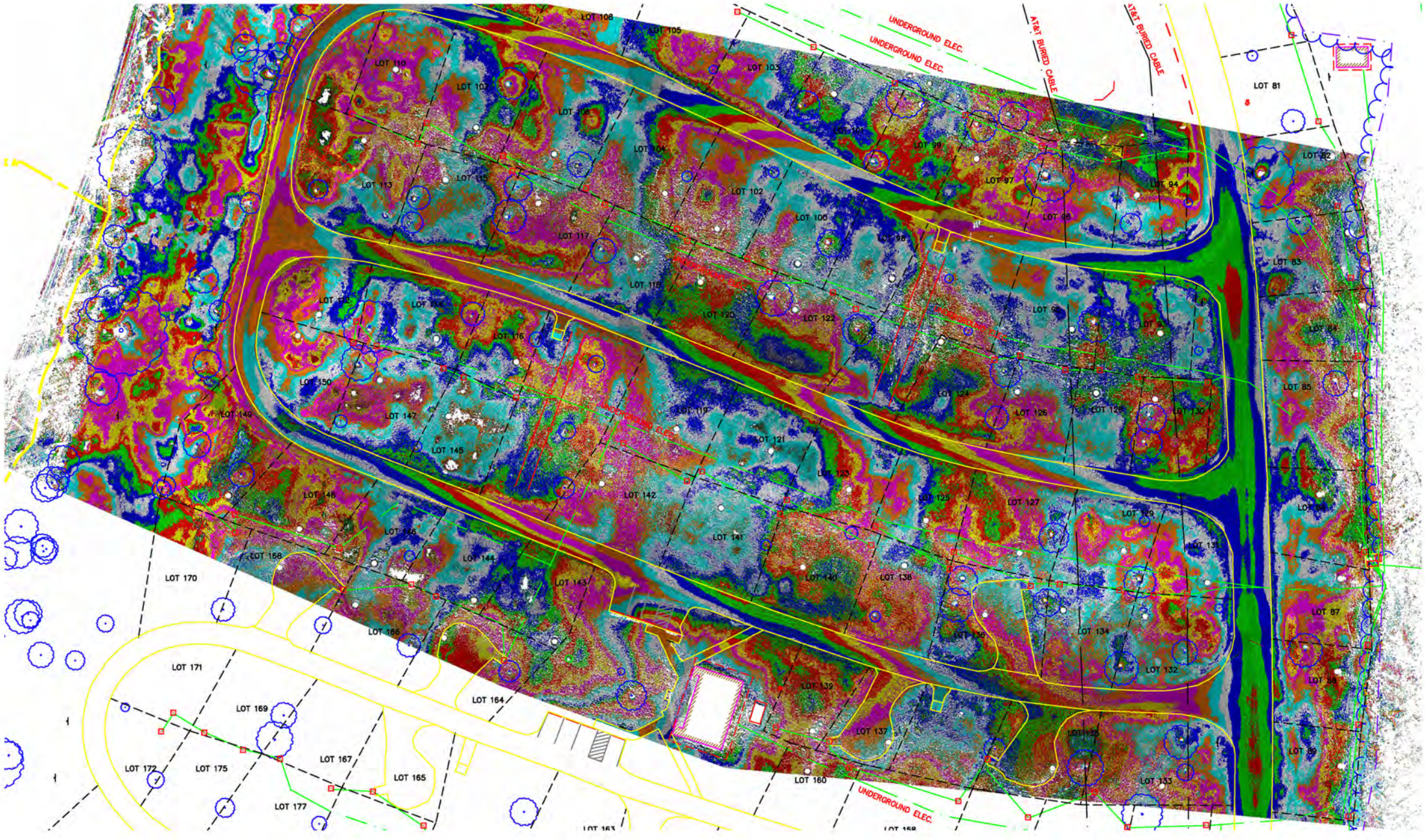
- **Nowak & Fraus Engineers (NFE)** has served MDNR and DTMB on numerous state park improvement projects across Michigan. The same professionals who successfully delivered drainage and groundwater solutions at Mitchell and Young State Parks are leading the Aloha effort, ensuring consistency and efficiency.
- **Soils & Structures (SAS)** provides specialized geotechnical expertise, with decades of experience in northern Michigan geology. Their input is critical in understanding groundwater behavior and designing long-term solutions.
- **MDNR & DTMB** have been engaged partners throughout the process, providing guidance, historical knowledge, and clear project goals. Regular meetings and transparent communication ensure alignment at every stage.

This collaborative model exemplifies how public agencies, and private consultants can work together to address complex infrastructure challenges in a way that maximizes value for citizens.

