

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

**FHLM WATER SUPPLY CORPORATION**  
*CARRIZO-WILCOX REGIONAL GROUNDWATER 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
FHLM WSC	Falls, Hill, Limestone & McLennan Counties	Region G

## Entity Contact Information

Contact Person	Name	Charles Beseda		
	Title	President		
Mailing Address	FHLM WSC			
	402 HCR 3110 South			
	Penelope, Texas 76676			
Phone Number	(254) 749-5784	Fax Number	(254) 826-3368	
Email Address	charlesbeseda@yahoo.com			

## PROJECT DESCRIPTION

Name of Project <i>(As it appears in the 2016 regional water plan)</i>	Bistone (FHLM acting as sponsor) Carrizo-Wilcox Groundwater Project			
Where can the project be found in the most recent Regional Water Plan?	Project described on page:	5.24-17 & 5.38-11	Capital costs listed on page:	5.38-12 (Table 5.38-8)

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

Phase(s) Applied For	X Planning	X Acquisition	X Design	X Construction
Population Served When Fully Operational	32,170 (Year 2017)			

## Description of Proposed Project

The Falls, Hill, Limestone and McLennan Counties ('FHLM') Regional Water Facility Study evaluated the feasibility of a regional water system to replace and/or supplement the multiple smaller systems currently in service in the FHLM area. Several of the participating entities have experienced arsenic concentration violations and are in need of a water supply with arsenic levels below the Maximum Contaminant Level (MCL) of 10 parts per billion (ppb).

The water supply from the Carrizo-Wilcox Aquifer will provide the year 2040 average day water demands for Bistone MWSD, Axtell WSC, Birome WSC, Prairie Hill WSC, EOL WSC, Moore WSC, Pure WSC, LTG WSC, City of Mount Calm, M.S. WSC, RMS WSC, H&H WSC, McLennan County WCID No. 2, Ross WSC, Gholson WSC, and Chalk Bluff WSC. Two 1,000-GPM wells will be drilled in the aquifer within Limestone County. New transmission pipelines required will be sized to transport the capacity needed to meet these water demands and will be constructed as soon as possible. Booster pump stations, each containing a 100,000-gallon ground storage tank, will also be needed to help transport the water through the transmission system.

This regional alternative allows for the most flexibility of participants, as well as the opportunity for a phased construction approach; the facilities for the customers who have immediate needs for arsenic removal would be constructed immediately



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and other participants can be phased in as needed. This project would also address the DFC situation with the Trinity Aquifer by using a different groundwater source. Additionally, with this alternative using a groundwater source, the possible issues of blending surface water and groundwater would be avoided. The Carrizo-Wilcox Regional Groundwater Project is the most cost-effective alternative for a majority of participants.

<b>Emergency</b> <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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<b>Agricultural Efficiency Project?</b>	<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.)*

<b>Estimated average annual residential water bill:</b>	\$723.92	<b>Annual Median Household Income:</b>	\$41,609.38
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<b>The proposed project addresses:</b>	<input type="checkbox"/> Conservation <input type="checkbox"/> Water Loss <input checked="" type="checkbox"/> N/A	<b>Annual Volume of Water Produced/Conserved by the Project</b> <i>(in acre-feet per year)</i>	N/A
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<b>Readiness to Proceed</b> <i>(select all that apply)</i>	<input checked="" type="checkbox"/> <u>Preliminary planning</u> 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**

<b>Estimated Project Costs</b>	Low-interest Loan	\$45,000,000.00
	Deferred Loan	\$ 0.00
	Board Participation	\$ 0.00
	Local Contribution	\$ 0.00
	Other:	\$ 0.00
	<b>Total Estimated Project Costs</b>	<b>\$ 45,000,000.00</b>

<b>Anticipated Commitments</b> <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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**ATTACHMENTS – FHLM WSC  
ABRIDGED SWIFT APPLICATION**

Bistone Water



At Your Service

# Bistone Municipal Water Supply District

February 4, 2016

Mr. Bech Bruun, Chairman  
Texas Water Development Board  
1700 North Congress Avenue  
Austin, Texas 78701

