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**ABRIDGED APPLICATION FOR:
TEXAS WATER DEVELOPMENT BOARD
SWIFT PROGRAM**

CITY OF BRYAN
AQUIFER STORAGE & RECOVERY (ASR) PROJECT

FEBRUARY 5, 2016

**Prepared by:
Susan Roth Consulting, LLC**



Abridged Application

Due February 5, 2016 by 5:00pm

SWIFT@twdb.texas.gov

By submitting this abridged application, you understand and confirm that the information provided is true and correct to the best of your knowledge and further understand that the failure to submit a complete abridged application by the stated deadlines, or to respond in a timely manner to additional requests for information, may result in the withdrawal of the abridged application without review.

GENERAL INFORMATION		
Name of Entity	County	Regional Water Planning Area
City of Bryan	Brazos	Region G

Entity Contact Information			
Contact Person	Name	Jayson Barfknecht, Ph.D., P.E.	
	Title	Public Works Director	
Mailing Address	City of Bryan		
	300 South Texas Avenue		
	Bryan, Texas 77803		
Phone Number	(979) 209-5929	Fax Number	(979) 209-5035
Email Address	jbarfknecht@bryantx.gov		

PROJECT DESCRIPTION				
Name of Project <i>(As it appears in the 2016 regional water plan)</i>	Bryan ASR (Carrizo-Wilcox)			
Where can the project be found in the most recent Regional Water Plan?	Project described on page:	10.1-1 thru 10.1-12	Capital costs listed on page:	10.1-11 (Table 10.1-4)

Please attach a list of all water systems served by the proposed project.

Phase(s) Applied For	X Planning	Acquisition	X Design	X Construction
Population Served When Fully Operational	103,700 (Year 2018)			

Description of Proposed Project
<p>The City of Bryan (Bryan) currently has 12 water supply wells in the Simsboro and Sparta Aquifers with a combined permitted supply of 33,540 ac-ft/yr; eleven of these wells are permitted under historical use with an annual permitted production amount of 28,702 ac-ft/yr. The City also provides wholesale water service to Wickson Creek Special Utility District and Wellborn Special Utility District (reference CCN map and complete list of entities/regional project worksheet in attachments). An ASR conjunctive use strategy was developed that includes ASR and new production wells. A spreadsheet model was developed that simulates the storage and use of ASR water to determine when ASR wells and additional productions wells are needed in order to meet demands until 2070.</p> <p>The ASR aspect of this conjunctive use strategy would fully utilize the MAG by pumping at the allowable rate year round. During times when water demand is less than the amount of water being produced from the production wells, the excess water would be directed from the City's Well Field Pump Station to a new ASR well field for aquifer storage. This water would be recovered from the ASR wells when Bryan's demand exceeds the allowable use from the MAG. The recovered water would be delivered back to the Well Field pump station for cooling and disinfection and then into the distribution system.</p>



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This conjunctive use strategy requires four new ASR wells and four recovery wells; however, the first phase of this project would involve constructing one ASR well and one recovery well. In addition to the wells required for this strategy, two-way pipelines between the ASR well field and the Well Field Pump Station, an ASR pump station at Well Field Pump Station, and an interconnect into the storage tanks are needed. For purposes of this strategy, the target aquifer for storing the water is the brackish water zone of the Simsboro unit of the Wilcox Group.

To meet the predicted ASR injection and ASR use needs, Bryan needs to begin storing ASR water using Well #10 and one new ASR well before 2020. Additionally, piloting of Well #10 as an ASR well needs to begin as soon as possible. The water stored in an ASR system is not subject to the evaporative losses encountered in surface storage reservoirs (water conservation measure) and remains available for future use; ASR systems have a small footprint relative to surface-water reservoirs and create a new and reliable water supply to meet demand during future water shortages.

Emergency <i>(select all that apply)</i>	<input type="checkbox"/> Applicant/entity's water supply will last less than 180 days. <input checked="" type="checkbox"/> Water supply need occurs earlier than anticipated in the State Water Plan. <input type="checkbox"/> Applicant has received or applied for Federal emergency funding. <input type="checkbox"/> None of the above.
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Agricultural Efficiency Project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Efficiency improvement achieved by implementing the project <i>(Please provide an attachment showing the basis for your calculation.)</i> <input type="checkbox"/> <1% <input type="checkbox"/> 10%-13.9% <input type="checkbox"/> 1%-1.9% <input type="checkbox"/> 14%-17.9% <input type="checkbox"/> 2%-5.9% <input type="checkbox"/> ≥18% <input type="checkbox"/> 6%-9.9%
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Household Cost Factor
(Household Cost Factor for SWIFT prioritization is calculated by dividing the service area's average residential water bill by its annual median household income. For regional projects, these should represent the combined service areas of all participating entities.)

Estimated average annual residential water bill:	\$582.44	Annual Median Household Income:	\$44,357.17
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The proposed project addresses:	<input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Water Loss <input type="checkbox"/> N/A	Annual Volume of Water Produced/Conserved by the Project <i>(in acre-feet per year)</i>	4,960 ac-ft/yr
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Readiness to Proceed <i>(select all that apply)</i>	<input checked="" type="checkbox"/> Preliminary planning or design work (30% of total project) <u>has been completed</u> or is not required. <input checked="" type="checkbox"/> Applicant is prepared to begin implementation or construction within 18 months of application deadline. <input checked="" type="checkbox"/> Applicant has acquired all water rights associated with the proposed project, or none will be required.
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

ESTIMATED COSTS

Estimated Project Costs	Low-interest Loan	\$ 18,000,000.00
	Deferred Loan	\$ 0.00
	Board Participation	\$ 0.00
	Local Contribution	\$ 0.00
	Other:	\$ 0.00
	Total Estimated Project Costs	\$ 18,000,000.00

Anticipated Commitments <i>Attach proposed schedule for multi-year commitments</i>	<input type="checkbox"/> One-Time Commitment <input checked="" type="checkbox"/> Multi-Year Commitments
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Legend

Brazos County

-  City of Bryan
-  Wellborn SUD
-  Wickson Creek SUD
-  City of Bryan CCN

