



Green Infrastructure & Stormwater Management CASE STUDY

Hockinson Meadows Community Park

Location: Clark County, WA

Client: Vancouver-Clark Parks and Recreation

Design Firm(s): Walker Macy

Landscape architect/Project contact: Jean Akers, ASLA

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ASLA Chapter: Washington



Project Specifications

Project Description: Hockinson Meadows Community Park is a 240 acre park developed as part of the Greater Clark Parks District program. This unique community park fulfills the mission statement of Vancouver Clark Parks and Recreation by integrating a healthy community park with the natural environment that supports active programmed sport activities and unstructured play with supporting park amenities. Designers were able to protect and preserve existing wetlands and wetland buffer areas consisting of nearly half of the site (+/-105 acres). The park crafts an outstanding user experience using a careful balance of well-sited fields, trails, parking, picnic shelter, playground and support facilities that are surrounded by natural areas now restored after decades of disturbed ecological function. The sand-based turf fields are raised on a platform of well-drained soils designed to filter any nutrients not captured and consumed in the turf grass. Stormwater filter strips surround all athletic fields to add further filtering in the chain of surface water treatment before entering existing and created wetlands and eventually draining to the historic agricultural drainage structures. Parking lot runoff is directed into bioswales for pretreatment before flowing into additional vegetated filters. The surrounding natural fields and forest are under a strict natural management program to ensure long-term and appreciating ecological value to prevent any impacts within the Lacamas Creek watershed.

Project Type:

Open Space-Park

Part of a new development

Design features: Bioretention facility, rain garden, and bioswale. The sand-based turf fields are raised on a platform of well-drained soils designed to filter any nutrients not captured and consumed in the turfgrass.

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

State statute, county ordinance, to meet funding criteria, developer/client preference

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 5 acres. More than half of the 240 acre site was protected and preserved as wetlands and wetland buffers. The design took an innovative approach to treating stormwater from the developed portion of the site was by collecting and treating stormwater from the sports fields, roads, and parking lots in bio-swales, rain-gardens and infiltration trenches. The stormwater was then allowed the water to enhance the sensitive wetland areas instead of conveying it to the municipal stormwater system.

The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? It was very important to Vancouver-Clark Parks and Recreation to integrate a healthy community park with the natural environment that supports active programmed sport activities and unstructured play with supporting park amenities. The park design crafted an outstanding user experience using a careful balance of well-sited fields, trails, parking, picnic shelter, playground and support facilities that are surrounded by natural areas now restored after decades of disturbed ecological function.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: State, local. Hockinson Meadows Community Park was developed as part of the Greater Clark Parks and Recreation District.)

Related Information: Estimated stormwater costs for Hockinson Meadows Community Park are approximately \$75,000 for labor and equipment with materials an additional \$75,000. An additional \$500,000 was spent creating new and preserving and enhancing existing sensitive wetlands, wetland buffers, and native vegetation areas that characterize the park.

Was a green vs. grey cost analysis performed? Yes. Traditional stormwater management practices of collecting stormwater runoff in a municipal stormwater system or detention ponds was simply not practical for Hockinson Meadows Community Park due to the large amount of imported fill required.

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

design/development project: Wetland determination and delineation and habitat assessments were a small portion of the additional time and money associated permitting a community park on a sensitive site. The design, engineering and construction costs were slightly higher to design systems to not only preserve but to also enhance existing wetlands, buffers, vegetation and natural areas. The green design approach facilitated permitting approvals saving time in project development.

Cost impact of conserving green/open space for stormwater management over

traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings). The costs of the environmentally sensitive approach to sports field drainage system, bioswales, rain gardens and infiltration areas that help the park preserve and protect the 105+ acres of sensitive natural areas was more than offset by the cost of what imported fill materials and infrastructure costs that traditional development would have been.

Number of jobs created: 80

Job hours devoted to project:

Planning and Design: 2,500

Construction: 5,000

Annual Maintenance: 10,000

Performance Measures

Community & economic benefits that have resulted from the project: The community benefits of the community park are extensive. Enhancements to the site include:

- Eight Little League ball fields (some of these fields will also be used for soccer in the fall)
- Playground area with equipment
- Walking, jogging and biking paths
- Picnic areas including one covered picnic shelter
- Restroom facilities
- Parking lots
- Preserved and enhanced wildlife habitat areas
- Stormwater treatment facilities
- Wetland mitigation and enhancement

Park users, sports fields , picnic shelters, construction and maintenance jobs and environmental protection and enhancement bring economic benefits to Vancouver-Clark Parks and Recreation, the sports leagues area business and many others.

Project Recognition

Washington Recreation and Parks Association

Additional Information

Links to images: <http://www.clarkparks.org/projects/hockinson.htm>

Vancouver-Clark Parks and Recreation Department strives in all their park development projects to use sustainable design techniques that include green infrastructure principles. Additional photos of the project and its special features are available upon request.