Re: FHLM Water Supply Corporation : SWIFT Funding Application

Dear Mr. Brunn:

The Bistone Municipal Water Supply District ("Bistone") has been in an ongoing dialogue with FHLM Water Supply Corporation ("FHLM") and its consultants since the summer of 2015 to potentially provide potable water to various entities in Limestone County that are dealing with Safe Drinking Water Act ("SDWA") compliance for naturally occurring arsenic in their current groundwater supplies. Specifically, Bistone has been evaluating the option of an arrangement with FHLM to utilize the regional Water Management Strategy identified in section 5.38.6(a) of the 2016 Brazos G Regional Water Plan (the "Strategy") to meet a portion of the future needs of FHLM and its customers.<sup>1</sup> This strategy contemplates additional groundwater supplies from the Carrizo-Wilcox Aquifer to serve the customers of Bistone, including smaller utilities within the Municipal County-Other Water User Group.

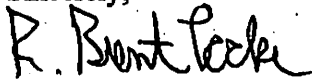
Bistone understands that FHLM is in the process of preparing a SWIFT funding application to your agency that contemplates utilizing, in some arrangement, a portion of the Strategy. This letter is intended to acknowledge Bistone's support of said application and to document its goal of working together to address the future demands and assist in SDWA compliance for many of FHLM's customers. Bistone has interim supplies in Lake Mexia, and these supplies, coupled with the Strategy, could be beneficial to FHLM and its customers. A regional approach to meeting these needs appears to be the most cost-effective and practical solution.

<sup>1</sup> See pg. 5.38-11 of the adopted 2016 Brazos G Regional Water Plan, December 2015.



Should you have any questions regarding this letter, or need more information regarding the ongoing discussions between Bistone and FHLM, please feel free to call at your convenience.

Sincerely,



R. Brent Locke  
General Manager

Cc: Mr. Wayne Wilson, Chair, Brazos G Regional Water Planning Group  
Mr. Trey Buzbee, Brazos River Authority, Brazos G Administrator  
Mr. Lann Bookout, TWDB, Brazos G Project Manager  
Mr. David Dunn, Brazos G Technical Consultant  
Mr. Brad Castleberry, Counsel