The Aloha State Park Water Management and Drainage Improvements Project exemplifies innovation technical excellence. By combining advanced survey analysis with practical design solutions, the project directly addresses critical groundwater and drainage issues that threatened visitor safety, utility infrastructure, and the park's economic viability.

Through strong partnerships, scientific rigor, and a commitment to sustainable outcomes, the project team is delivering more than just infrastructure improvements — they are restoring a vital community resource and ensuring that Aloha State Park remains a destination for generations to come.

For these reasons, the project is a strong candidate for recognition. It demonstrates the best of surveying and engineering practice, reflects a deep respect for Michigan's natural resources, and provides lasting benefits for residents, visitors, and the environment alike.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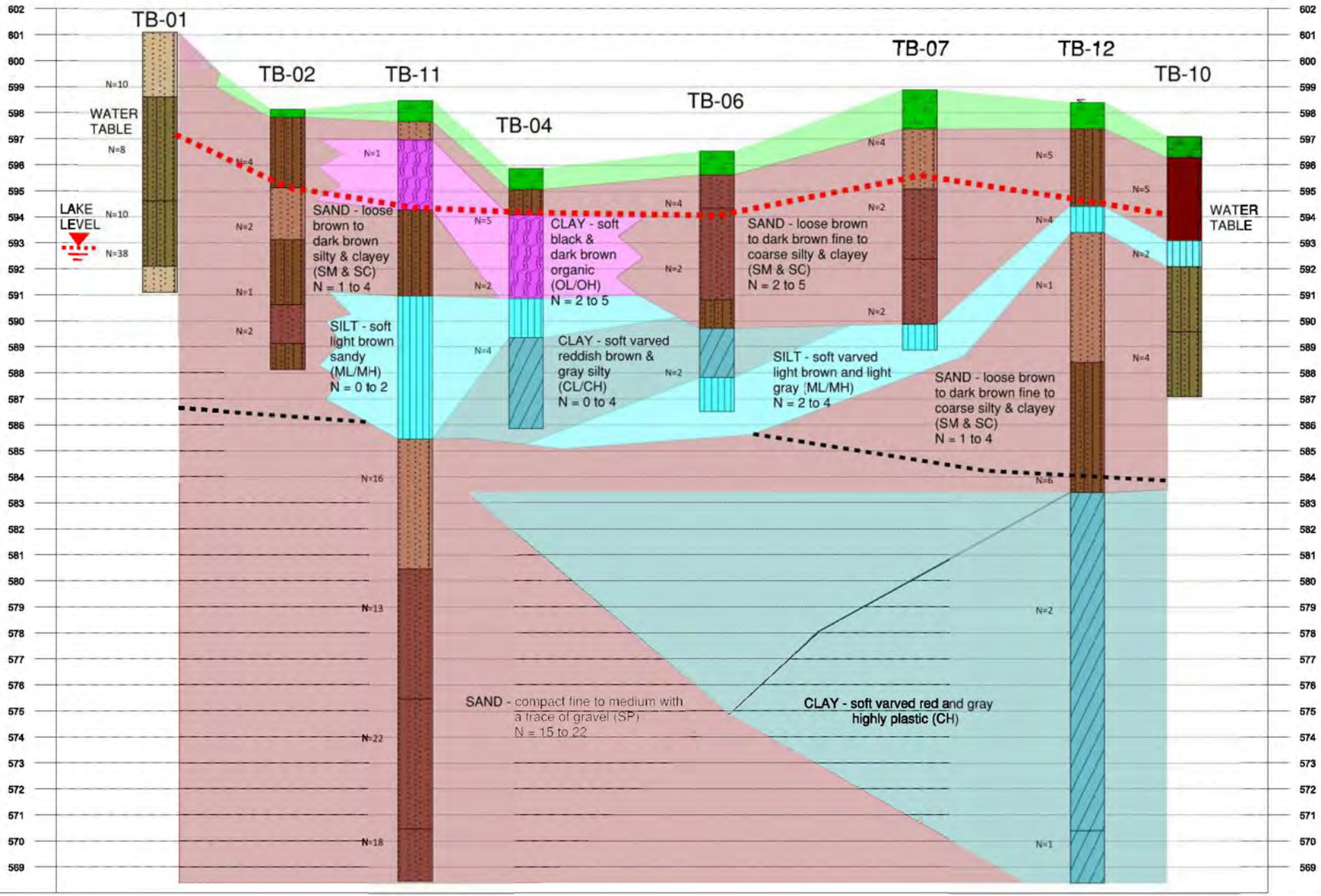
Project Id:	2024.0607	Title:	Section line 1
Project Title:	Aloha State Park Drainage Improvements	Vertical Scale:	1:63
Location:	Cheboygan, Michigan	Horizontal Scale:	1:4060
Client:	Nowak & Fraus Engineers	Engineer:	D. Hohmeyer, P.E.

