

**Water Monitoring and Data Collection to Support
Adjudication of Water Rights Applications**

**FY2014 Request: \$300,000
Reference No: 56459**

AP/AL: Appropriation

Project Type: Water / Sewer / Solid Waste

Category: Natural Resources

House District: Statewide (HD 1-40)

Location: Statewide

Contact: Jean Davis

Impact House District: Statewide (HD 1-40)

Contact Phone: (907)465-2422

Estimated Project Dates: 07/01/2013 - 06/30/2015

Brief Summary and Statement of Need:

Population growth in the Anchorage Bowl, the MatSu Borough and Kenai Peninsula, coupled with increases in groundwater extraction for industrial cooling, are increasing demands on groundwater resources. Groundwater is economical as it often requires minimal treatment relative to surface water and is a cost effective method for cooling buildings. This monitoring program will increase our regional-scale understanding of available groundwater resources and consequently, our efficiency in water right adjudications. This project is needed to ensure that this economical resource is not under or over-appropriated, which is vital to economic development and growth in these areas.

Funding:	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>	<u>Total</u>
Gen Fund	\$300,000	\$475,000	\$450,000	\$300,000	\$200,000	\$200,000	\$1,925,000
Total:	\$300,000	\$475,000	\$450,000	\$300,000	\$200,000	\$200,000	\$1,925,000

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input checked="" type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	270,000	2
One-Time Startup:	400,000	
Totals:	670,000	2

Prior Funding History / Additional Information:

No prior funding history

Project Description/Justification:

WHAT IS THE ISSUE OR PROBLEM TO BE SOLVED?

The Alaska Department of Natural Resources is mandated by Alaska Statute 46.15.010 to “determine and adjudicate rights in the water of the state, and in its appropriation and distribution.”

Increases in population densities coupled with a greater demand on groundwater extraction for industrial cooling has raised concern among local, state, and federal agencies regarding the need for a regional-scale understanding of available groundwater resources. Currently, only localized, sparse, or low frequency data is available.

Groundwater is an economical source of water as it often requires minimal treatment relative to surface water and is a cost effective method for cooling buildings. A better understanding of regional-scale available groundwater resources would be highly beneficial to economic development and growth in these areas and would increase efficiency in water right adjudications.

WHAT IS THE SCOPE OF WORK TO BE PERFORMED?

Specific data needs include establishment of groundwater monitoring wells to collect high frequency (15 minute) water level data, compiling groundwater withdrawals, conducting aquifer performance tests, conducting lake level measurements, stream gain-loss measurements, acquiring precipitation-distribution data, and water quality data to determine water sources.

WHAT RESULTS WILL BE ACHIEVED AND/OR PRODUCTS PRODUCED?

Data collected will be used to increase our understanding of available groundwater resources and will permit us to track any potential changes in groundwater levels. Additionally, these data will be used to develop numerical groundwater flow models. These numerical tools will be useful for developing data sets to run predictive scenarios that will be useful for large area (subdivision scale) water right adjudications.

Data collected, reports, and numerical groundwater flow models developed in this project will be within public domain and available free of charge.

WHY IS THIS PROJECT NEEDED NOW – WHAT IS THE IMPACT OF REMAINING STATUS QUO?

Lack of a regional-scale understanding of available groundwater resources may result in delays in water right adjudications, and/or under or over-appropriation of groundwater resources, which may have a negative impact on economic development and growth in these areas.

WHAT ALTERNATIVES WERE CONSIDERED TO SOLVE THE ISSUE OR PROBLEM, AND WHY WERE THEY NOT SELECTED?

An alternative is to outsource the requested groundwater monitoring programs. This alternative was not selected as it would substantially increase the overall project costs and may result in delays of water right adjudications.

SPECIFIC SPENDING DETAIL:

<u>LINE ITEM</u>	<u>DOLLAR AMOUNT</u>	<u>DESCRIPTION</u>
Personal Services	\$ 115,000	Salary to cover 2 hydrologists working part-time on this project
Travel	\$ 10,000	site reconnaissance, instrument deployment, data downloads, site measurements
Services	\$ 275,000	equipment purchase and data collection efforts will focus on collecting high frequency (15 minute) groundwater levels, estimating total groundwater withdrawals, conducting lake level measurements, stream/river gain-loss measurements, precipitation-distribution data, and water quality data
PROJECT TOTAL	\$300,000	

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Project Support:

The Department of Natural Resources has established cooperative partnerships with the U.S. Geological Survey, Anchorage Water and Wastewater Utility, and the University of Alaska Anchorage. We are also pursuing additional cooperative partnerships for this project. By developing these partnerships, we are keeping the overall project costs down and benefiting fellow Alaskans by keeping the project monies and jobs here in Alaska.