# **TWDB-FHLM Regional Water Facility Planning Study**



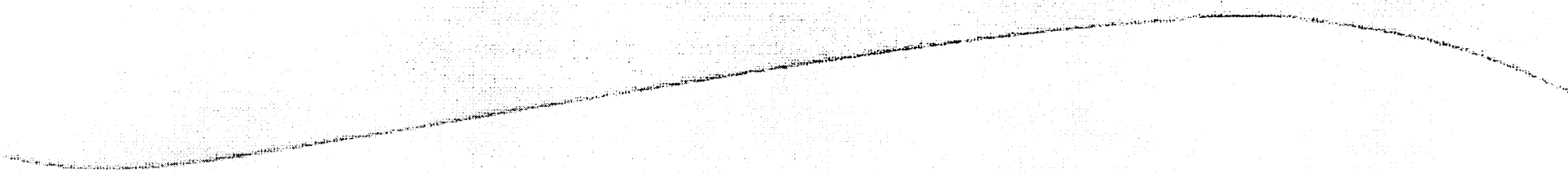
## **Project Meeting No. 4**

**Heart of Texas Council of Governments  
August 19, 2015**



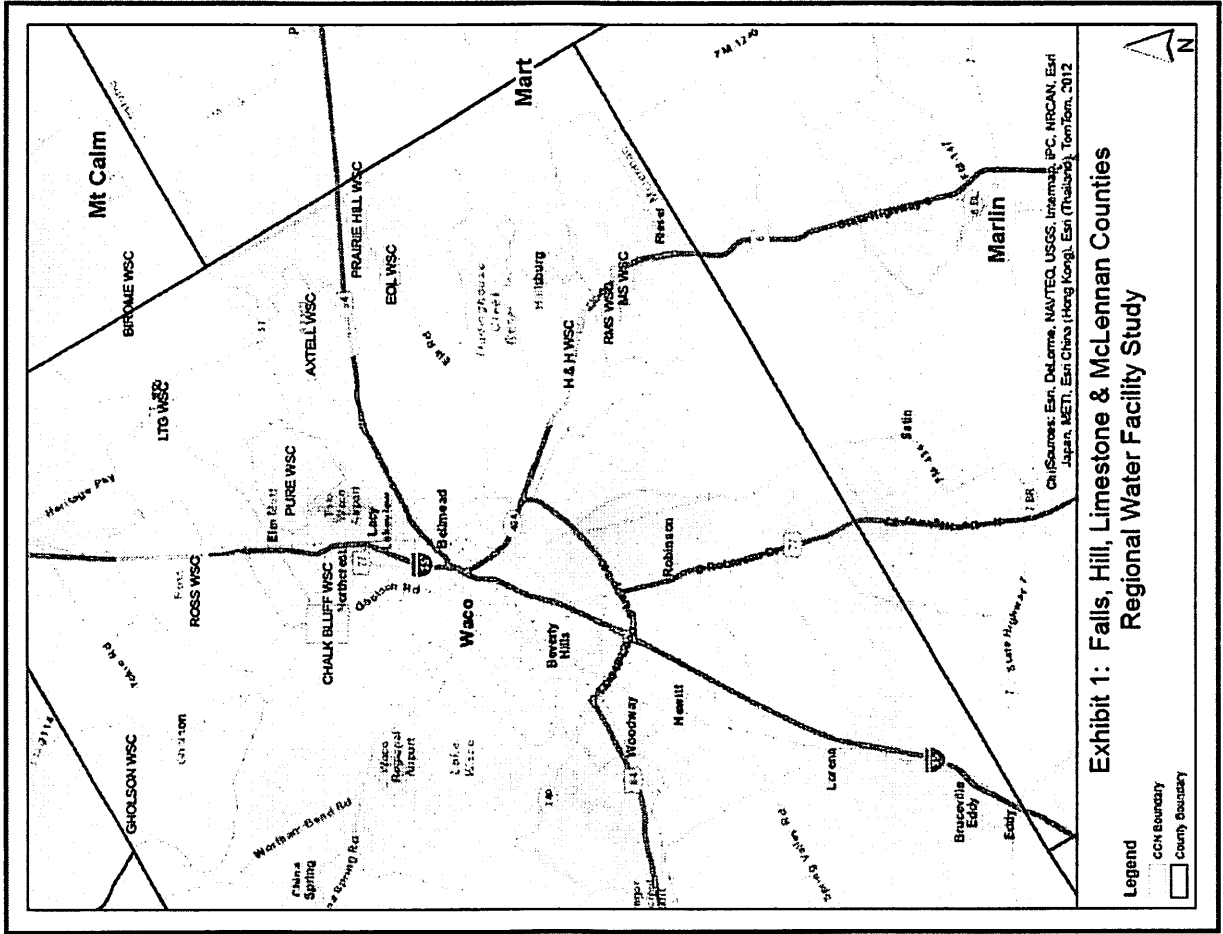
**SUSAN ROTH**  
water and wastewater consulting

# **Presentation Outline**

- ◆ **Project Scope and Schedule**
  - ◆ **Highlights of Initial Draft Report**
  - ◆ **Review Comments from Project Participants**
  - ◆ **Timeline to Finalize Draft Report**
  - ◆ **TWDB Funding Opportunities**
  - ◆ **Q&A Discussion/Next Steps**
- 



# FHLM Counties - Study Area



# **Project Participants**

- ◆ **Texas Water Development Board**
- ◆ **FHLM Water Supply Corporation (primary applicant)**
- ◆ **Falls County**
- ◆ **Hill County**
- ◆ **Limestone County**
- ◆ **McLennan County**
- ◆ **Brazos River Authority**
- ◆ **Southern Trinity Groundwater Conservation District**
- ◆ **City of Mart**

