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 & Conservation
Joe Reynolds, Interim General Counsel
Rebecca Trevino, Chief Financial Officer

FROM: Cameron Turner, Manager, Agricultural Water Conservation
Kevin Kluge, Director, Conservation & Innovative Water Technology

DATE: May 26, 2020

SUBJECT: Fiscal Year 2020 Agricultural Water Conservation Grants

ACTION REQUESTED

Consider authorizing the Executive Administrator to negotiate and execute contracts for Fiscal Year 2020 Agricultural Water Conservation Grants.

BACKGROUND

The Texas Water Development Board's (TWDB) Agricultural Water Conservation Grants Program annually offers grant funding to state agencies and political subdivisions for activities that serve the public interest and further water conservation in the state, as required by Texas Water Code §§17.897–17.902. Grant topics vary from year to year to address current issues in agricultural water conservation that are within the eligible uses and intended purposes of the Agricultural Water Conservation Fund.

On November 21, 2019, the Board authorized the Executive Administrator to publish a request for applications for Fiscal Year 2020 Agricultural Water Conservation Grants, with up to $1.2 million in funding available for projects that achieve one or more of the following goals:

A. Improve irrigation efficiency through irrigation system improvements and the adoption of irrigation scheduling practices
B. Advance soil health initiatives and enhance resilience to weather extremes and climate variability
C. Promote innovation in agriculture by incorporating the latest water conservation technological advancements

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

To achieve these goals, projects should incorporate the following actions and objectives:

1. Engage agricultural producers and water managers through educational outreach in the form of field days, workshops, seminars, and demonstrations in classroom settings and on farms involved in the projects
2. Promote the adoption of innovative water conservation practices and technologies that result in improvements to irrigation efficiency, soil health, and soil moisture retention
3. Identify methods to measure and report water conservation performance metrics such as water savings, soil water holding capacity, soil moisture content, plant available water, and infiltration
4. Build upon the success of existing water conservation efforts and leverage the support of local, state, federal, and private industry partners

KEY ISSUES

The request for applications was published in the *Texas Register* and on the TWDB website. Twenty-five applications were received in response to the solicitation, with applicants requesting a total of $7,575,021.87 in grant funding assistance. Attachment A includes a list of all applications by entity with brief project titles, grant funding requests, and total project costs. A technical review panel reviewed and ranked the applications according to the rules contained in 31 Texas Administrative Code Chapter 367, the ranking criteria outlined in the request for applications, and the application instructions.

Table 1 includes the top five applicants, amounts requested, and grant funding recommendations. Additional information on the applications received may be found in Attachment A, along with a summary of the recommended projects in Attachment B.

Table 1. Top-ranked applications and funding recommendations

Rank	Entity	Amount requested	Funding recommendation
1	Lower Colorado River Authority	$244,744	$244,744
2	El Paso County Water Improvement District No. 1	$300,000	$300,000
3	Texas A&M AgriLife Research	$200,314	$200,314
4	North Plains Groundwater Conservation District	$400,000	$250,000
5	Bayview Irrigation District No. 11	$250,000	$200,000
	Total	**$1,395,058**	**$1,195,058**

RECOMMENDATION

The Executive Administrator recommends approval of the top-ranked applications and recommended funding amounts listed in Table 1, as these projects align with the goals and objectives of the program and will further water conservation in the state by supporting the implementation of irrigation conservation water management strategies identified in the 2017 State Water Plan.

