J.F. Brennan Company, Inc. (Brennan) is an environmental remediation and marine construction company that specializes in water-based remediation and habitat restoration projects throughout the United States. For nearly 100 years we have been providing quality services through innovative approaches and safe practices.

**What sets Brennan apart?**

- Everything we do takes place around the water, and as a result we have the right people, equipment, and programs necessary to mitigate associated risks.
- Our large, well-maintained fleet of environmental equipment is highly specialized and able to achieve remedial expectations.
- We bring an elevated level of flexibility and transparency to each project which increases our ability to overcome unforeseen challenges and maintain a collaborative environment for all stakeholders.

**Our Services**

- Environmental Dredging
- Material Separation, Dewatering, and Water Treatment
- Wetland Remediation
- Insitu Sand Covers and Capping
- Habitat Restoration
- Hydrographic Survey
- Encapsulation and Containment

**Our Goal**

At Brennan we strive to successfully complete challenging projects safely and on time, and provide services that deliver maximum quality and value to all stakeholders in an environmental remediation and/or habitat restoration project.
Surgical Hydraulic Dredging

Brennan’s fleet of hydraulic dredges has been highly customized for accurate positioning and precise removal of sediments in a variety of face thicknesses and material types. Our methodical capability of running production dredging simultaneously to residual removal drives increased efficiencies, while proprietary modifications and patented tools ensure successful results. We also can implement diver assisted micro-dredging for sediment removal around critical structures and buried utilities.

Hydraulic dredging is one of the most efficient forms of removal and transport, and because all material is contained within a sealed pipeline, there is minimal impact to the surrounding community and infrastructure. When combined with a proper debris management program, hydraulic dredging is one of the most economical and effective approaches for challenging dredge conditions.
ENVIRONMENTAL DREDGING

Precise Mechanical Dredging
Brennan has been mechanically dredging the inland waters of the United States for over 70 years. Our fleet of mechanical dredges includes several types and sizes of excavators and duty cycle cranes that can be outfitted with custom or conventional tools. We can provide portable equipment for small water bodies, or large Great Lakes Load Lined equipment for rough waters and navigational channels.

Our proprietary environmental digging bucket that has the ability to remove hard material while avoiding re-distribution of contaminated sediments from debris impediments, as is often the case with traditional environmental clamshell buckets.

FLEXIBLE MATERIAL TRANSPORT OPTIONS

Barge Transport
Our fleet of barges includes sectional, shallow draft material, hopper, and heavy-duty load line platforms that are capable of mechanical transport between a dredge and offloading site. We operate USCG inspected vessels ranging from 250 HP up to 1,750 HP with licensed pilots and experienced crews.

Hydraulic Transport
Reduce the project impact on the local community and its infrastructure by using a hydraulic transport system that will isolate and encapsulate contaminated sediments between the excavation point and the designated processing area. Brennan can provide several pipe size options that will safely and efficiently move materials over distances of up to 10 miles.

Combination Transport
Brennan also offers combined remedy transport systems in which sediment can be mechanically excavated and hydraulically transported, or hydraulically dredged and mechanically transported. Our large fleet of equipment, knowledgeable crews, and innovative approaches will provide clients with the flexibility they need to effectively and economically reach their goals.
Brennan’s experience in both passive dewatering systems and active (mechanical) dewatering systems can provide the flexibility required in debris separation, sediment consolidation, and water treatment challenges. We work with several key industry partners to design, assemble and implement solutions to best fit each unique project and provide our clients with turnkey results.

Passive Systems
In situations where mechanical dewatering is not economically warranted, Brennan can offer passive dewatering systems in which water is removed from dredged sediment with the aid of thickening agents. Passive dewatering can avoid the significant upfront capital costs that mechanical equipment typically presents.

» Settling Ponds
» Geotextile Tubes

Mechanical Systems
Depending on sediment types, debris content, and the number of yards designated for removal, we can combine an array of technologies to reach disposal goals. Brennan owns and operates several mechanical systems, but often partners with key industry experts to approach each and every unique situation.

» Belt Presses
» Hydrocyclones
» Mechanical Weirs
» Plate and Frame Presses
» Sand Wheels
» Thickener Units
» Trammel Screens
» Vibratory Screens
Environmental remediation work is not always located on land or open water! Projects can be located in difficult access areas such as wetlands and marshlands. These areas are often too soft on which to walk, and too dense for floating equipment, which requires very different approaches than a standard land-based or water-based remediation. Our fleet of amphibious equipment is one-of-a-kind and can save the added cost and environmental damage that building temporary access roads will have in a sensitive aquatic environment.
Broadcast Capping System (BCS™)
Brennan’s patented Broadcast Capping System can place clean aggregates up to 3 inches in diameter effectively, accurately, and efficiently. Our system uses the water column to gently place an evenly distributed cover over a variety of insitu sediment types. This process minimizes intermixing between the cover materials and underlying sediments, creating a homogeneous layer and reducing material costs.

