



CASE STUDY

FODS & GROUND PROTECTION MATS

THE BIG DRY CREEK SEWER IMPROVEMENTS PROJECT - WESTMINSTER, COLORADO

BACKGROUND

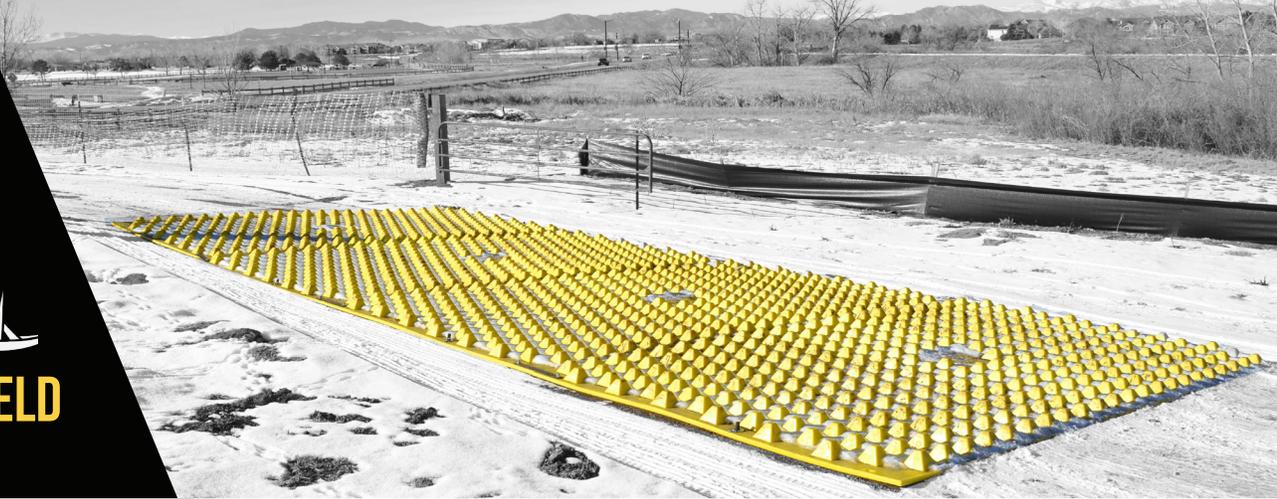
Located in the northern suburbs of Denver Metropolitan Area, the City of Westminster established a wastewater system that encompasses 29.8 square miles and contains both the Little Dry Creek and Big Dry Creek sewer basins. Originally built in the 1970s, the Big Dry Creek Interceptor Sewer (BDCIS) continues to provide service to the city's 112,000 residents. In 2018, the sewer system met capacity resulting in the city council's year long moratorium on new development feeding into it. Knowing sanitary sewage overflow can cause environmental problems that have major impacts on public health and safety, the city conducted comprehensive studies to understand the needs of the community that would be affected by the sewer system reaching capacity. These studies conducted in 2012, again in 2015 and later updated in 2018, informed projections of future flow condition loading and water consumption. The modeling data was used to determine that the city of Westminster needed major improvements to increase capacity of the pipelines throughout the city.

The \$32 million dollar improvement project would take place on 14 miles of the Big Dry Creek Interceptor Sewer (BDCIS). The improvements were grouped into eleven project areas. The longest sections between 104th Avenue and Sheridan Boulevard were repaired to address low flow capacity where the tributary interceptors met the main BDCIS line. This segment of the BDCIS currently consists of single a 6,190 foot single 30-inch diameter pipeline. A new 30-inch pipe with a cured-in-place liner will be installed alongside the existing 30-inch interceptor to increase capacity. The project, with expected completion in 2022, will result in safer sewer services and reduced risk of overflow. These improvements will provide a resilient infrastructure which will be ready for additional capacity from future developments.

STORMWATER BMPS AND SURFACE WATER QUALITY

The impervious surfaces throughout the Big Dry Creek Sewer Service Area introduce a risk for construction operations to cause sedimentation to surface waters. Excavation of pipes and associated increased construction traffic on temporary access roads can result in excessive sedimentation of surface waters from soil, debris, and PM10 particles entering nearby water sources. One area in particular that can introduce sediments





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STORMWATER BMPs AND SURFACE WATER QUALITY (continued)

into surface waters, is the sediment tracked by construction vehicles onto impervious roadways which is then washed into stormdrains. To protect the water sources, the design engineers carefully crafted a Stormwater Management Plan during the planning stages of the project. This Stormwater Management Plan (SMP) which outlines pollution sources and mitigation techniques that will guide the construction activities through to completion. Best management practices (BMPs) and engineering controls are implemented during construction to avoid and minimize erosion, sedimentation, and pollution impacts on water resources and minimize impact and contamination to prairie areas. Using these techniques the construction operation will minimize the impact to the 17 stream segments (Big Dry Creek and its tributaries), perennial streams, and 22 wetlands that are within the scope of the project.

FODS VEHICLE TRACKING PAD SYSTEM

Throughout the project, the City of Westminster implemented multiple FODS Trackout Control Mat systems as the Vehicle Tracking Control BMP. The mats work to prevent tracking sediment, debris, and PM10 particulates impermeable roadways where they can wash into stormdrains. The entrances were throughout residential areas and on towards staging areas to prevent contamination of the prairie surrounding the project areas.



FODS Trackout Control Mats contain rows of alternating pyramids that pry open tire tread causing mud, foreign matter, and debris to collect into the base of the mat before vehicles exiting or entering a construction site. The mats can be relocated and reused and will continue to prevent trackout and fugitive dust from entering the Big Dry Creek stormwater system throughout the project. Compared to traditional techniques, this system is more effective, and easier to relocate enabling the project to stay compliant as the work progresses.

SITE ACCESS MATS USED FOR VEHICLES AND PEDESTRIANS

Parts of the sewer system also run below the Ranch Country Club, a 150 acre golf course, and construction vehicles need to access these pipes by driving across the greens. During the project, some areas became



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SITE ACCESS MATS USED FOR VEHICLES AND PEDESTRIANS (continued)

saturated and unstable. A common temporary solution is to use plywood sheets to distribute the weight of vehicles and pedestrians and create an access road. One disadvantage is that plywood is weakened after absorbing water resulting in breaking, which results in the need for frequent replacements and maintenance. A water resistant alternative was needed as a long term solution.

FODS Ground Protection Mats were used on the Ranch Country Club to provide a temporary access road preventing vehicles from sinking into the course. The HDPE mats do not absorb water and can be used in any weather conditions. This cost effective way to build temporary access roads requires little maintenance and can be used to provide access to vehicles, equipment, skid steers, and foot traffic. The mats are durable and can be used on multiple projects over the 10+ year lifespan of the product.

ABOUT FODS, LLC.

Based in Englewood Colorado, FODS Trackout Control System replace ineffective and costly traditional rock stabilized construction entrances, saving you valuable time and money. Our proprietary mat design works to effectively remove mud and sediment from your vehicle tires without damaging the tire or the ground's surface. We provide the only durable, reusable, and environmentally friendly trackout control system currently available on the market. FODS Trackout Control Mats are 100% Made in the USA, are reusable and recyclable.