Attachments:

Attachment A: List of applications
Attachment B: Summaries of recommended projects

Attachment A

List of applications

Attachment A: List of applications

Entity	Project	Local match	Grant request	Total cost
Bayview ID No. 11	Main canal pipe conversion project	$330,700.00	$250,000.00	$580,700.00
Cameron County ID No. 6	134, 139, and 196 canal improvements	$188,926.00	$205,000.00	$393,926.00
Edwards Aquifer Authority	Conservation through soil enhancement	$17,450.00	$7,050.00	$24,500.00
Edwards Aquifer Authority	Flow-connect telemetry equipment for irrigation metering	$20,875.00	$16,875.00	$37,750.00
Edwards Aquifer Authority	Irrigation efficiency improvement program	$115,000.00	$100,000.00	$215,000.00
El Paso County WID No. 1	Franklin Canal Lining Project Phase 2	$300,000.00	$300,000.00	$600,000.00
El Paso Water Utilities	Remote monitoring of center pivots to conserve irrigation	$85,550.00	$85,550.00	$171,100.00
Engelman ID	Water pumps and lines for conservation monitoring	$435,000.00	$304,500.00	$739,500.00
Evergreen UWCD	Irrigation meters for efficient use of groundwater	$150,000.00	$150,000.00	$300,000.00
Gateway GCD	Agricultural production metering	$50,000.00	$50,000.00	$100,000.00
Harlingen ID	Texas AWE Redux	$30,000.00	$197,500.00	$227,500.00
Harlingen ID	System Interconnection with La Feria ID	$42,419.00	$42,418.00	$84,837.00
Lake Proctor Irrigation Authority	Automated filtration and irrigation scheduling in pecans	$32,500.00	$218,886.87	$251,386.87
Lower Colorado River Authority	Automated gates in the Garwood Irrigation Division	$692,327.00	$244,744.00	$937,071.00
Middle Pecos GCD	Conservation in Comanche Springs contributing zone	$1,113,092.00	$2,348,341.00	$3,461,433.00
North Plains GCD	Master Irrigator Project	$400,000.00	$400,000.00	$800,000.00
Plateau UWCSD	Rainwater harvesting demonstration project	$8,500.00	$8,500.00	$17,000.00
Reeves County WID No. 1	Channelization of Lake Balmorhea Madera Draw intake	$150,000.00	$150,000.00	$300,000.00
Texas A&M - Kingsville	Water conservation for citrus production	$129,249.00	$167,732.00	$296,981.00
Texas A&M AgriLife Extension	Irrigation conservation education and demonstration	$178,500.00	$268,491.00	$446,991.00
Texas A&M AgriLife Research	Integrated conservation for crop and livestock production	$334,544.00	$334,544.00	$669,088.00
Texas A&M AgriLife Research	Water management education in South Texas	$200,314.00	$200,314.00	$400,628.00
Texas A&M AgriLife Research	Soil water conservation via cover crops and strip tillage	$268,707.00	$268,707.00	$537,414.00
Texas A&M AgriLife Research	Native plants for rangeland water use efficiency	$-0-	$98,529.00	$98,529.00
Texas Tech University	Sustainable water conservation and soil health	$-0-	$1,157,340.00	$1,157,340.00
	Total	**$5,273,653.00**	**$7,575,021.87**	**$12,848,674.87**

GCD – groundwater conservation district; ID – irrigation district; WID – water improvement district; UWCD – underground water conservation district; UWCSD – underground water conservation & supply district

Attachment B

Summaries of recommended projects

Lower Colorado River Authority
Automated Gates in the Garwood Irrigation Division

Project costs and funding recommendation:

	Requested	Recommended
TWDB grant funding	$244,744	$244,744
Local cash or in-kind	$692,327	$692,327
Total project cost	$937,071	$937,071

Participants: The Lower Colorado River Authority (LCRA) and area agricultural producers

Project area: This project would occur in the Lower Colorado Regional Water Planning Area (Region K).

Project summary: The proposed project would build upon the infrastructure and construction experience from gate rehabilitation projects in other LCRA irrigation divisions by automating 46 main canal gate structures in the Garwood Irrigation Division. The project includes integration with the existing SCADA system and is estimated to save about 2,700 acre-feet of water per year, at a cost of $37 per acre-foot saved. Gate automation and control in the Garwood canal system is a cost-effective conservation measure to improve water use efficiency. The project will allow LCRA to accurately monitor real-time water flow throughout the canal system and will assist agricultural producers with irrigation scheduling. LCRA will organize a producer-led workshop to showcase these new tools and to promote the widespread adoption of innovative water conservation practices and technologies to improve irrigation efficiency.

