



Green Infrastructure & Stormwater Management CASE STUDY

San Joaquin Marsh and Wildlife Sanctuary

Location: Riparian Way, Irvine, CA

Client: Irvine Ranch Water District

Design Firm(s): RJM Design Group Inc.

Landscape architect/Project contact: Larry Ryan, ASLA

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ASLA Chapter: Southern California



Project Specifications

Project Description: The Marsh Enhancement Plan involved extensive revegetation, removal of non-native species, and the addition of interpretive trails, boardwalks, and overlook areas to view a large variety of waterfowl and wildlife that exist within the San Joaquin Marsh and Wildlife Sanctuary.

The wetlands are a critical component of Irvine Ranch Water District's (IRWD) Natural Treatment System, as they naturally clean urban runoff from San Diego Creek and help to protect the environmentally sensitive Upper Newport Bay. After interacting with the bulrush and other plants for seven to ten days, up to 70 percent of the nitrogen is removed. The cleaner water is returned to the creek to continue its journey to Upper Newport Bay and the ocean. The

Natural Treatment System (NTS) Master Plan, includes a series of 31 satellite treatment wetlands established throughout the San Diego Creek Watershed. The NTS was modeled after the successful wetlands restoration program at the San Joaquin Marsh. The San Joaquin Marsh and Wildlife Sanctuary now works in concert with the NTS and is the last stop in the watershed for urban runoff before it reaches the Upper Newport Bay and eventually returns to the Pacific Ocean.

In January 2009, the San Joaquin Marsh Campus opened to the public. The Former Duck Club site, once home to two duck hunting clubs, is now available for public meeting use. The San Joaquin Marsh Campus consists of historic Irvine ranch houses that were relocated and oriented for better spatial relationships and public access. Curvilinear decomposed granite trails provide easy pedestrian access. The campus plan incorporates sustainable concepts, such as recycled plastic composite materials for outdoor deck space, porches, ramps and site furniture, native plant material, recycled water, decomposed granite pavement, permeable gravel parking lot, and low level lighting to reduce night time light pollution. The campus includes the Visitors Center at the Marsh House, the Learning Center, the Sea and Sage Audubon House, the Duck Club and the Caretaker's Cottage.

Project Type:

Other (please specify)

A retrofit of an existing property

Design features: Bioretention facility and bioswale.

This project was designed to meet the following specific requirements or mandates:

Local ordinance



Impervious area managed: less than 5,000 sq/ft

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 1 acre to 5 acres

The regulatory environment and regulator was supportive of the project.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Local)

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site

design/development project: The San Joaquin Marsh & Wildlife Sanctuary encompasses over 300 acres of coastal freshwater wetlands, half of which have been restored to a natural state. The remaining acres are quality habitat and are not in need of restoration. Set within residential neighborhoods, business centers, a university and a bustling city, the Marsh attracts visitors with its sense of quiet refuge in an urban setting.

Number of jobs created: Not available

Job hours devoted to project:

Planning and Design: Not available

Construction: Not available

Annual Maintenance: Not available

Performance Measures

Community & economic benefits that have resulted from the project: The San Joaquin Marsh and Wildlife Sanctuary is an oasis of tranquility, offering a beautiful setting for children of all ages to experience nature. The abundance of programs offered at the Marsh educate school-age children, college students, teachers, and the general public on the importance of preservation, recycling, environmental responsibility, and conservation of our natural resources not only today, but for future generations. The San Joaquin Marsh serves as an outdoor living laboratory for students, teachers and the public and provides valuable habitat for more than 200 species of birds, plus other wildlife, such as bobcats, rabbits and coyotes. Nearly two-thirds the size of New York City's Central Park, the San Joaquin Marsh & Wildlife Sanctuary has become one of Southern California's most notable nature respites.

Project Recognition

The International Making Cities Livable - Child-Friendly Communities - 2010

Additional Information**Links to images:**

http://www.rjmdesigngroup.com/projects/open_space/san_joaquin_marsh.html