



Green Infrastructure & Stormwater Management CASE STUDY

Half Moon Park

Location: Liberty Lake, WA

Client: Greenstone Corporation

Design Firm(s): Greenstone Corporation
(staff landscape architect)

Landscape architect/Project contact:
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Project Specifications

Project Description: The global, never ending cycle of evaporation, precipitation, infiltration and runoff known as the hydrological cycle is a well-known natural phenomenon. Surface water and groundwater are constantly being replenished. Evaporating from the Pacific, moisture is carried over the Cascades and across Central Washington, eventually pushing up against the Bitterroot Mountains of North Idaho and dropping as rain or snow, running off into the areas lakes and rivers or percolating into the vast Spokane-Rathdrum Prairie aquifer.

The runoff passes through Liberty Lake's River District in two ways; one as the Spokane River and the other as the part of the aquifer. The river and aquifer are as interconnected as a part of the hydrological cycle with interchange between the two depending on season and river levels. At every point in the cycle water is in constant motion, returned to the atmosphere as water vapor, carried aloft to fall again and again as snow or rain. The site specific component of the hydrologic cycle is the collection of stormwater from the walks and roads, carrying this runoff to landscape areas for removal of pollutants and return to the aquifer or aloft through transpiration by the plant materials in the swale areas. The integration of this precious cycle in the everyday lives of residents provides a key link to the dynamic forces that shape our world on a global scale. These forces include the sun, wind, rain and the earth.

Half-Moon Park is designed to reveal, amplify and engage these forces through the design of the park and integration of the stormwater collection, treatment and infiltration into the design of the park. The integration starts with the collection of the stormwater from the surrounding neighborhood and transporting it via pipes into the park. Listening tubes provide auditory

access to the sounds of water rushing, trickling and dripping through the pipes in unexpected areas of the park. These listening tubes mark the path of the stormwater pipe, connect the rest of the park to the outlet into the swale, and draw visitors into the park to discover the source of the sounds and thus the cycle of water itself. The listening tubes also function as a communication device for adults and children to shout into the stormwater system and communicate down stream to track the path of the pipe. The central feature of the park is gathering area that is located at the nexus of the 30" storm pipe path and the central walkway of the park. This plaza extends to an overlook, drawing visitors to the outlet of the 30" and other stormwater pipes. The experience at the overlook is dynamic in nature and reflects the full range of the hydrologic cycle, from rushing water in the spring to the trickle from sprinklers and car washes in summer. The sounds of the water foreshadow the discovery by visitors of the Spokane River to the north.

The landscaping includes ornamental grasses that respond to the seasons with color and texture, movement with the winds of spring and winter. Evergreen and deciduous trees shape and define spaces for activities and contemplation while their location reflects proximity to water and moisture. The park, as the world, is an integrated and interconnected part of the neighborhood, region and world through the interplay of water, wind, sun and earth.

Project Type:

Open space - park with integrated stormwater management for single family residential
Part of a new development

Design features: Rain garden and bioswale.

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

County ordinance, local ordinance, 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: 5,000 sq/ft to 1 acre

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? Developer required stormwater facility be fully integrated with usable open space.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$50,000-\$100,000 (Public funding: Not available)

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: Integration of stormwater management facilities into the park was critical to providing recreational opportunities and a multi-use facility for the neighborhood. Stormwater infiltration in a climate with only 17 inches of precipitation per year offers an opportunity to achieve stormwater quality and quantity management in a park setting that allows recreational uses.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly reduced costs (1-9% savings). Integrated multi-function park spaces reduces land requirements for stormwater management facilities while allowing recreational uses.

Number of jobs created: Not available

Job hours devoted to project:

Planning and Design: 200

Construction: 560

Annual Maintenance: Not available

Performance Measures**Stormwater reduction performance analysis:**

100% of stormwater retained on site and infiltrated.

Community & economic benefits that have resulted from the project: Half Moon Park is used by the neighborhood for gatherings and events. The infiltration area is used for showing movies during the summer as an informal amphitheater.

Project Recognition

City of Spokane Mayor's Award

Additional Information

Links to images: http://www.spokaneplanning.org/2009_Award_winners.html