Project duration: The project would involve a two-year construction period, followed by three to five years of reporting irrigation water use data and water savings information.

Recommendation: This project supports implementation of irrigation conservation water management strategies in the 2017 State Water Plan and the 2016 Lower Colorado Regional Water Plan (Region K). If funded, the project would serve the public interest and further water conservation in the state. TWDB grant funding would supplement rather than replace funding from the applicant.

This project is recommended for TWDB grant funding, in an amount not to exceed **$244,744**. The actual project budgets, scope of work, and timeline will be determined during contract negotiations.

El Paso County Water Improvement District No. 1
Franklin Canal Lining Project Phase 2

Project costs and funding recommendation:

	Requested	Recommended
TWDB grant funding	$300,000	$300,000
Local cash or in-kind	$300,000	$300,000
Total project cost	$600,000	$600,000

Participants: The El Paso County Water Improvement District No. 1 (District) and area agricultural producers

Project area: The project would occur within the boundaries of the District in the Far West Texas Regional Water Planning Area (Region E).

Project summary: This project consists of lining 2,400 feet of the Franklin Canal using steel panel reinforced shotcrete. The improvements will advance sediment control efforts and ensure the continued reliability of irrigation water to water users in the District. The project is anticipated to have a useful life of 50 years and generate water savings of 164.53 acre-feet per year, at a cost of $73.17 per acre-foot. In collaboration with the El Paso Zoo, Texas A&M AgriLife Extension, and other public and private institutions, the project includes a water conservation education program for small-tract irrigation water users and the general public. The District and surrounding community consider this project a high priority, as concrete-lining of the canal is a requirement prior to construction of the adjacent master-planned Paso del Norte Trail along the banks of the canal, to be funded by a grant from the Texas Department of Transportation. The District has also pursued additional supplemental funding for the canal lining project through the U.S. Bureau of Reclamation.

Project duration: The project would involve a two-year construction period, followed by three to five years of reporting irrigation water use data and water savings information.

Recommendation: This project supports the implementation of irrigation conservation water management strategies in the 2017 State Water Plan and the 2016 Far West Texas Regional Water Plan (Region E). If funded, the project would serve the public interest and further water conservation in the state. TWDB grant funding would supplement rather than replace funding from the applicant.

This project is recommended for TWDB grant funding, in an amount not to exceed **$300,000**. The actual project budgets, scope of work, and timeline will be determined during contract negotiations.

Texas A&M AgriLife Research
Agricultural Water Management Strategies and Education Programs for Water Conservation in South Texas

Project costs and funding recommendation:

	Requested	Recommended
TWDB grant funding	$200,314	$200,314
Local cash or in-kind	$200,314	$200,314
Total project cost	$400,628	$400,628

Participants: Texas A&M AgriLife Research (AgriLife) and area agricultural producers

Project area: This project would occur in the Rio Grande Regional Water Planning Area (Region M).

Project summary: This project will develop educational programs (workshops, field days, conferences) to promote irrigation application efficiencies of producing vegetables in protected environments (high tunnels and greenhouses) and evaluate the net return for these practices. This project will also assess the cost-effectiveness and demonstrate the use of digital imagery derived from unmanned aerial systems for irrigation scheduling; compare deficit irrigation strategies; and, evaluate the use of the unmanned aerial systems for detecting leaks in on-farm irrigation systems and irrigation district delivery systems in the Lower Rio Grande Valley (LRGV). The project is expected to provide water savings of 20 percent for those the agricultural producers and irrigation districts participating in the program that adopt these innovative conservation technologies and proven best management practices in agricultural water conservation.

