



# CENTRAL LANDFILL - RI

## MSW LANDFILL

### LOCATION

Johnston, RI

### OWNER

Rhode Island Resource Recovery Corporation (RIRRC)

### ENGINEER

Rhode Island Resource Recovery Corporation (RIRRC)

### SIZE

18 Acres

### DATE COMPLETED

August 2017

### PROJECT DESCRIPTION

Central Landfill is a state-of-the-art landfill facility in Johnston, Rhode Island, that provides disposal service to about 97% of the state's residents. Owners' Rhode Island Resource and Recovery Corporation (RIRRC) chose ClosureTurf® to cap Phase IV of the Landfill addressing several landfill closure issues with a single solution.

Central Landfill is approximately 290 acres and receives around 3,800 tons of trash a day. Although three phases have already been closed with a vegetated cap, ClosureTurf was selected as the closure method for Phase IV to help eliminate some of the challenges and provide extra performance benefits.



The ClosureTurf used on Phase IV eliminates erosion and stays green all year round.



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HydroBinder® was easily integrated into the existing storm water management system where high velocity runoff is collected and funneled to the appropriate place.



ClosureTurf with HydroBinder cementitious infill protects channels against tough weather conditions.



Central Landfill plans to feature a Watershed Geo solar array system that utilizes slope technology for maximum output. A demo of panels was installed in February 2019.

It takes a large crew to run daily operations at a landfill as large as Central. In a given day, around 1,000 trucks can leave and enter. One of the biggest advantages to crews is that ClosureTurf eliminated maintenance activities like mowing, seeding and fertilizing on Phase IV. It also allowed for an additional 2.5 feet of airspace extending the life of the landfill.

Other benefits ClosureTurf provided is that it easily integrated into the existing storm water management features and gas collection systems of previously closed phases. In the case of an emergency shut down, gas relief valves were placed one per acre to reduce gas pressure buildup under the ClosureTurf system.

Compared to traditional vegetated caps, the engineered synthetic turf system provided great stability and erosion control by protecting the landfill from storm water and extreme weather conditions. The harsh coastal New England weather consisting of windstorms, blizzards, nor'easters and freeze/thaw presents many challenges to keeping soils stable. ClosureTurf eliminates those challenges.

Storm water runoff is cleaner as the water is free of soil and containments. This helps prevent sediment clean-out in retention ponds and ultimately cleaner runoff entering local waterways. The storm water channels are lined with a hard armor HydroBinder® cementitious material so they can handle higher hydraulic velocities without damage to the liner such as cracking or sinking.

ClosureTurf also provides an ideal foundation for a future solar array. It eliminates vegetative maintenance, reduces soiling from clippings and dust and improves access for O&M. The RIRRC plans to install Watershed's newest non-penetrating direct attachment technologies for top decks and slopes in the near future.