# Project Participants (cont.)

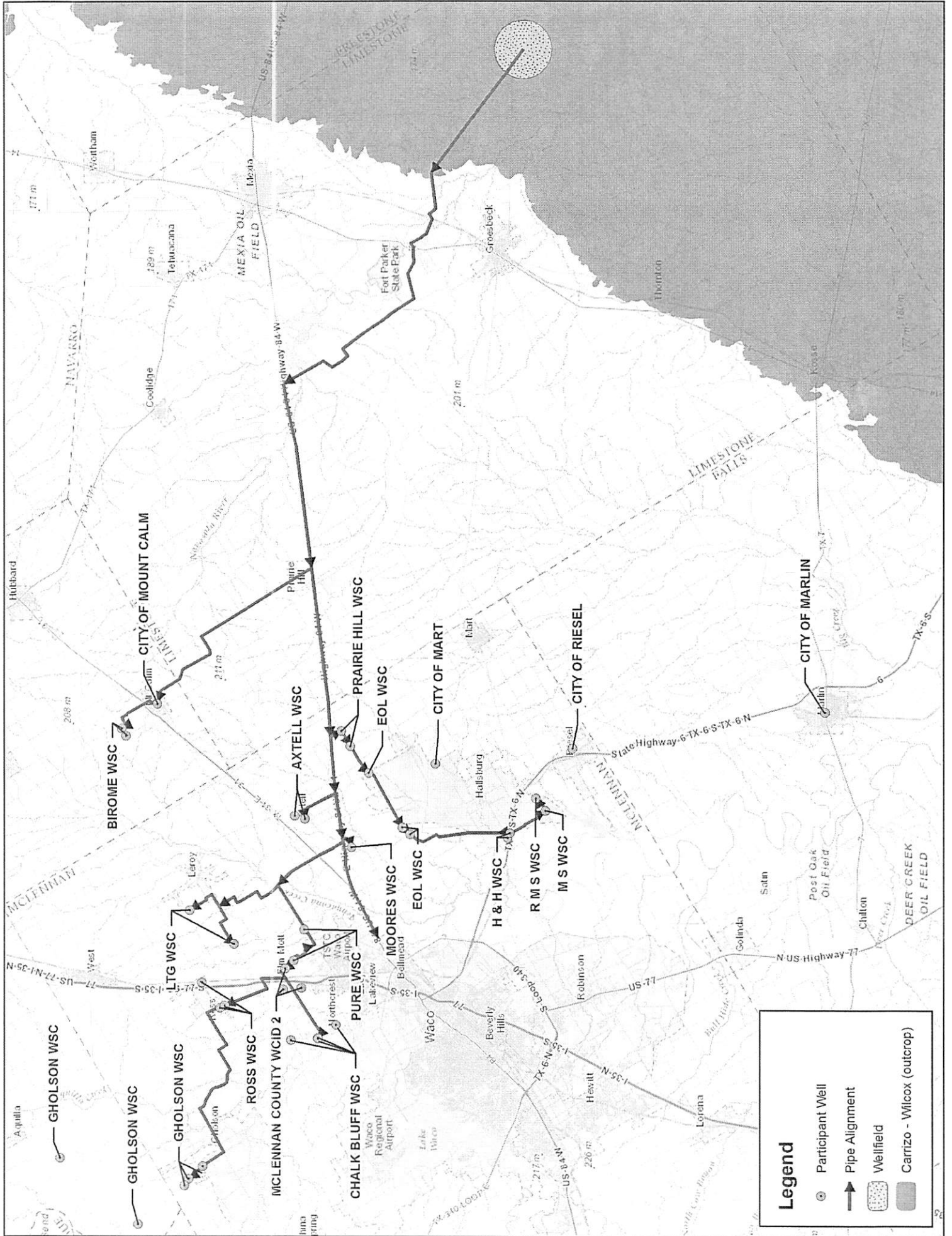
- ◆ **City of Marlin**
- ◆ **City of Mount Calm**
- ◆ **Axtell WSC**
- ◆ **Birome WSC**
- ◆ **Chalk Bluff WSC**
- ◆ **EOL WSC**
- ◆ **Gholson WSC**
- ◆ **H&H WSC**
- ◆ **LTG WSC**
- ◆ **M.S. WSC**

# **Project Participants (cont.)**

- ◆ **McLennan County WCID No. 2**
- ◆ **Prairie Hill WSC**
- ◆ **Pure WSC**
- ◆ **RMS WSC**
- ◆ **Ross WSC**
- ◆ **Moore Water System**
- ◆ **Cargill Meat Solutions**
- ◆ **Sanderson Farms**
- ◆ **Heart of Texas Council of Governments**

