

## Legislation Text

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**Consider recommendation from EAA staff to approve the purchase of a nuclear magnetic resonance tool for hydrogeophysical research at the EAA's Field Research Park.**

STAFF RECOMMENDED MOTION:

Move the board approve purchase order 22-21990 for the acquisition of a portable nuclear magnetic resonance probe from Vista Clara Inc., in an amount not to exceed \$83,300, and authorize the General Manager to proceed with any necessary steps to make the purchase.

SUMMARY:

The purpose of this agenda item is for the board to consider an EAA staff recommendation to purchase a portable nuclear magnetic resonance (NMR) tool for hydrogeophysical investigations at the Field Research Park (FRP).

EAA Aquifer Science staff are pursuing methods to quantify the effectiveness of land management techniques in improving soil health and recharge to the Edwards Aquifer. One important component of this investigation is the gathering of hydrologic data within the vadose zone of the aquifer. The vadose zone is the variably saturated section of rock between the ground surface and the water table of the aquifer. As such, the vadose zone is critical in the exchange between surface water and recharge to the aquifer. Estimates of water content, porosity, and permeability of the vadose zone can be calculated using geophysical methods such as nuclear magnetic resonance. Utilizing technology very similar to a medical MRI scan, a portable NMR probe can be deployed into specially drilled boreholes to log hydrologic characteristics of the rock. A strong magnet in the probe stimulates hydrogen atoms in water and then uses radio waves to detect their position. This information can then be used to create accurate estimates of water content, porosity, and permeability characteristics of the vadose zone beneath the land management practices at the FRP. Any changes in the vadose zone characteristics as a result of land management activities can be analyzed by comparing NMR datasets over time.

To solicit the required services, EAA staff issued an Invitation for Bid (IFB) consistent with the standard EAA procurement process beginning August 7, 2022 through August 30, 2022. EAA staff, through direct notification and publication of the IFB with the Texas Purchasing Group - BidNet Direct and the State of Texas Electronic State Business Daily, reached 24 vendors with notification of the IFB, 11 were M/WBEs. In addition, newspaper publication of the IFB was provided in various newspapers throughout the EAA region.

On the submission deadline of August 30, EAA staff received one bid from a non-M/WBE vendor. The bid met the criteria described in the IFB and, while only one bid was received, EAA staff believes the bid is competitive and recommends bid award.

**STRATEGIC PLAN REFERENCE:**

This agenda item helps build and/or great Greater Understanding and Management Through Science  
- a key objective in achieving the EAA's goals identified in the 2021-30 Strategic Plan.

**FISCAL IMPACT:**

Sufficient funding for this initiative is available in the 2022 operating budget.