Amendments such as reactive capping material can be accurately intermixed with aggregates within the BCS™ system. As a measure of flexibility, cover and capping material can be hydraulically or mechanically transported. The BCS™ uses RTK-GPS, sophisticated placement software, and an array of monitoring sensors to spread in both shallow and deep water conditions, as well as along shorelines.

Mechanical Placement
Brennan can also place sand covers, engineered caps, and rock armament through mechanical methods. Whether it is insitu or along the shoreline, we have the equipment and ability to carry out accurate placements using computer-aided technologies.

Specialty Armament
In situations where navigation and water depths are a concern, or access is limited, Brennan can offer alternative approaches to rock placement. Our staff of over 30 divers can place long-lasting armament that can better withstand tidal fluctuations, vessel passage, and heavy currents, while minimizing the protective layer’s thickness.

Alternatives to Rock Armament
- Fabric-formed Articulating Revetment Mats
- Precast Articulating Block Mats
- Geogrid
HABITAT RESTORATION

For over 30 years, J.F. Brennan Company has completed challenging habitat restoration projects along the inland waters of the United States. We are dedicated to the preservation and rehabilitation of environmentally sensitive wetlands and take pride in the fact that we have restored hundreds of acres of wildlife habitat. Whether the restoration takes place after a remedial effort where contaminated soil is removed, or it is the re-creation of eroded wetlands, Brennan has the experience and equipment necessary to accomplish large-scale restorations.

Our areas of expertise include:

» Protected Habitat Construction
» Emergent Wetland Development
» Scour and Erosion Prevention

We have the ability to access and effectively manage projects that take place in remote locations. Our large fleet of portable and shallow draft marine equipment, as well as our amphibious equipment, provides the flexibility necessary to avoid creating deep channel access or temporary roads.
HYDROGRAPHIC SURVEY

Accurate measurement is the key to success, and Brennan uses the latest technologies and custom designed vessels to map all of our environmental projects. We have the ability to perform hydrographic surveys in both shallow water and deep water conditions, marshland surveys using floating all-terrain vehicles, and topographical surveys to capture shoreline and critical structure data points. Brennan also provides underwater imaging and dive inspections to gather additional information on critical structures.

Hydrographic Survey

Our fleet of custom designed survey vessels and crew of knowledgeable hydrographers enable us to create pre-dredge, daily progress, and post dredge surface models used for accurate volumetric calculations. All of our vessels are equipped with RTK-GPS systems, Hypack® software, and either a single beam echo sounder or multi-beam bathymetric system. Brennan’s customized survey vessels have the ability to cross floating pipelines, access shallow waters, and carefully maneuver around critical structures. We promote a high level of transparency and invite client quality assurance representatives to participate in quality control surveys and benchmark checks.

Marshland and Topographical Survey

Our staff of surveyors use the same RTK-GPS equipment to collect topographical points to create a complete model of the remediation or restoration site. We have specialty amphibious all-terrain equipment to gain access to wetland areas that cannot be traversed on foot or in a boat.

Imaging Sonar

When underwater visibility is limited, 360 degree scanning sonar can help clear things up. This technology uses acoustics to create an image of critical structures help detect structural problems and scour issues. Typically these images can be combined with above water digital photography or CAD drawings to create a pictorial reference of the entire structure.
J.F. Brennan Company can also provide construction services to encapsulate and isolate contamination within a specified area. Our expertise in deep foundations can provide a quality permanent or temporary structure to isolate contaminants of concern.

**Horizontal Cutterhead**

The horizontal cutterhead was another tool that was developed by Brennan to “slice” through a column of soft sediments. In situations where contaminated sediments are located on top of natural soft sediments, the horizontal cutterhead can be used to remove contaminated material while leaving underlying sediments undisturbed.

**VicVac™**

The patented VicVac™ open suction hydraulic dredge attachment was developed for the sole purpose of residual cleanup of a hard bottom. The VicVac™ was designed as an alternative to a cutterhead attachment on an articulating, swinging ladder dredge. As a result we have been able to achieve a high level of cleanup success, which has reduced, and in some cases eliminated, the required sand cover and cap, providing significant savings to our clients.

Brennan is continuously developing new tools, equipment, and processes to achieve and surpass remedial and restoration goals. The Brennan Culture is one of continuous improvement, innovation, and invention. We hold several patents on equipment and processes that have achieved exemplary results on projects that presented extraordinary challenges. Here are a few examples:

**Additional Innovations**

Other innovations include items such as Gatling plates, cutter shears, and root knives that help manage debris during hydraulic dredging. We also own systems that can remove contaminated sediments from sheet piling webs, customized hydraulic power units for booster pump modules, environmental digging buckets, and other proprietary technologies. We can aid in research and development projects for pilot studies such as insitu Granulated Activated Carbon injection systems and subaqueous carbon rakes, or other innovative methods in which environmental remediation expertise is required.
Marine Professionals Since 1919