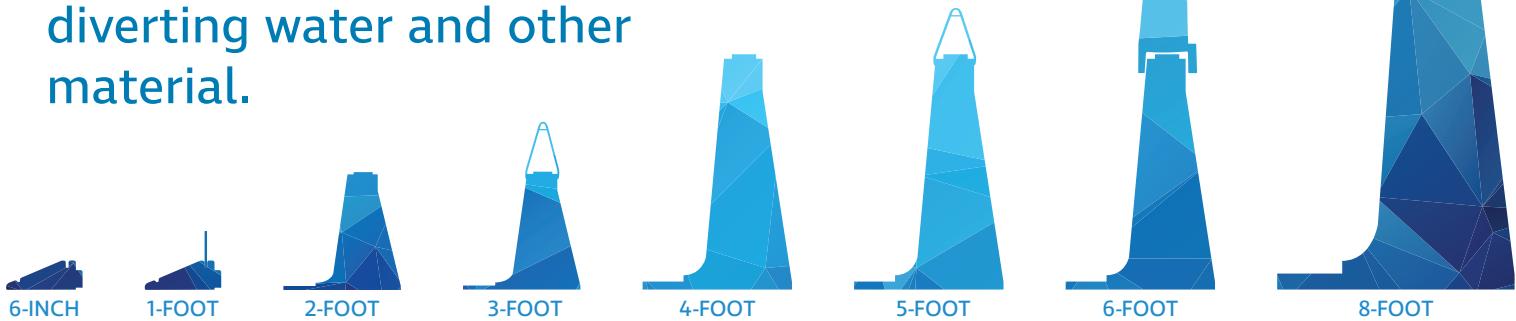


Muscle Wall:

Rapidly deployed, portable retaining wall system that excels at both containing and diverting water and other material.



Muscle Wall systems feature an innovative design that uses durable, hollow, low-density polyethylene walls that can be quickly moved into place to protect homes and businesses from the devastating and costly impact of flooding.

Oil and gas companies also tap this same proven technology, knowing that Muscle Wall offers cost-effective and safe primary and secondary containment solutions. Over 15 miles of Muscle Wall have been deployed in oil and gas operations and have proven to be a cost-effective, safe alternative to earthen berms.



Flood Control



Stormwater Management



Erosion Control



Pipe & Utility Road Crossing



Primary Containment



Secondary Containment



THE STRENGTH IS IN THE TOE

The Muscle Wall system is able to withstand the immense force of rushing or standing water due to its patented toe design.

The pressure of the water forces the toe downward, thus overpowering the hydrostatic force, which anchors the wall to the ground.



DESIGNED FOR SPEED

The coupler-joint connection allows each wall to securely connect one with another. Each wall features a male and female connector, designed to slide into place on the corresponding connector of the next wall.

The coupler-joint system allows for a 22° range of motion at each connection enabling Muscle Wall to adapt to its terrain, as well as make sweeping turns along the natural path of a river, stream or your site's natural terrain.

CUSTOMIZE YOUR PROTECTION

In addition to the 22-degree range of motion at each connection joint, you have the option of using a corner unit that enables a 90-degree turn. This feature makes Muscle Wall extremely adaptable and customizable to your specific needs for each deployment site. Each corner unit is also reversible, so it can be used to branch your protection off in either direction.

NESTLE TO SHIP AND STORE

The unique "L" shaped design of Muscle Wall enables each wall to nestle together with another in order to maximize shipping and storage space. Each wall has an extrusion on the top of the wall that snaps into place on the toe of the connecting wall. This system allows the walls to be securely stacked together.



Muscle Wall is a flood control product that replaces thousands, if not hundreds of thousands of sandbags all while being quick, easy, reusable, reliable, and customizable. All traits that are essential for flood fighting solutions, yet hard to find in other competing products.

468 SANDBAGS

REPLACED BY

14 FT MUSCLE WALL



TIME IS MONEY AND MUSCLE WALL SAVES BOTH

Filling and stacking sandbags is a messy, time-consuming, and labor-intensive process. The true expense of sandbags, once the cleanup, transportation, and other costs are factored, is \$2.50 to \$5.00 per bag. Most sandbags can't be reused because they are contaminated with gas, oils, and raw sewage. To protect homes, businesses, and communities from the threat of floodwater sandbags can be used, but it requires the efforts of many people. When the threat is gone, home-owners and businesses are faced with the costly hassle of disposing of the heavy, contaminated sandbags. Muscle Wall can be set up quickly and easily by only a few of people, are reusable, and is effective.



