

## Demo Test Site 5

**MULCHING FOR SUN PROTECTION** | Tennessee Dept. of Transportation, Highway 109, Tennessee

### The Challenge

On many sites, dealing with summer sun can be an issue when establishing vegetation. In the summer months, west-facing slopes can experience increased moisture loss and decreased vegetation growth compared to east-facing ones. On construction sites, this can lead to poor vegetation performance of west-facing slopes. The construction of Highway 109 cut through a hilly area leaving highly erodible slopes of varying lengths and gradients along both sides of the road.

### The Installation

The Tennessee DOT applied HydraCX<sup>2</sup> mainly for slope erosion protection, but also as a means of retaining moisture and regulating temperatures on the slopes that are in direct summer sun. The slopes varied in gradients up to 2.5:1 and slope lengths up to 150 ft. In addition, the cut slopes were very poorly graded, and consisted of poor sub-grade soils. HydraCX<sup>2</sup> was applied at a rate of 3500 lbs/acre (top photo). Opposite slopes were applied with a wood hydromulch for comparison. This product was also applied at a rate of 3500 lbs/acre.

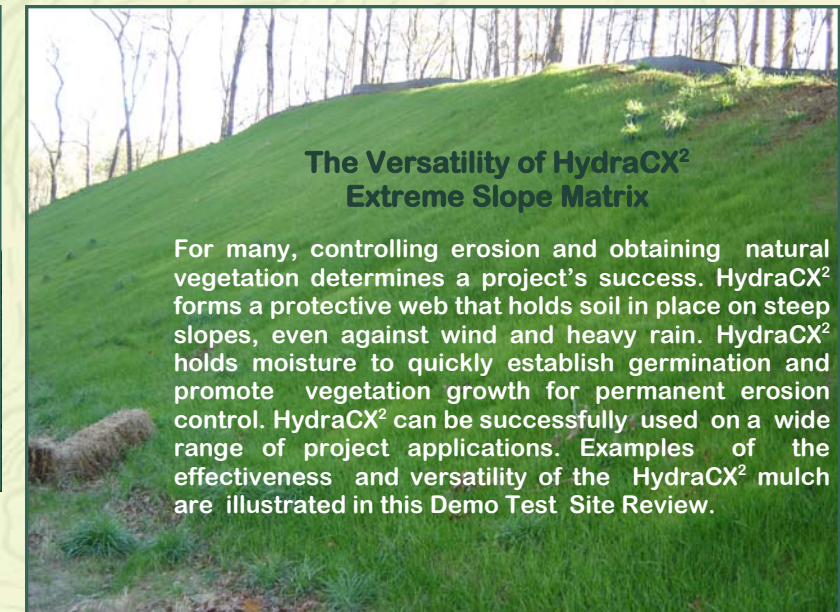
### The Results

The area protected with HydraCX<sup>2</sup> experienced grass growth quicker, with vegetation appearing 3-4 days sooner than the area treated with a wood hydromulch. After about two of weeks grow-in, the difference in vegetation coverage was even more noticeable. After several rain events, no erosion was visible on the slopes where the HydraCX<sup>2</sup> mulch was applied. Due to the performance of HydraCX<sup>2</sup>, the TNDOT has added HydraCX<sup>2</sup> to its approved products list as an equal to Type I and II erosion control blankets.



## High-Performance Hydraulic

## Mulch



### The Versatility of HydraCX<sup>2</sup> Extreme Slope Matrix

For many, controlling erosion and obtaining natural vegetation determines a project's success. HydraCX<sup>2</sup> forms a protective web that holds soil in place on steep slopes, even against wind and heavy rain. HydraCX<sup>2</sup> holds moisture to quickly establish germination and promote vegetation growth for permanent erosion control. HydraCX<sup>2</sup> can be successfully used on a wide range of project applications. Examples of the effectiveness and versatility of the HydraCX<sup>2</sup> mulch are illustrated in this Demo Test Site Review.

North American Green is a leading erosion and sediment control solutions provider with a worldwide network of qualified distributors with trained Erosion Solutions Specialists. In addition to offering a full line of erosion and sediment control products, North American Green's Erosion Solutions Specialists are trained to provide site-specific project design and product specification assistance using North American Green's Erosion Control Materials Design Software (ECMDS®).

To learn more about North American Green's HydraMatriCx line of high-performance hydraulic mulches or to arrange an on-site demo, contact your North American Green Erosion Solutions Specialist at 1-800-772-2040.



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BECAUSE the EARTH isn't FLAT



## Demo Test Site 1

**STEEP SLOPE** | Alabama Dept. of Transportation, Birmingham, Alabama

### The Challenge

A highway extension through very hilly terrain left this Alabama Department of Transportation project with unprotected long, steep fill slopes. The conditions on site included steep 1.5:1 (H:V) slopes with 80 ft vertical change and a slope face reaching approximately 144 ft in length.

