

Item Title: Approve a Five-Year Agreement with the United States Geological Survey (USGS) to Provide Scientific Monitoring Reporting and Services in Wake County

Specific Action Requested:

That the Board of Commissioners approves a five-year agreement with USGS, to provide scientific monitoring reporting and services in Wake County and authorizes the County Manager to execute a contract for these services, subject to the terms and conditions acceptable to the County Attorney.

Item Summary:

Purpose: The Board of Commissioners approves multi-year contracts.

Background: Wake County is the second fastest growing county in the US with a population that has exceeded 1 million residents. The County's population is projected to double within 40 years. The problem statement that Wake County is advancing a solution to is "From a One-Water perspective, develop a 50-year Water Supply Plan for a sustainable and resilient supply of clean drinking water for residents within unincorporated areas of the county." In order to reach toward that goal Wake County staff recommends conducting a scientific study, creating a groundwater model for the County, and creating a monitoring network for wells.

In Fall 2018, County staff engaged in a scoping process with the United States Geological Survey (USGS). USGS submitted a proposal to conduct this groundwater work. After carefully reviewing USGSs' proposal and pricing and considering their ability to share the cost of the project due to mutual benefit, Wake County staff recommends contracting with USGS to collect data, monitor wells, analyze data, create reports, and create a groundwater model for Wake County as outlined in the contract.

Board Goal: This Board action helps implement Growth and Sustainability initiatives GS3.1 to "...revise water resource policies to reflect current scientific data and understanding."

Fiscal Impact: The FY2019 costs of the contract are appropriated in the FY2019 Non-Departmental budget. The future year costs of the contract will be incorporated in the FY2020-23 recommended budgets in accordance with the project funding contributions included in the proposal.

Additional Information:

Wake County will begin the process of creating a groundwater assessment as part of the One Water initiative. That project begins with a groundwater network of wells that will provide insight into conditions within the groundwater system and provide data to begin

analysis of the relationship between groundwater and other water that provides the county a vital resource. Staff have determined that collaboration with USGS on a 5-year study of groundwater will provide the maximum financial efficiency. USGS will be able to cost share and the groundwater model will be useful for analysis for the long term. Once this phase (Phase 1) is complete a second phase will be proposed to achieve a 50-year water supply plan that incorporates surface water, ground water, climate change and growth.

Chad Wagner, the Associate Director for Investigations, provided insight into the steps required to create a groundwater model that can be used to evaluate plans and situations going forward for an extended time frame. The model relies on the MODFLOW modeling environment. It will allow evaluation of scenarios that might arise due to population growth, changes in rainfall, new industry, or other changes.

Step one is to identify and develop a monitoring network of wells in Wake County that will allow evaluation of the response of groundwater to various condition changes.

Step two is to gather quality and quantity data from the network over time to evaluate responses to changes.

Then, evaluation of data will be completed including fracture mapping, soil and water balance, and streamflow analysis. All of the evaluation leads toward completing a picture of the county with regard to groundwater, and then to a dynamic model that can answer questions about future scenarios. After these tasks are complete, new data can be modeled for the county including climate change and demand increases.

The USGS study portion of the One Water 50 Year Water Supply Plan costs are related in the table below. The table, below, shows the cost with a 5-year contract.

	FY19	FY20	FY21	FY22	FY23	TOTAL
Wake County	\$ 107,200	\$ 248,400	\$ 254,400	\$ 214,200	\$ 171,000	\$ 995,200
USGS	\$ 249,800	\$ 99,600	\$ 101,600	\$ 74,800	\$ 44,000	\$ 569,800
TOTAL	\$ 357,000	\$ 348,000	\$ 356,000	\$ 289,000	\$ 215,000	\$ 1,565,000

Attachments:

1. Presentation
2. USGS Wake County GW Assessment Proposal