



TAKING TO THE SKY

This contractor found an effective way to face a unique challenge: transporting equipment and debris over water to complete a project on time.

To see the YouTube video of this one-of-a-kind project, please visit www.youtube.com/watch?v=h6lWpaalKW0.



When the folks at Manno Construction, Inc., decided to bid on the Mount Morris Dam South Training Wall Cleaning and Repairs project in Mount Morris, New York, they were basically flying blind. The project consisted of furnishing all labor, plant, material, and equipment necessary to remove rock, soil, vegetation, and talus from the top of the South Training Wall and along the fillet of the south edge of the Mount Morris Dam. But there was a catch: While workers could access the wall via an elevator and then stairs that descended from the observation deck at the dam, the only viable approach for equipment was across the water. The contractor needed to remove 1,500 yards of dirt, trees, and debris from the concrete wall so that the owner could inspect it and make sure the concrete was still intact. The “what” of the project was clear from the beginning, but the “how” was another matter.

Manno Construction considered three scenarios during the bid process. It seemed obvious that the best way to get equipment to the site was through the air. However, other options included using a barge with a crane on it or using a combination of both a barge and a helicopter. The contractor decided to start by using a helicopter to move the necessary equipment to the site. This little experiment would give them the opportunity to try the helicopter for a day and see if it could meet the production rates needed to finish the job on time. Luckily, there was never a need to explore other options. The helicopter, supplied and operated by Construction Helicopters, Inc., out of Ypsilanti, Michigan, proved to be the perfect approach.

Construction Helicopters has a great deal of experience working in a variety of construction settings, but this project was unique even for its seasoned crew, which consisted of five people. They were working over water with the threat

of winter weather arriving. The job also called for a mandatory completion time, due to prior commitments by the helicopter company.

WORKING OVER WATER

The helicopter used for the project has a 9,000-pound total lifting capacity, and the heaviest machine used for the project weighed in at 8,000 pounds. The equipment used on the project included the following:

- A Hitachi 270LC excavator, which was used to move dumped brush and debris around the staging area, as well as to make repairs to the North Access road
- A Cat D-6 bulldozer, which was used to make repairs to the North Access road, and to spread and grade dumped material in the staging area
- Bobcat T-190 and Bobcat T-200 skid steers, which were used to load debris material into dump bins from the South Training Wall
- Two Bobcat Mini Excavators, which were used to excavate debris material on the South Training Wall
- Three custom, 2-yard, self-dumping bins from Cherokee Companies, which were used to move material from the South Training Wall to the staging area
- The Skorsky 61 helicopter, which was used to airlift heavy equipment over the water to the South Training Wall and to shuttle the self-dumping bins between the work area and the material staging area

The installation of fall protection and the access road improvements took approximately 5 days to complete. The actual debris removal took 5 days, including mob and demob of the helicopter crew and equipment.

The Manno team began by clearing the trees and other woody debris by hand from the work site. They used military-grade cargo nets to



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INFORMATION



Manno Construction, Inc., is a Ridgway, Pennsylvania-based heavy construction contractor serving numerous federal, state, and local government agencies for over 25 years. The company specializes in streambank stabilization and restoration, wetland construction and mitigation, excavation, earthwork, and marine construction. For more information, please call 800.255.1310 or visit www.mannoconstruction.com.

bundle the debris. On the helicopter's first trips, it would move a piece of equipment from the staging area to the work area, then they would attach the prebundled trees and woody debris for the return trip. By the time all of the equipment was brought to the site, all of the woody debris was gone.

Next, the Manno crew began concentrating on the dirt, brush, and other debris that needed to be removed. They used the two main excavators and two tracked skid steers on the wall, which was roughly 300 feet long. They used an excavator and a skid steer on each side of the wall, with a self-dumping bin in the middle. This allowed them to work in from both directions.

According to Denny Cornell, Manno Construction project superintendent, "We needed that amount of equipment just to keep up with the cycle times the helicopter was able to achieve. The helicopter could take a bin to the other side and come back in an average time of 2 minutes, 35 seconds. I think the fastest trip it made was in 1 minute, 45 seconds."

The self-dumping bins from Cherokee Companies were a key to the helicopter's quick turnaround time. To transport a bin, the helicopter was connected to the lifting handle of the dump bin and airlifted across the river to the staging area, where it was lowered to the ground until the arm on the bin was tripped and it dumped itself. Then the empty bin was returned to the work area.

Once the flight activities began, the removal activities continued virtually nonstop until sunset. The helicopter was refueled approximately every 2 hours, giving the crews short breaks throughout the day. The lunch meal was brought to the crew to minimize downtime and to maximize production.

This project was unique in that it required many times the number of loads the construction helicopter would typically transport on a project. A typical job might call for 60 loads, whereas this job called for 750 loads to be transported. Construction Helicopters gave Manno a very conservative production estimate on the front end, and they were able to meet and exceed that estimated production rate on the job.

STRATEGIC PLANNING REDUCES TURBULENCE ON THE JOB

To address the significant challenges of the Mount Morris project, Manno Construction held a variety of preparatory meetings to discuss and coordinate work activities. The crew worked from sunrise to sunset to take advantage of all daylight hours available.

Construction Helicopters provided a ground team member, who would start the day by being shuttled to the removal side of the project and being briefed on the day's work. This team member also served as a rigger, with help from one of Manno's crew members also assigned to that task. The ground team member was in direct communication with the helicopter crew throughout the project.

Another important factor in the project's success was coordination with the New York Office of Parks and Preservation, as well as the dam operation, the U.S. Army Corps of Engineers, and local fire and police departments, which had to be involved because of the use of the helicopter.

The key was the intricate control that was needed and shown during the helicopter activities. Manno had to get enough equipment to the site so that they could keep up with the helicopter's high production rates, but their equipment choices were limited by the amount of weight the helicopter could lift. This was an unprecedented job, so there was no prior project on which to base equipment decisions. They decided to go with smaller equipment that could still accomplish the work at the rate necessary to keep up with the helicopter, and it paid off in a successful project that met the tight timeline required and exceeded the expectations of everyone involved. ♦

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