SOAH DOCKET NO. 582-15-2082
TCEQ DOCKET NO. 2015-0069-MSW

APPLICATION OF 130 ENVIRONMENTAL PARK, LLC FOR PROPOSED PERMIT NO. 2383	§ § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

PROTESTANTS' EXHIBIT 3

PREFILED TESTIMONY OF

JESSICA NEYMAN

ON BEHALF OF PROTESTANT EPICC

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Exhibit No.	Description	Date
Exhibit 3-A	Image showing distance of landfill to school	Not dated.
Exhibit 3-B	Review of Demographic Information	August 18, 2014
Exhibit 3-C	LISD Elementary Enrollment and Capacity	June 25, 2016 (date web page accessed)
Exhibit 3-D	Site Acquisition Report	September 6, 2014
Exhibit 3-E	KXAN News Article	January 31, 2014
Exhibit 3-F	Site Layout Plan for Alma Brewer Strawn Elementary	April 23, 2015

I. INTRODUCTION

Q: Please state your name.

A: Jessica Neyman.

Q: Please state your address.

A: 209 S. Church St., Unit D, Lockhart, Texas 78644

Q: Please describe your occupation.

A: Director of Human Resources for KIPP Austin Public Schools.

Q: Please describe your educational background.

A: I have a bachelor's degree in psychology, with an emphasis on child development, as well as a minor in sociology. I also have a juris doctorate, with an emphasis on child advocacy and school law.

Q: Are you a member of the organization Environmental Protection in the Interest of Caldwell County, or EPICC?

A: Yes.

Q: Are you a member of the Lockhart Independent School District School Board of Trustees?

A: Yes.

Q: How long have you been a member?

A: I was first elected in November 2012, and my term expires in 2016.

II. BACKGROUND

Q: Please describe your overall concerns with the application for the landfill permit.

A: My concerns are related to traffic safety, air quality, community water quality, and the preservation of local community and culture.

Q: Would you describe your concerns as similar to those of EPICC as you understand the concerns of the officers and members of the organization?

A: Yes, we all care deeply about environmental issues that impact our community. I am especially aware of the risks related to the proposed landfill and our school district staff and student population. I have worked and lived in the area since 2008 and have served, and continue to serve on the Lockhart ISD board. Lockhart ISD is the largest employer in Caldwell County, and so I care deeply about the well-being of our staff, including their safety on the way to and from work, as well as their work environment. We (EPICC members) also want the best for the future of our community in terms of Lockhart being an attractive destination for families, which has a positive impact on our school district's Average Daily Attendance ("ADA") funding. The proposed landfill also causes grave concerns in terms of being an eyesore to visitors that enter our community. We (members of EPICC) all want to maintain a community with clean air, clean drinking water, respect of our environment, and I especially take pride in our Lockhart Lions in every sense.

III. ALMA BREWER STRAWN ELEMENTARY

Q: Can you identify what has been marked as Protestant's Exhibit 3-A?

A: It is a map showing the location of the new elementary campus for Lockhart Independent School District, known as Alma Brewer Strawn Elementary School

("ABS"), and its proximity to the proposed landfill site. The map shows the landfill property is 2.6 miles from ABS.

Q: Please explain the circumstances surrounding the decision to locate this new elementary school at this location.

A: ABS is the new elementary campus for Lockhart Independent School District, which was approved by voters in a bond election in 2014. Construction began in 2015 and will be complete this summer. The school will be open for classes in August of this year. ABS was constructed to meet the needs of a very vulnerable population – students who were traveling over two hours per day one-way on a school bus. There are large (and growing) multi-family lots with manufactured homes in this area. Additionally, LISD experienced 68% of the entire Lockhart ISD student population growth in this area. And so we had to bring district services closer to these students, but of course were dismayed to learn that this is also so close to the proposed landfill site.

Q: Were you a member of the LISD Board of Trustees during the decision making process to determine the need for a new elementary campus?

A: Yes, and I have participated throughout the school's approval, planning, construction, and student zoning and teacher staffing stages, and therefore have specific knowledge about the purpose & development of the school and its operations.

Q: Can you identify what has been marked as Protestant's Exhibit 3-B?

A: This is a page from the LISD website that states that pre-K through 5th grade enrollment has exceeded 2,600 students and that the combined functional capacity of LISD elementary schools prior to construction of ABS was just under 2,600.

PROTESTANTS OFFER EXHIBIT 3-B.

Q: Can you identify what has been marked as Protestant's Exhibit 3-C?

A: This is a demographic report of LISD. It shows the dramatic increase in enrollment rates at LISD since 2008.

PROTESTANTS OFFER EXHIBIT 3-C.

Q: Can you identify what has been marked as Protestant's Exhibit 3-D?

A: This is a Site Acquisition Report that demonstrates that 68% of the student growth in the entire district was concentrated in the Lytton Springs area, which is also the location of the proposed landfill site.

PROTESTANTS OFFER EXHIBIT 3-D.

Q: Could you explain the variables that played a role in the decision to create ABS Elementary School at its proposed location?

