Texas Water Development Board

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TO: Board Members

THROUGH: Jeff Walker, Executive Administrator
John T. Dupnik, P.G., Deputy Executive Administrator, Water Science and Conservation
Todd Chenoweth, General Counsel

FROM: Kevin Kluge, Director, Conservation and Innovative Water Technologies

DATE: March 14, 2019

SUBJECT: 2018 Texas Rain Catcher Awards

ACTION REQUESTED

Consider approving the 2018 Texas Rain Catcher Awards.

BACKGROUND

The Texas Water Development Board (TWDB) provides information and education to the public on all aspects of rainwater harvesting through our website and with printed materials. The Texas Manual on Rainwater Harvesting (3rd edition, 2005), a popular guide published by the TWDB, provides an introduction to rainwater harvesting and to designing residential and small-scale commercial systems. The TWDB is also required to make rainwater harvesting training available to permitting staff of certain cities and counties.

The TWDB launched its Texas Rain Catcher Award competition and recognition program in 2007 and is now celebrating its twelfth award cycle. The program promotes rainwater harvesting, educates the public about the benefits of rainwater harvesting, and recognizes those dedicated to conserving our precious water resources. The competition is open to all individuals, companies, organizations, municipalities, and other local and state governmental entities in Texas, except current TWDB employees and Board members. Winners are chosen by a panel of judges consisting of TWDB staff on the Rain Team. Since the creation of the Texas Rain Catcher Award program in 2007, the TWDB has recognized 46 entities and 2 individuals.

Our Mission

To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas

Board Members

Peter M. Lake, Chairman | Kathleen Jackson, Board Member | Brooke T. Paup, Board Member

Jeff Walker, Executive Administrator

Seven rainwater harvesting projects were submitted for the 2018 Rain Catcher awards. Submitted applications were scored by TWDB staff members based on five criteria:

1. Demonstration of how the rainwater harvesting system has helped conserve surface water and/or groundwater through reduced dependency on conventional water supply systems.
2. Demonstration of how the rainwater harvesting system has saved money for the owner.
3. Originality and innovation as evidenced by the application of new knowledge, new application of existing knowledge, or an innovative mix of existing and new knowledge.
4. Demonstration of how the system has benefited the environment (for example, reduced erosion or the threat of flooding) without itself adversely impacting the environment.
5. Uniqueness of the system.

Each judge scored the project based on the criteria and then ranked the projects across all project categories (Residential, Educational/Government, Commercial). The rankings were combined and the judges recommend presenting the 2018 Texas Rain Catcher Awards to the four highest ranked projects.

FirstBank Southwest Amarillo

Construction of the FirstBank Southwest Amarillo banking center began in 2012. Bank officials and landscape architects agreed that they could do more to conserve water beyond xeriscaping.

Before construction, the 36,252 square foot site allowed 100 percent of rainwater runoff to enter the City of Amarillo's storm water system. As part of site development, a rainwater collection system was designed by Turner LandArchitecture. Rather than collecting rainwater from the roof and storing it in a tank, the bank's collection system was the lot itself, lessening the stormwater runoff and the potable water used for landscaping.

Rain falls upon the parking lot and the building's metal roof. Downspouts channel water from the roof to the parking lot, which consists of permeable pavers. Once below the pavers, it flows through gravel backfill into 530 linear feet of perforated pipe. The pipe conveys water into an underground tank. "The tank is basically a rigid 'milk crate' with a non-permeable envelope around it," says Jason Habeger with Turner LandArchitecture in Amarillo.

The paver system base can hold up to 12,000 gallons of harvested rainwater. An additional 14,600 gallons of rainwater can be stored in the underground tank. This gives a potential storage capacity of 26,600 gallons. That volume is the equivalent of 99.6 percent of the rainfall collected from a two-year storm event.

Do/Peters-Do Residence
The Do/Peters-Do family residence is located just south of Austin in an area with marginal groundwater supplies. Due to the poor quality of the groundwater that supplied their home and with the goal of long-term security in an uncertain water future, the Do/Peters-Do family decided to invest in a rainwater harvesting system as the primary potable water supply for their residence.

The rainwater harvesting system collects rainwater from the entire roof area, which is approximately 3,000 square feet. Rainwater is collected into a 31,000 gallon corrugated metal cistern. Inside the house's mechanical room, the water is filtered and receives ultraviolet treatment to clean and disinfect the rainwater. A manifold valve system was installed in order to utilize groundwater from a private water system in case the rainwater cistern ever runs dry.

Grand Prairie Armed Forces Reserve Complex

Ensuring that our nation's military has the necessary water to complete vital national security missions requires a mixture of rapid innovation and thorough planning. This combination is demonstrated at the Grand Prairie Army Reserve Complex's first use of rainwater harvesting for vehicle wash operations.

Developed in 2017, the rainwater harvesting system collects precipitation that is used for required vehicle wash operations at one of the Army Reserve Complex's main vehicle maintenance shops. This project stemmed from a larger Army Reserve strategic plan to reduce dependence on potable water for operations that can use non-potable water. Using geospatial data (vehicle wash locations, rainfall data, watershed vulnerability, and water demand) and water security data, the Army Reserve and partners at the Pacific Northwest National Laboratory determined the best locations for using rainwater harvesting for vehicle washing. Grand Prairie was one of two pilot sites chosen nationwide to test the effectiveness and maintenance requirements of rainwater collection systems.

Prior to system installation, potable water was used to wash vehicles. Now, all vehicle wash demand is being met by rainfall collected. A savings of 34,250 gallons of potable water has been achieved since system installation in April 2017. The Army Reserve site has experienced an overall reduction in potable water consumption, with the rainwater harvesting system making a significant contribution.

Upper Guadalupe River Authority EduScape
The Upper Guadalupe River Authority's (UGRA) EduScape is located on the grounds of UGRA's Guadalupe Basin Natural Resources Center in Kerrville, Texas. The EduScape consists of 33,000 square-feet of water-conserving landscaping which was converted from traditional, high-water-use turf-grass monoculture. Beyond the landscaping, the EduScape project is complete with interpretive signs, rooftop rainwater collection, air-conditioner condensate collection, and managed stormwater collection/retention. Rainwater and condensate are stored in a 30,000-gallon rainwater collection tank, a 3,000-gallon condensate collection tank, and a 50-gallon rain barrel.

The EduScape includes 15 water-saving features in addition to 30 interpretative and water conservation tip signs. A quarter-mile walking trail meanders among several different plant zones highlighting a simulated Hill County spring feature, terracing, rain gardens, and a dry creek bed. In addition, the pervious walkway takes visitors past numerous installations of native, adaptive, and faux plants – many of which are identified with labels.

The uniqueness of the UGRA EduScape is that it is a project developed by the community, for the community. The Hill Country Master Gardeners, with input from Dr. Fouad Jaber of the Texas AgriLife Extension Service, developed the design with the idea of including as many green stormwater infrastructure strategies as possible. The Hill Country Chapter of the Texas Master Naturalists is helping to maintain the landscape plants. Last but not least, the Riverside Nature Center is assisting by conducting tours of the UGRA EduScape.

The UGRA EduScape is designed as a teaching tool and is open to the public for organized and self-guided tours year-round. As a capstone bonus, the UGRA EduScape is Monarch Waystation and National Wildlife Habitat certified. Discover more at http://www.ugra.org/major-initiatives/eduscape.

<u>RECOMMENDATION</u>
Based on the scores submitted by the panel of judges, the Executive Administrator recommends presenting these four nominees with 2018 Texas Rain Catcher Awards.