PROTECTING BUSINESS CONTINUITY

Big expenses during a flooding event come from the loss of business continuity. Businesses must remain shut down while repairs are made or flood protection methods are removed.

Muscle Wall, in one instance, was used to protect an office building from floodwater, and as a result the office was able to be back up and running the very next day. Other buildings in the vicinity were out of commission for months, costing thousands of dollars in lost revenue.

R E C E N T D E P L O Y M E N T S



Logan City, UT



Ada County, ID



Rockland Power, NJ



Alton City, IL



Medicine Hat, AB, CA



Bayshore Sewerage, NJ



Boise City, ID



Orange County, CA



Heritage Fields



ORANGE & ROCKLAND UTILITIES NORTH EASTERN NEW JERSEY

Located in the northwestern suburbs of New York City, Orange & Rockland electric and gas service provides energy for 745,000 people in six counties in New York and northern New Jersey. Founded as the Rockland Light & Power Co. in Nyack, NY in 1899, they merged with Orange and Rockland Electric Company in 1958 and became Orange and Rockland Utilities, Inc. With their subsidiary, Rockland Electric Company, they became wholly owned in 1999 by Consolidated Edison, Inc, one of the largest energy companies in the United States.

Just like many others, Orange & Rockland Utilities was hit hard by Hurricane Sandy in 2012. The company estimates that 250,000 of its 300,000 customers were without power in the aftermath of the storm. Some customers reported a loss of electrical power of up to 11 days. With 300,000 electric customers, 130,000 natural gas customers, and over 1,300 square miles serviced, Orange & Rockland decided to invest in flood protection products in order to defend their highest at risk utility stations from the future threat of floodwater.

After conducting extensive utility station analyses and looking for the right flood protection product for their needs, Orange & Rockland ultimately decided on Muscle Wall, more specifically the 4-foot Muscle Wall system as the right flood protection product for their needs.

Orange & Rockland purchased a total of 1,074 feet of 4-foot Muscle Wall, 546 feet of which was deployed at their Upper Saddle River, NJ substation, and the other 528 feet was deployed at their Cresskill, NJ substation.

One of the many factors that led to Orange & Rockland choosing Muscle Wall was the fact that the very small footprint of the system allowed for the entire system to be set up inside of their security fences and keep up year-round.

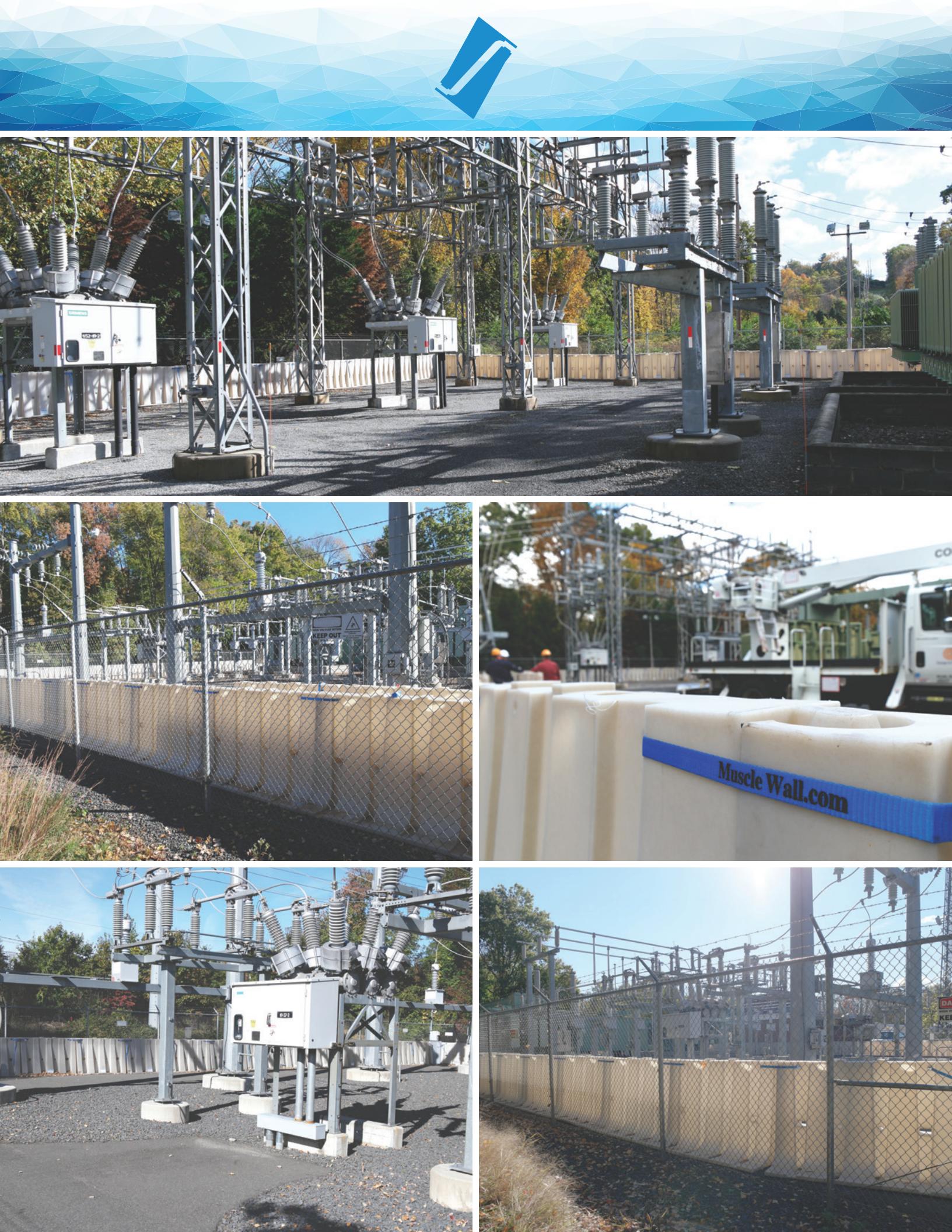
Because they wanted a long-term deployment, Orange & Rockland decided to forgo using any sandbags and instead used standard concrete blocks as their method to secure the liner to the ground in front of the Muscle Wall.