### The Installation

The Alabama DOT tested several products on this site including a single net straw erosion control blanket, HydraCX<sup>2</sup> Extreme Slope Matrix, blown straw with polyacrylamide, and blown straw alone. HydraCX<sup>2</sup> was applied at a rate of 4000 lbs/acre while the other plots followed product recommendations. The entire site was seeded in early spring with a standard summer grass mix.

### The Results

The area applied with HydraCX<sup>2</sup> germinated and established a greener, thicker stand of grass quicker than the other demonstrated products (HydraCX<sup>2</sup> on left side of slope in top photo). All products produced a stand of vegetation throughout the spring and summer. In August, a large rain event resulted in substantial water flows over the test plots. The well established vegetation washed off the entire site – except for the portion where HydraCX<sup>2</sup> was applied (bottom photo, left). Because HydraCX<sup>2</sup> established thick vegetation with a deeper root system, the vegetation outcome was able to hold impressively on this portion of the slope during the strong storm event.



## Demo Test Site 2

**PERMANENT SEEDING** | Illinois Dept of Transportation, Decatur, Illinois

### The Challenge

This shoreline demonstration project facilitated by the Illinois DOT was challenged with the need for an erosion control product that would protect the shoreline slopes until permanent vegetation could be obtained. The erosion control measure needed to be non-toxic because of the run-off water discharging into the lake. The product also needed to provide protection for at least 6 months through the winter.

### The Installation

The ILDOT applied different hydraulically-applied mulches on site including HydraCX<sup>2</sup> made with a proprietary blend of straw, reclaimed cotton plant material, tackifiers and polymers, as well as wood fiber hydromulches. The seed and soil amendment rates were the same for both types of products, and the application of mulch treatments were measured and monitored by the product suppliers.

### The Results

After several months of growth, the plot applied with HydraCX<sup>2</sup> had completely vegetated. The dense permanent vegetation was strong enough to protect the slopes from the lakes fluctuating water levels (top photo). The wood fiber hydromulches that were applied to the other plots did not encourage the same lush growth as HydraCX<sup>2</sup> plots (bottom photo).



## Demo Test Site 3

**ARMORING FOR WINTER** | Illinois Roadway Project, Chicago, Illinois

### The Challenge

Securing construction sites from erosion during winter months can be a challenge. This roadway project was in mid-construction when winter set-in. Unable to establish winter vegetation because of poor sub-grade soils and issues with resuming spring earthwork, the contractor was in need of a winter temporary armoring solution.

### The Installation

The site was applied with HydraCX<sup>2</sup> at 3000 lbs/acre with no seed added to the mix. The high-performance tackifiers in HydraCX<sup>2</sup> helped hold and bind the soil during the winter months. The site was sprayed in late November.

### The Results

After 4 months of winter protection, HydraCX<sup>2</sup> was still protecting the site from erosion. This was even after four freeze-thaw cycles and multiple snow melts. The contractor was pleased with the ease of applying HydraCX<sup>2</sup>, the way the mulch held up over winter, and how they are now prepared to start spring construction right where they left off.



## Demo Test Site 4

**REVEGETATING POOR SOILS** | North Carolina Dept. of Transportation, Murphy, NC

### The Challenge

The relocation of Highway 64 resulted in steep slopes with loose seed beds. In addition, early soil testing on the area concluded that the site had a high percentage of acid rock. This highly acidic soil type required a heavy application of lime to make the site suitable for establishing vegetation. In general, the main erosion issues on the site were steep 1.5:1 (H:V) slopes ranging in length up to 120 ft, and highly erodible soils.

### The Installation

After track walking the slopes, approximately two tons of agricultural lime was applied to the prepared seed bed to help mitigate the effects of the acidic soil. HydraCX<sup>2</sup> was then applied to the slope surfaces at an application rate of 3000 lbs/acre (top photo). The first HydraCX<sup>2</sup> application started in July and continued through the end of summer.

### The Results

Even with an exceptionally dry summer, grass growth was seen within one week of the application of HydraCX<sup>2</sup>. The Environmental Field Operator with NCDOT stated that grass growth was 25-30% denser (bottom photo) than other wood hydromulches they had previously used. In early fall intense storms eroded unprotected slopes, but the HydraCX<sup>2</sup>-treated slopes held. The results from this project site has led the NCDOT to approve HydraCX<sup>2</sup> in its state specifications. For additional information regarding this project refer to an article in [Land and Water Magazine](#), Nov. /Dec. 2007.