# Study Focus Areas

- ◆ **Feasibility of developing a regional water system to replace and/or supplement the multiple systems currently in service;**
- ◆ **Options to provide a reliable water supply in regards to location/type of intake structure;**
- ◆ **Interconnections of existing water systems, where needed, to provide redundancy in case of system failures; and,**
- ◆ **Options for smaller water systems that do not want to be in the water utility business to connect to a larger water system.**



**Legend**

- Participant Well
- Pipe Alignment
- Wellfield
- Carrizo - Wilcox (outcrop)

**FHLM WSC Abridged SWIFT Application  
Supporting Data**



<b>Entity</b>	<b>2015 Population</b>	<b>2017 Population*</b>	<b>2020 Population</b>	<b>Avg. Annual Residential Water Bill**</b>
Axtell WSC	1574	<b>1604</b>	1634	\$ 708.00
Birome WSC	1556	<b>1581</b>	1606	\$ 1,158.00
Bistone MWSD (Mexia)	8048	<b>8348</b>	8647	
Chalk Bluff WSC	3660	<b>3810</b>	3960	\$ 654.00
City of Mount Calm	325	<b>328</b>	330	\$ 480.00
EOL WSC	1699	<b>1738</b>	1777	\$ 552.00
Gholson WSC	3033	<b>3063</b>	3093	\$ 618.72
H&H WSC	1504	<b>1543</b>	1581	
LTG WSC	1466	<b>1500</b>	1533	\$ 768.00
McLennan Co. WCID #2	1760	<b>1765</b>	1769	
Moore Water System	247	<b>248</b>	248	
M.S. WSC	684	<b>686</b>	687	\$ 696.00
Prairie Hill WSC	1840	<b>1863</b>	1886	
Pure WSC	707	<b>709</b>	711	\$ 1,074.00
RMS WSC	1039	<b>1082</b>	1124	\$ 696.00
Ross WSC	2250	<b>2306</b>	2361	\$ 558.36
<b>TOTAL</b>		<b>32170</b>		<b>\$ 723.92</b>