GENERAL NORTH-SOUTH SOIL PROFILE

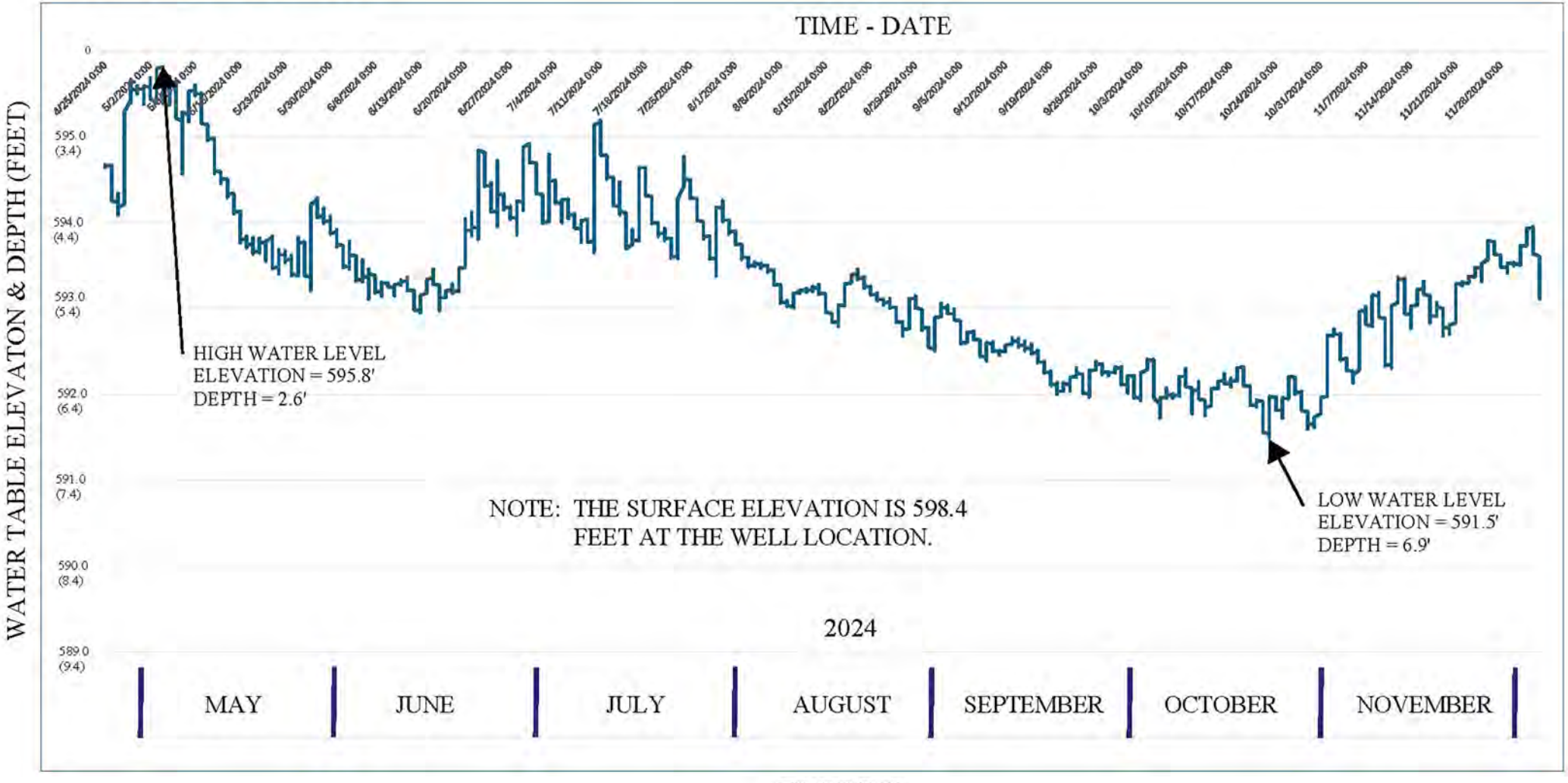


NOTE: The water table is present at a depth of 1.8 to 4.2 feet at the test boring locations. These depths correspond to elevations of 593.6 to 597.1 feet.

