



# Green Infrastructure & Stormwater Management CASE STUDY

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## Nancy Street Wetland Enhancement

**Location:** Juneau, AK

**Client:** City and Borough of Juneau

**Design Firm(s):** Not applicable

**Landscape architect/Project contact:** Michele Elfers, ASLA

**Email:** [Michele\\_Elfers@ci.juneau.ak.us](mailto:Michele_Elfers@ci.juneau.ak.us)

**ASLA Chapter:** Alaska

### Project Specifications

**Project Description:** A 1950s gravel extraction pit had become a collection area for surrounding stormwater and groundwater covering four acres in a residential neighborhood. The pond flowed into Duck Creek, a salmon stream, and contributed turbid water, high levels of iron floc and low levels of dissolved oxygen to the stream. This project added clean fill material to create benches and varied habitat for fish, wildlife, and wetland vegetation to immobilize the iron floc, increase dissolved oxygen and improve the water quality. An interpretive trail winds through the wetland to educate the community on the wetland functions.

**Project Type:**

Open space - park

Part of a new development

**Design features:** Constructed wetland.

**This project was designed to meet the following specific requirements or mandates:** 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:** 1 acre to 5 acres. The above questions are difficult to manage as the impervious area was the surrounding neighborhoods that contributed to the pond. No work was done in these surrounding neighborhoods. The new wetland was converted to CBJ park space.

**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?** Designer and client the same - municipal government. Interest in public education, trail and park experience to increase support and understanding of wetland functions and value.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** \$100,000-\$500,000 (Public funding: Federal, state, local)

**Related Information:** \$31000 materials \$129000 labor All plants were salvaged and transplanted from local sources.

**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 fill material that was used to create the wetland came from the excavation for a new high school a few miles away. The fill material would have been sent to a permitted waste fill site that carried a per cubic yard fee. The city saved \$250,000 on the high school project by utilizing the waste fill for the wetland.

**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). See above.

**Number of jobs created:** 1

### **Job hours devoted to project:**

Planning and Design: 350- est  
Construction: 1400 - est  
Annual Maintenance: 20

## Performance Measures

### **Stormwater reduction performance analysis:**

Not applicable

**Community & economic benefits that have resulted from the project:** The wetland trail is a popular public amenity. The neighborhood has taken ownership over the wetland and picks up garbage and maintains the area. Adjacent vacant lot will be sold for development.

## Project Recognition

Published Article in Land and Water Magazine

## Additional Information

Links to images: <http://www.juneau.org/engineeringftp/engprojects.php>

The project was a collaborative effort throughout the planning, design and construction phases with participation of city and federal stakeholders as well as community participation.