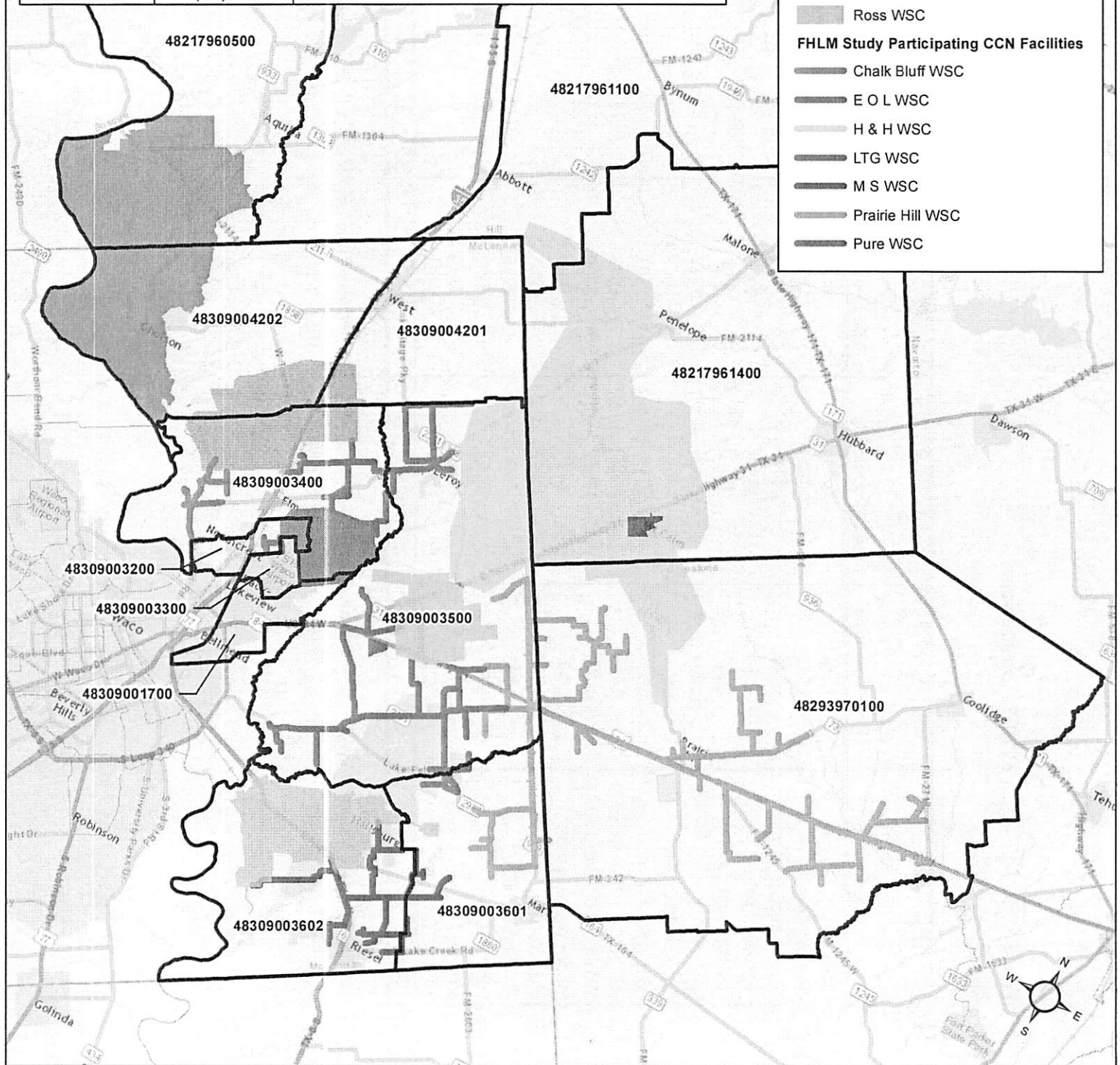
\* Population data based on TWDB-FHLM Counties Regional Water Facility Planning Study (Dec. 2015)

\*\* Average annual residential water bill based on 10,000 gallons per month usage

Census Tract ID	Median Income	Associated Entities
48309004202	\$46,336	Gholson, Ross
48309004201	\$37,226	Ross
48309003300	\$17,472	Pure
48309003200	\$39,450	Pure
48309001700	\$35,192	Pure
48309003602	\$43,167	H&H, MS
48309003601	\$40,781	MS, EOL, Prairie Hill
48309003500	\$46,422	Moore, EOL, Axtell, Birome, LTG, Prairie Hill
48309003400	\$52,051	Ross, Chalk Bluff, McLennan Co WCID #2, Pure, LTG
48293970100	\$39,615	Birome, Prairie Hill
48217961400	\$41,071	Birome, City of Mount Calm
48217960500	\$50,034	Gholson, Ross
48217961100	\$52,105	Birome

### Legend

-  Census Tract
- FHLM Study Participating CCNs**
-  Axtell WSC
-  Birome WSC
-  City of Marlin
-  City of Mount Calm
-  Gholson WSC
-  H&H WSC
-  Moore WSC
-  McLennan County WCID #2
-  Pure WSC
-  Ross WSC
- FHLM Study Participating CCN Facilities**
-  Chalk Bluff WSC
-  E O L WSC
-  H & H WSC
-  LTG WSC
-  M S WSC
-  Prairie Hill WSC
-  Pure WSC





