

City & Borough of Juneau “Storm Water Management Development”

FY02 Grant Award: \$72,000

Project Match: \$48,000



Description and Purpose:

Five salmon streams within the developed area of Juneau are highly impacted by storm water runoff. These include Duck Creek, Jordan Creek and Peterson Hill Creek in the Mendenhall Valley Watershed, and Lemon Creek and Vanderbilt Creek in the Lemon Creek Watershed. One of the most effective actions to restore water quality in these streams and to protect other streams from a similar fate is to effectively manage the flow and quality of storm water. Although the City and Borough of Juneau (CBJ) is currently not required to comply with Phase II of the EPA Storm Water Regulations for Municipal Separate Storm Sewer Systems, the CBJ is in the process of developing a storm water management program that will protect water quality and control flooding.



The first phase towards achieving this goal is to develop accurate maps of the existing topography and storm water system. Much of Juneau’s storm water flows through natural drainage features rather than through constructed storm water sewers. Current topographic maps at a scale of 20-foot intervals cannot be used to adequately identify storm water flows or accurately map storm water management infrastructure. The first phase of this project will use Light Detection and Ranging (LIDAR) technology that is currently being used by the U.S. Forest Service to map watersheds in the Tongass National Forest, to develop an accurate (approx. 2-foot contour) map, and to identify storm water flows. The accurate LIDAR generated map will be used as a base map in CBJ’s Geographic Information System (GIS). Storm water structures such as inlets, catch basins, outfalls and piping will be accurately located and described by field crews using a precision Geographic Positioning System (GPS). This infrastructure information will be input into this new GIS base map.



Most of this work was performed under a grant during FY 2001. The Storm Water GIS system will not be fully operational 2002. The second phase of this project will fully develop the mapping system and will implement a program to monitor water quality at storm water discharge locations. Water quality monitoring will identify locations where

pollutants are entering water bodies from storm water discharges so that these “hot spots” can be targeted for corrective action. Phase II of this project will be conducted in Fiscal Year 2002.

The second phase of this project will also include developing a Water Body Assessment for Jordan Creek. This assessment would evaluate stream flow and water quality issues. A final report consisting of identification of problem areas, recommendations for improvements, and the identification of funding sources for implementing the improvements to be used to solve water management issues in Jordan Creek.

Environmental Benefit and Evaluation Process:

The success of this project will be measured by the usefulness of having an accurate GIS map of Juneau’s storm water system. The utility of the storm water maps cannot be assessed until after the project is completed. The ultimate environmental benefit will be a reduction in polluted runoff – primarily sediments, and improvements to ambient water quality as measured through continuation of the monitoring program. The improved GIS system will facilitate future land use planning to prevent pollution from storm water runoff.

The success of the Jordan Creek Water Body Assessment will be measured by the usefulness of the evaluation and recommendations in developing the Water Body Recovery Plan and TMDL. The environmental benefit will be a reduction in sediment and dissolved oxygen loading to Jordan Creek which will not be realized until after implementation of the recommended controls. The Water Body Assessment will also facilitate future land use planning to prevent pollution from storm water runoff.

Project Deliverables Include:

- Final integrated GIS mapping system.
- QAPP for water quality sampling.
- A summary report and digital database of stormwater water quality
- Final report identifying areas that could be improved, recommendations for improvements, and a listing of funding sources that could be used to implement the improvements needed to solve stormwater management problems contributing to flooding and water quality degradation of Jordan Creek.

Project Contacts:

Grantee Project Manager:

Karen Blue, Project Manager
City and Borough of Juneau
155 S. Seward
Juneau, AK 99801
phone 586-0879 fax 463-2606
Karen_Blue@ci.juneau.ak.us

ADEC Project Manager:

Chris Foley
Alaska Dept. of Environmental
Conservation
410 Willoughby Avenue, Suite 303
Juneau, AK 99801
phone 465-5307 fax 465-5274
Chris_Foley@envircon.state.ak.us