Project duration: This project would involve a three-year demonstration period, followed by the submission of a comprehensive final report.

Recommendation: This project supports implementation of irrigation conservation water management strategies in the 2017 State Water Plan and the 2016 Rio Grande Regional Water Plan (Region M). If funded, the project would serve the public interest and further water conservation in the state. TWDB grant funding would supplement rather than replace funding from the applicant.

This project is recommended for TWDB grant funding, in an amount not to exceed **$200,314**. The actual project budgets, scope of work, and timeline will be determined during contract negotiations.

North Plains Groundwater Conservation District
Master Irrigator Project

Project costs and funding recommendation:

	Requested	Recommended
TWDB grant funding	$400,000	$250,000
Local cash or in-kind	$400,000	$250,000
Total project cost	$800,000	$500,000

Participants: The North Plains Groundwater Conservation District (District) and area agricultural producers

Project area: The project would occur within the boundaries of the District in the Panhandle Regional Water Planning Area (Region A).

Project summary: This project would support the District's award-winning Master Irrigator Program. Over the past 4 years, 90 growers graduated from the educational program and installed over $1.3 million worth of conservation improvements on their farms through funding support from the U.S. Department of Agriculture – Natural Resources Conservation Service. Agricultural producers selected to participate in the program during 2021 would receive access to cost-share funding for irrigation scheduling technologies and equipment upgrades following completion of the Master Irrigator educational program. If the project was funded in full, the District anticipates resulting water savings of approximately 2,133 acre-feet per year.

Project duration: The project would involve an educational program and installation period, followed by three to five years of reporting irrigation water use data and water savings information.

Recommendation: This project supports the implementation of irrigation conservation water management strategies in the 2017 State Water Plan and the 2016 Panhandle Regional Water Plan (Region A). If funded, the project would serve the public interest and further water conservation in the state. TWDB grant funding would supplement rather than replace funding from the applicant.

This project is recommended for partial TWDB grant funding, in an amount not to exceed **$250,000**. The actual project budgets, scope of work, and timeline will be determined during contract negotiations.

Bayview Irrigation District No. 11
Main Canal Pipe Improvements, Phase 1
Water Conservation through Improved Efficiency

Project costs and funding recommendation:

	Requested	Recommended
TWDB grant funding	$250,000	$200,000
Local cash or in-kind	$330,700	$330,700
Total project cost	$580,700	$530,700

Participants: The Bayview Irrigation District No. 11 (District), area agricultural producers, and others

Project area: This project would occur within the boundaries of the District in the Rio Grande Regional Water Planning Area (Region M).

Project summary: This project will convert 2,550 linear feet of open channel to pipe and realize water savings of 120.85 acre-feet per year. This project is Phase 1 of an estimated $10 million effort to replace 6.88 miles of the District's main canal with pipeline, which will ultimately save an estimated 1,673.5 acre-feet per year. The District has partnered with the City of Los Fresnos to construct a hike & bike trail on top of the buried pipes to provide recreational benefits to the surrounding community. The U.S. Bureau of Reclamation recently awarded the district $300,000 in grant funding through their WaterSMART program as additional supplemental funding to support the project. The District also intends to partner with the Arroyo Colorado Watershed Partnership, Texas A&M AgriLife Extension, and the Texas Water Resources Institute to provide water conservation outreach and education.

Project duration (to be determined during contract negotiations, if funded): The project would involve a two-year construction period, followed by three to five years of reporting irrigation water use data and water savings information.

Recommendation: This project supports the implementation of irrigation conservation water management strategies in the 2017 State Water Plan and the 2016 Rio Grande Regional Water Plan (Region M). If funded, the project would serve the public interest and further water conservation in the state. TWDB grant funding would supplement rather than replace funding from the applicant.

This project is recommended for partial TWDB grant funding, in an amount not to exceed **$200,000**. The actual project budgets, scope of work, and timeline will be determined during contract negotiations.