**FHLM Regional Water Facility Planning Study  
Population Projections for Study Area**

Entity	Annual Growth Projected by Entity	POPULATION						
		2010	2015	2020	2025	2030	2035	2040
<b>Falls County</b>								
TWDB Projections (2011 Region G Water Plan)	0.59%	19600	20242	20884	21540	22196	22773	23350
-- County Other (Brazos Basin)	-2.65%	3246	2939	2631	2316	2001	1725	1449
Texas State Data Center Projections (0.5 Migration)	0.20%	17866	18267	18667	18838	19008	18981	18953
Texas State Data Center Projections (1.0 Migration)	0.41%	17866	18551	19236	19679	20121	20167	20213
U.S. Census Bureau Projections (linear)	-0.69%	17866	17304	16742	16180	15618	15056	14494
<b>Hill County</b>								
TWDB Projections (2011 Region G Water Plan)	0.47%	33416	34182	34947	35813	36679	37543	38407
-- County Other (Brazos Basin)	1.04%	2074	2190	2305	2436	2566	2697	2827
Texas State Data Center Projections (0.5 Migration)	0.58%	35089	36453	37816	39041	40266	41026	41786
Texas State Data Center Projections (1.0 Migration)	0.83%	35089	37219	39349	41146	42943	43955	44967
U.S. Census Bureau Projections (linear)	-0.24%	35089	34683	34277	33871	33465	33059	32653
<b>Limestone County</b>								
TWDB Projections (2011 Region G Water Plan)	0.43%	23322	24133	24944	25386	25828	26167	26505
-- County Other (Brazos Basin)	-0.54%	7384	7209	7034	6851	6667	6476	6284
Texas State Data Center Projections (0.5 Migration)	0.58%	23386	24262	25137	25888	26638	27215	27792
Texas State Data Center Projections (1.0 Migration)	0.81%	23386	24736	26085	27202	28319	29038	29756
U.S. Census Bureau Projections (linear)	-0.08%	23386	23294	23202	23110	23018	22926	22834
<b>McLennan County</b>								
TWDB Projections (2011 Region G Water Plan)	0.66%	231882	241140	250398	258200	266002	274090	282177
-- County Other (Brazos Basin)	0.15%	26101	26320	26538	26723	26908	27101	27293
Texas State Data Center Projections (0.5 Migration)	0.70%	234906	243704	252501	262533	272564	281136	289707
Texas State Data Center Projections (1.0 Migration)	0.86%	234906	245214	255521	268265	281009	292420	303830
U.S. Census Bureau Projections (linear)	0.79%	234906	245305	255703	266102	276500	286899	297297
<b>City of Mart</b>								
TWDB Projections	0.7%	2475	2577	2679	2765	2851	2940	3029
City's Projections for existing city limits	0.7%	2426	2512	2601	2694	2789	2888	2991
Proposed Developments within ETJ & outside city limits		0	0	0	0	0	0	0
Sum for City of Mart Area	0.7%	2426	2512	2601	2694	2789	2888	2991
<b>City of Marlin</b>								
TWDB Projections	0.4%	6862	7009	7155	7305	7455	7587	7718
City's Projections for existing city limits	0.4%	5967	6087	6210	6335	6463	6593	6726
Proposed Developments within ETJ & outside city limits		0	0	0	0	0	0	0
Sum for City of Marlin Area	0.4%	5967	6087	6210	6335	6463	6593	6726

Entity	Annual Growth Projected by Entity	POPULATION						
		2010	2015	2020	2025	2030	2035	2040
<b>City of Mount Calm</b>								
City's Projections for existing city limits	0.3%	320	325	330	335	340	345	350
Proposed Developments within ETJ		0	0	0	0	0	0	0
Sum for City of Mount Calm Area	0.3%	320	325	330	335	340	345	350
<b>Axtell WSC</b>								
WSC Projections for existing service area	0.7%	1513	1574	1634	1695	1755	1816	1876
Proposed Developments		0	0	0	0	0	0	0
Sum for Axtell WSC Area	0.7%	1513	1574	1634	1695	1755	1816	1876
<b>Birome WSC</b>								
WSC Projections for existing service area	0.6%	1506	1556	1606	1656	1706	1756	1806
Proposed Developments		0	0	0	0	0	0	0
Sum for Birome WSC Area	0.6%	1506	1556	1606	1656	1706	1756	1806
<b>Chalk Bluff WSC</b>								
TWDB Projections	1.6%	3487	3884	4280	4614	4948	5295	5641
WSC Projections for existing service area	1.6%	3432	3585	3960	4335	4710	5085	5460
Proposed Developments		0	75	0	0	0	0	0
Sum for Chalk Bluff WSC Area	1.6%	3432	3660	3960	4335	4710	5085	5460
<b>EOL WSC</b>								
WSC Projections for existing service area	0.9%	1625	1699	1777	1858	1944	2033	2126
Proposed Developments		0	0	0	0	0	0	0
Sum for EOL WSC Area	0.9%	1625	1699	1777	1858	1944	2033	2126
<b>Gholson WSC</b>								
WSC Projections for existing service area	0.4%	2985	3033	3093	3153	3213	3273	3333
Proposed Developments		0	0	0	0	0	0	0
Sum for Gholson WSC Area	0.4%	2985	3033	3093	3153	3213	3273	3333
<b>H&amp;H WSC</b>								
WSC Projections for existing service area	1.0%	1431	1504	1581	1661	1746	1835	1929
Proposed Developments		0	0	0	0	0	0	0
Sum for H&H WSC Area	1.0%	1431	1504	1581	1661	1746	1835	1929
<b>LTG WSC</b>								
WSC Projections for existing service area	0.9%	1396	1466	1533	1601	1668	1735	1802
Proposed Developments		0	0	0	0	0	0	0
Sum for LTG WSC Area	0.9%	1396	1466	1533	1601	1668	1735	1802
<b>M.S. WSC</b>								
WSC Projections for existing service area	0.1%	681	684	687	691	694	697	701
Proposed Developments		0	0	0	0	0	0	0