Legend Key

- Poorly Graded SAND with SILT
- Topsoil
- SILTY SAND
- ORGANIC SOIL
- Poorly Graded SAND with CLAY
- Poorly Graded SAND
- SILT
- Lean CLAY

MONITOR WELL #12 WATER TABLE MEASUREMENTS
ALOHA STATE PARK, ALOHA, MICHIGAN
PROJECT NO. 2024.0607



ALOHA STATE PARK LIDAR SURVEY AND STUDY

Entering Firm: Nowak & Fraus Engineers | Pontiac, Michigan
Owner: Michigan Department of Natural Resources | Lansing, Michigan

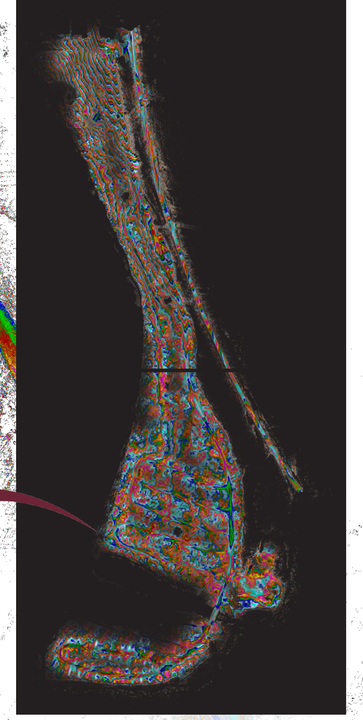
Aloha State Park, located on the shores of Mullett Lake in Cheboygan County, has 290 modern campsites across 107 acres and welcomes 70,000 campers each year. Recently, high groundwater, surface flooding, and a compromised electrical infrastructure created serious challenges. Premium campsites are often closed with visitor safety and park revenue at risk.

Michigan Department of Natural Resources (MDNR), in partnership with the Michigan Department of Technology, Management and Budget (DTMB), engaged Nowak & Fraus Engineers (NFE), and Soils & Structures (SAS) to study long-term solutions. The NFE work plan included a high-density LiDAR scan of the campground that produced a 0.10-foot contour “Heat Map” of the project area. This innovative approach revealed areas of poor drainage and tree loss caused by the invasive Ash Borer. The survey strategy was critical in identifying areas requiring drainage improvements, remediation, and mitigation of high groundwater impacts on the park’s underground infrastructure.

Key Highlights:

- LiDAR scan of campground revealed loss of vegetation impacted surface drainage and led to elevated groundwater conditions.
- Testimony revealed other areas of the watershed had lost significant vegetation that contributed to poor site conditions.
- LiDAR directly led to a cost effective and sustainable remediation plan that includes a long-term reforestation strategy.
- The project approach addresses enhanced safety, functionality, and visitor experience.

By combining LiDAR technology, research, testimony, and good collaboration, a strong foundation for critical design solutions was developed that ensures Aloha State Park will remain a safe, reliable, and treasured destination for generations to come.



NFE utilized LiDAR technology to generate a high-resolution 0.10-foot contour “Heat Map” of the Aloha State Park campground that was used to resolve poor surface drainage and high groundwater conditions.

DEPARTMENT OF NATURAL RESOURCES DNR MICHIGAN

DTMB Technology, Management & Budget

ACEC American Council of Engineering Companies of Michigan

NF ENGINEERS

SOILS & STRUCTURES

Presentation Script

Aloha State Park LiDAR Survey and Study
Nowak & Fraus Engineers

Aloha State Park is a popular destination within Michigan's state park system, but recently the park faced major challenges, including elevated groundwater conditions, campsite inundation, and compromised electrical infrastructure. NFE developed a high-density LiDAR scan of the campground that produced a 0.10-foot contour "Heat Map" of the project area. The LiDAR scan led to discovering how the loss of trees impacted surface drainage and groundwater conditions. The outcome of the survey and study was the development of practical and cost-effective schematic design alternatives that addressed immediate safety concerns and long-term sustainability, while balancing environmental considerations.

P: 844-416-3364 | www.nfe-engr.com

Brochure Text

Aloha State Park LiDAR Survey and Study
Nowak & Fraus Engineers

Through advanced LiDAR data acquisition and analysis, Nowak & Fraus Engineers and Soils & Structures identified sources for poor surface drainage and high groundwater conditions that lead to the creation of sustainable solutions to restore safe, reliable operations to 290 campsites at Aloha State Park.

Award Information

Project Name: Aloha State Park LiDAR Survey and Study

Owner Name: MDNR

Firm Name: Nowak & Fraus Engineers