

Proposed Five-Year Contract with US Geological Survey



@wakegov    

wakegov.com

Advance Groundwater Assessment

- ~ 1 million residents
- Projected to double within ~ 40 years
- Growth and Sustainability, Board Goal 3.1:
 - The Wake County Water Partnership and Water Quality staff have developed a scope of work to create a One Water “50 year Supply Plan” for Wake County

Advance Groundwater Assessment

USGS – A scientific body of the US Government

The fundamental purpose of the Secure Water Act is to provide authority so that the Federal water and science agencies can work together with the States and local water managers...

Advance Groundwater Assessment

50 – Year Water Supply Plan

Collaborate with US Geological Survey – Years 1 to 5

- Snap shot
- Dynamic Model

Collaborate with independent consultant – Years 5 to 8

- Integration of plans

One Water – 50 Year Water Supply Plan

Support USGS Studies that examine the integrated management of water in regions that can be used to project need for resources in areas of rapid population growth.



One Water – 50 Year Water Supply Plan

The Wake County Water Partnership and Water Quality staff have developed a scope of work to create a One Water “50 Year Supply Plan” for Wake County.

Plan Phases

Phases Proposed:

1a. Snapshot

1b. Dynamic Model

Phase 1a – Snapshot

This phase is an update of the Groundwater Study from 2003. It includes some of the recommendations from that study including a groundwater monitoring network.

Phase 1a – Snapshot

- Development of a Groundwater Monitoring Network
- Begin data gathering and analysis from those wells
- Well Yield Distribution and Fracture Map
- Soil and Water Balance
- Develop a model for evaluation of current demand v. recharge

Phase 1a – Snapshot

Well Network

- The first effort in Year 1 and Year 2 is to develop the monitoring network. Wake County staff have begun identifying wells that will be available for this purpose.

Phase 1a – Snapshot

- Working with USGS will allow sharing of the cost, since USGS has an interest in refining their planning initiatives nationwide.
- Water Quality proposes that data analysis and building of a model begin in Year 2 and Year 3 of the study.
- Staff will investigate opportunities to reduce the cost of elements of this study on a continuous basis

Phase 1b – Dynamic Model

Develop a model of the subsurface hydrology of Wake County that can be used for projections and planning with regard to water demand, recharge, and effects on surface flow.

Phase 1b – Dynamic Model

- Work with USGS on developing this in MODFLOW
- Calibrate the model
- Add scenarios based on population growth, climate changes, and planning

Phase 1b – Dynamic Model

- The use of MODFLOW will make all of the data available for updating as trends in water use, population growth, or climate are noticed.
- This will give planners a tool to identify potential challenges and threats to groundwater supply, before problems occur.

Future Planning

Climate models and demand growth scenarios can be integrated into the overall plan once it is integrated model of surface water and groundwater demands

Roughly \$1 Million County Commitment over 5 Years

USGS Phase 1 – 5 Year Contract Cost

	FY2019	FY2020	FY2021	FY2022	FY2023	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

- FY2019 costs appropriated in adopted budget. Last four years of contract would be included in future operating budgets.

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.

Discussion