Entity	Annual Growth Projected by Entity	POPULATION						
		2010	2015	2020	2025	2030	2035	2040
Sum for M.S. WSC Area	0.1%	681	684	687	691	694	697	701
<b>McLennan County WCID No. 2</b>								
WCID Projections for existing service area	0.1%	1751	1760	1769	1778	1787	1795	1804
Proposed Developments		0	0	0	0	0	0	0
Sum for McLennan County WCID No. 2 Area	0.1%	1751	1760	1769	1778	1787	1795	1804
<b>Prairie Hill WSC</b>								
WSC Projections for existing service area	0.5%	1794	1840	1886	1934	1982	2032	2084
Proposed Developments		0	0	0	0	0	0	0
Sum for Prairie Hill WSC Area	0.5%	1794	1840	1886	1934	1982	2032	2084
<b>Pure WSC</b>								
WSC Projections for existing service area	0.1%	707	707	711	715	718	722	725
Proposed Developments		0	0	0	0	0	0	0
Sum for Pure WSC Area	0.1%	707	707	711	715	718	722	725
<b>RMS WSC (City of Riesel)</b>								
Projections for existing service area	1.6%	960	1039	1124	1217	1317	1425	1542
Proposed Developments		0	0	0	0	0	0	0
Sum for RMS WSC Area	1.6%	960	1039	1124	1217	1317	1425	1542
<b>Ross WSC</b>								
WSC Projections for existing service area	1.0%	2144	2250	2361	2478	2601	2729	2864
Proposed Developments		0	0	0	0	0	0	0
Sum for Ross WSC Area	1.0%	2144	2250	2361	2478	2601	2729	2864
<b>Moore Water System</b>								
Projections for existing service area	0.1%	246	247	248	250	251	252	253
Proposed Developments		0	0	0	0	0	0	0
Sum for Moore Water System Service Area	0.1%	246	247	248	250	251	252	253
<b>TOTAL POPULATION - PROJECT PARTICIPANTS</b>	<b>0.7%</b>	<b>30885</b>	<b>31944</b>	<b>33113</b>	<b>34384</b>	<b>35683</b>	<b>37012</b>	<b>38373</b>

**From:** [Susan Roth](#)  
**To:** [SWIFT](#)  
**Subject:** TWDB 2016 SWIFT Program - FHLM WSC Abridged Application  
**Date:** Friday, February 05, 2016 5:07:57 PM  
**Attachments:** [FHLM SWIFT Abridged Application FINAL 2-5-16.pdf](#)

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Please see the attached SWIFT Abridged Application for FHLM WSC. Let me know if you have any questions or need additional information for their application.

Best regards,  
Susan

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Susan K. Roth, P.E., PMP  
Susan Roth Consulting, LLC  
[512.796.6692](tel:512.796.6692) (cell)  
[512.231.9851](tel:512.231.9851) (fax)  
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