

Ontario's Soccer Complex Uses Advanced Stormwater Technology

Soccer Enthusiasts Head to Newly Constructed Fields

The Situation

Centrally located in the heart of Southern California, Ontario enjoys over 300 days of sunshine with an average temperature in the low 80's. It is nearby all California has to offer; from the mountains and sandy desert to miles of beautiful beaches. This "Model Colony", given its name because of the perfect balance between agriculture and urban comforts, is home to Southern California's Ontario Mills Mall, which hosts fabulous shopping, gourmet restaurants, and top entertainment, as well as a "Green" Convention Center, international airport and its own California Motor Speedway.

A few years back the city began talks of a 20 acre facility consisting of seven soccer fields; two full size synthetic turf fields, one full size grass field, two midsize turf fields, and two small grass fields. The artificial turf looks and feels like grass, but does not require the large amounts of water, fertilizer or maintenance that grass does. The facility will also include picnic tables, a concession stand, restrooms, landscaped pathways, field lighting to accommodate night play, and almost 400 parking spaces. The location is just north of SR 60 between Vineyard Avenue and Archibald Avenue on Philadelphia Street.



The projected cost of this project was close to \$15 million, but came in just under \$11 million. Plans began in 2006 but didn't break ground until beginning 2008. In order for the City to be in compliance with stringent stormwater regulations and lead the county in innovative environmental solutions they partnered up with Modular Wetlands.

The Challenge

The City of Ontario has been incredibly proactive in improving water quality for its city and surrounding areas. Constructing this field was no exception. The city wanted to use a non proprietary natural treatment system such as a bioswale but after careful examination realized its limitations. Space constraints were only one hindering factor.

Implementing a bioswale for this size project would require several hundred linear feet; feet that they didn't have. Drainage from the property flowed to the backside of the lot which was adjacent to the freeway. This area is also where a large majority of the parking spaces would be located. With this many fields, the city knew that an abundance of parking would be necessary.

Another factor for concern was the heavy pollutant load this site would generate. With seven soccer fields, a concession stand, picnic areas and 400 parking spaces this complex would be-

About Modular Wetlands

A new and revolutionizing product from Bio Clean is the Modular Wetland System (MWS). This system is the industry's first hybrid stormwater treatment system. While most systems utilize a single treatment method, the MWS incorporates a combination of many. It removes trash, floatables, oil and grease, sediments, heavy metals, nutrients and bacteria. Perfect for GREEN design and sustainable projects. For more information on MWS visit www.modularwetlands.com.



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come a very high traffic area. Under Phase II of the National Pollutant Discharge Elimination System all of these pollutants generated by normal activity on the site would need to be addressed.

These common pollutants include bacteria, heavy metals, nutrients, oil and grease from the parking lot, pesticides from the lawns and pathways, carelessly discarded trash, such as cigarette butts, candy wrappers, and bottles and cans from picnic areas. Questions were raised as to whether or not a bioswale would be able to handle such a heavy pollutant load. This type of design wasn't going to provide the heightened treatment that Steve Wilson, City of Ontario's Environmental Water/Wastewater Engineer, wanted.

The Solution

A total of eight Modular Wetland Systems – Linear (MWS – Linear) were used to treat this facility. A combination of both the Curb and Grate Type were used throughout the perimeter of the parking lot to treat polluted runoff. The installation took place in September of 2008, but it wasn't until the late spring of 2009 that the landscape was finished and the plants were added to the systems.



The original plans called for eight regular curb type catch basins and a hydrodynamic separator at the end of the line which then discharges into the channel. Because of more stringent regulations, this type of treatment wasn't preferable. Steve Wilson contacted Zach Kent, Design Engineer, with Modular Wetlands to brainstorm other possible solutions.

"This was an easy fix", said Zach Kent. "We could use the eight existing catch basins and replace them with the Modular Wetlands System (MWS). The MWS has an internal high flow bypass which would eliminate the need for a second catch basin to collect/capture the high flows." Some of the other similar filtration systems on the market don't provide the internal high flow bypass which means a second catch basin would need to be installed downstream. This leads to higher costs.

Another advantage of the Modular Wetlands System is the way in which the system collects flows coming in either direction, whereas the 'other' systems can only collect flows coming in one direction due to the high flow bypass catch basin located on the opposite side.

The Result

"The Modular Wetlands stormwater treatment system was selected for the City of Ontario's new Soccer Complex project due to its ability to provide 'stand alone' full spectrum treatment of all parking lot pollutants, including Suspended Solids, Oil & Grease, Litter & Trash, Nutrients, Pesticides, Bacteria and Metals (dissolved and particulate) in storms up to the 85th percentile event," said Steve Wilson, City of Ontario.

Using the Modular Wetlands System not only provided the heightened treatment but was also a huge cost advantage over other similar treatment devices. Using the Modular Wetlands System saved the City of Ontario \$50,000 plus over other similar treatment devices because no additional catch basins were needed.

"The customer support staff at Modular Wetlands were very friendly, helpful, knowledgeable and experienced in design, installation and maintenance of their product," expressed Steve Wilson.



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