Locations:
Upper Saddle River, NJ
Cresskill, NJ

Installation Date:
October 2016

Product Used:
4-Foot Muscle Wall

Technical Description:
• Units used 179 walls
10 corners
• Distance 1,074 feet





LOGAN RIVER GOLF COURSE LOGAN, UTAH

Located in beautiful Cache Valley, Logan River Golf Course is an 18 hole, par 71 municipal golf course that elegantly winds around the wetlands of the Logan River. Designed by Robert Muir Graves of Walnut Creek, California and with the grand opening on July 10, 1993, Logan River Golf Course was proudly ranked the 10th best course in Utah in its first year of business. Shortly afterward it was rated one of the top 500 places to play in the United States by Golf Digest Magazine, as well as voted by Golf Magazine as one of the best places to play for under \$50.

In June of 2011 Logan River Golf Course fell prey to a catastrophic flooding event in which holes 1 and 9 were damaged as well as affected access to other holes leaving golfers with only 9 holes to play for months after the flooding event. The flooding event was a result of the Logan River rising due to heavier than normal spring rainfall coupled with the snowmelt runoff from a heavy winter. This resulted in sections of the Logan River rising over its banks, which lead to the banks being weakened due to erosion, and then eventual breaches to the bank.

The financial repercussions that Logan City had to cope with resulting from the 2011 golf course flooding was steep. Aside from the costs of repair of the damaged assets at the golf course as well as the riverbanks, which was as high as \$500,000, the loss of revenue that was incurred while the golf course was under water and the months afterwards that it was being repaired is estimated to be as high as \$750,000.

In 2017 Logan River Golf Course was faced with a very similar threat as they faced in 2011. The threat of a rising river due to heavy rainfall and snowmelt runoff was imminent. However, Logan City was prepared in 2017 with 3,048 feet of 4-foot Muscle Wall and 540 feet of 2-foot Muscle Wall to install along all of the at-risk areas of their river banks.

As per the recommendation from representatives from Muscle Wall, Logan River Golf Course utilized the chain method when deploying the liner over their Muscle Wall. When Muscle Wall is installed on a levee or bank it is highly recommended to use this method of liner deployment because it eliminates the need for any sandbags to hold down the liner as well as protects the inside of the riverbank from erosion due to the increased water current.

Location:
Logan, Utah

Installation Date:
June 2017

Products Used:
4-Foot Muscle Wall
2-Foot Muscle Wall

Technical Description:
• Units used 508 4-foot walls
90 2-foot walls
• Distance 3,588 feet



2011



2017

