

**QUARTERLY PROGRESS REPORT NO. 2 (CY 2017)**  
**NBU ASR Demonstration Project**

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From:  
Fred M. Blumberg

Date:  
June 30, 2017

ARCADIS Project No.:  
40256004.0000

Subject:  
Quarterly Progress Report for the NBU ASR Demonstration Project (**Contract No. 1600011957**) for **April 1, 2017 through June 30, 2017**.

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**Introduction:**

The New Braunfels Utilities (NBU) Aquifer Storage and Recovery (ASR) Demonstration Project is being partially funded by the Texas Water Development Board (TWDB) under Rider 25 to HB 1 (General Appropriations Act) of the 84<sup>th</sup> Legislature. The "Project" generally consists of: coordination with TCEQ; design for wireline coring in the brackish Edwards Aquifer; wireline coring; design of a monitor well in the brackish Edwards Aquifer; construction of the monitor well and collection of data; preparation of draft and final reports; and presentations on the Project.

The Project Contractor is the Edwards Aquifer Authority (EAA) and the primary Project Participant is NBU. The Project consulting and engineering team consists of Arcadis U.S., Inc.; ASR Systems, LLC; and INTERA, Inc. (the "Arcadis Team").

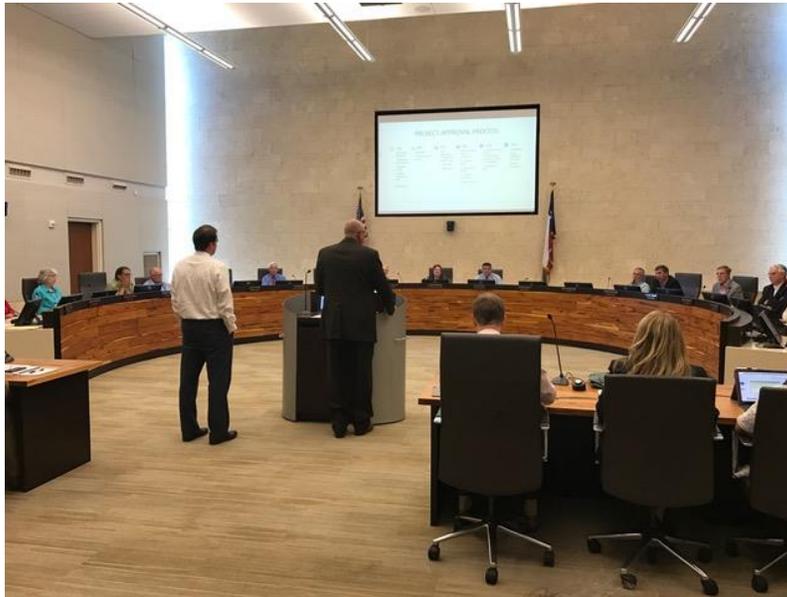
The purposes of this Quarterly Progress Report are to explain what work has been accomplished during the reporting period, and to describe any potential or anticipated challenges.

**Work Completed:**

Task 1: Project Management. During this reporting period project management activities included communication with EAA and NBU, and among the Arcadis team, as well as extensive communication between Arcadis and the participants related to invoicing. A kickoff meeting has not been held pending execution of the interlocal agreement between EAA and NBU, and completion of land acquisition.

For the purposes of the Project, the interlocal agreement is necessary because it is considered by EAA to be, and functions as, a permit for the recharge and recovery of water from the Edwards Aquifer as required in EAA's enabling act. For several months, EAA and NBU have been negotiating the final terms and conditions of the interlocal agreement. The EAA Board of Directors approved the interlocal

agreement on June 13, 2017. The photograph below shows Roger Biggers, P.E., NBU Executive Director of External Affairs, and Marc Friberg, EAA Executive Director of Public Policy & External Affairs addressing the EAA board of directors during the approval process. The NBU Board of Trustees subsequently approved the agreement on June 29, 2017.



At the same time, NBU continues working on the authorizations necessary to use the New Braunfels Regional Airport as the location for the wireline coring and the monitor well. The Regional Airport is the area identified in the 2012 feasibility study as the recommended location for the construction of an ASR wellfield for storage of treated water in the brackish portion of the Edwards Aquifer. In addition to the Regional Airport, NBU is also considering other properties in the immediate area in case the authorizations take longer than the schedule will allow.

Task 2: Coordination with TCEQ. No work on this task has been completed in this reporting period.

Task 3: Coring Design. During the last reporting period, NBU authorized the Arcadis Team to begin development of the specifications for the wireline coring. ASR Systems began work on the specifications and has continued contacting drilling contractors with experience in wireline coring for ASR projects. On May 25, 2017 the Arcadis Team had a conference call with EAA staff to discuss EAA's plans for logging during the coring process.

Task 4: Wireline Coring. During the reporting period, the Arcadis Team began contacting and researching prospective coring contractors which have experience with coring for ASR projects. A list of qualified contractors will be provided to NBU for use in the bidding process.

Task 5: Monitor Well Design. During the previous reporting period, NBU authorized the Arcadis team to begin preparing the specifications for the monitor well construction. INTERA has continued working on the draft specifications. The Arcadis Team had discussions with NBU on alternatives for disposal of any brackish water produced during the drilling process. On May 25, 2017 the Arcadis Team had a conference call with EAA staff to discuss EAA's plans for logging during the monitor well construction.

Task 6: Monitor Well Construction and Data Collection. No work on this task has been completed in this reporting period.

Task 7: Draft and Final Reports. No work on this task has been completed in this reporting period.

Task 8: Presentations. Presentations on the Project were made to the EAA Board of Directors and the NBU Board of Trustees. In addition, NBU CEO Ian Taylor and Fred Blumberg gave a presentation that included a discussion of the Project at the TAWWA/WEAT Summer Seminar in San Antonio on June 23, 2017.

**Challenges Identified:**

The negotiation of the interlocal agreement between EAA and NBU has taken longer than anticipated. During this reporting period EAA and NBU drafted and reviewed two more versions of the agreement to address the concerns of the EAA Board of Directors. The interlocal agreement was approved by the EAA and NBU boards on June 13, 2017 and June 29, 2017, respectively.

Likewise, NBU's land acquisition activities at the Regional Airport have taken longer than anticipated. On January 25, 2017 NBU and the City of New Braunfels submitted an application to the Texas Department of Transportation (TXDOT) Aviation Division. After the TXDOT review, the application will be forwarded to the Federal Aviation Administration (FAA) for final approval.

Because of the delays to date, Arcadis has not prepared an updated schedule for the Project. An amendment to the Contract between the TWDB and the EAA will be required because most of the "downstream" tasks are dependent upon having the executed interlocal agreement and access to property for the wireline coring and the construction of the monitor well. To expedite the completion of the Project, the Arcadis Team began preparing the specifications for the wireline coring and monitor well in advance of NBU having the final interlocal agreement or the property.