A: The school was approved through a bond for a $13 million budget to meet the needs of the growing student population. Enrollment for pre-kindergarten through 5th grade had reached over 2,600 students, and the board needed to act on building a new school. We, the school board members, struggled with the need for a new elementary school in this particular area of Caldwell County and the knowledge that a landfill was proposed in the same area. I found it so difficult to, in good conscience, construct a much-needed school in a location that would possibly put

students who are already experiencing language barriers, poverty, and health challenges in such close proximity to the threat of hazards to their health in terms of industrial truck traffic and poor air/water quality. But the data reflected that this is where a new school was most needed.

IV. TRAFFIC SAFETY

Q: Describe the location of ABS Elementary School in relation to the nearby roads.

A: ABS is on the major highway of 1185, which is part of an important bus route with the District. And the 1185 and 183 intersection that is used by school buses, and would be used by landfill-related industrial truck traffic, has been the location of several devastating accidents in our community. In addition, students stand on this route in the dark during winter months, and we had a student hit on this road who was transported by life-flight.

Q: Can you identify what has been marked as Protestant's Exhibit 3-E?

A: This is a news article from KXAN News that discusses the high incidence of deadly accidents at the intersection of 1185 and 183. This is one of the pieces of information that forms the basis for my concerns regarding increased truck traffic on a road and intersection that will be frequently used by school buses.

PROTESTANTS OFFER EXHIBIT 3-E.

Q: Will ABS Elementary School be transporting schoolchildren on school buses on these roads?

A: Yes.

Q: How would you describe the driving conditions of the roads on which the ABS Elementary School buses will transport schoolchildren and what is your basis for your description?

A: These are rural, two-lane roads. Sadly, the intersection approaching this community is on a precarious slope, which has caused cars to run the intersection. Adding numerous industrial trucks to this intersection and stretch of road will add to the traffic hazards that exist in that area. The basis of my description is from personal driving experience, local news reports, and anecdotes of family and friends.

Q: Please describe your concern with the landfill's proximity to ABS Elementary School as it relates to traffic safety.

A: Sadly, school buses do not have seat belts. Therefore, one horrific accident with a garbage truck would place students' lives at serious risk. We also have staff members in smaller vehicles who will have to navigate dangerous roads, a well-known dangerous intersection, and the newly introduced interplay of at least 150+ garbage trucks per day.

V. SURROUNDING LAND CHARACTERISTICS

Q: How would you describe the visual characteristics of the land under and surrounding ABS Elementary School?

A: The ABS site is idyllic. Our county is still considered rural, and ABS captures all that is beautiful and sacred about this wide-open land. You can see far, and often times spot wildlife. At ABS' opening, in true rural central Texas fashion, people

arrived on horses to attend. Ms. Strawn herself was a beloved teacher who grew up riding her horse to school. .

Q: Can you please identify what has been marked as Protestant's Exhibit 3-F?

A: This is a site layout plan for ABS. It was part of a presentation by Huckabee, Inc., an architecture firm, and it is intended to demonstrate the visual aspect of the new ABS school. The site layout plan demonstrates where the play areas are that children will use for recess and other recreational activities.

PROTESTANTS OFFER EXHIBIT 3-F.

Q: Please describe the planned use of outdoor areas for schoolchildren at ABS Elementary School.

A: The children of ABS will have access to daily recess, as well as outdoor physical education activities. In addition, ABS was designed with an outdoor pavilion area to encourage outdoor learning experiences. So, it is anticipated that that the children will spend much of their time outdoors.

Q: Do you have concerns about the students spending time outdoors at ABS if a landfill is constructed, as proposed?

A: Yes, I am concerned that ABS staff and students will be subjected to foul odors on a regular basis depending on the prevailing winds in relation to the proposed landfill. The school is located on wide-open flat ranch land, with no slopes or hills that block air from traveling. And even more importantly than the odors, I am concerned about the wind-blown waste and air contaminants that will be associated with the increased industrial truck traffic and with these odors,

especially if the operator does not use daily soil cover I often state in my school board role that first and foremost we need to make sure that our students have proper physical health to be able to excel at academics. And the proposed landfill strikes me as completely counter to this commitment to our students. Again, this is a uniquely vulnerable student population.

VII. LOCAL COMMUNITY AND CULTURE

Q: Describe your observations and concerns regarding the potential impacts of the proposed landfill on the surrounding community and culture.

A: The bottom line is that this county has a lot of pride and has raised generations of children who have enjoyed small-town life, wide-open spaces, horses, ranching, BBQ, and events on the town square. The Texas Legislature also crowned Lockhart as the home of the official BBQ of Texas, and so we enjoy lots of tourism. In addition, the small town façade regularly lures commercial and movie makers to our town. You just can't find a town like Lockhart very often. So, when you introduce the idea of a 17-story landfill at the gateway to our community, this just doesn't fit with the long-standing culture Any potential financial gains that the landfill might bring won't be outweighed by costs to repair roads damaged by industrial trucks, loss of tourism, and loss of new families moving in. It seems to me that we're really one of the last towns around Austin to remain authentic, and we'd like to preserve this unique small town in many ways, with the understanding that growth isn't necessarily bad, but we should have a choice to promote responsible and sustainable growth. And we should of course

be allowed to protect our environment. In summary, 130 Environmental Park's aspirations are not congruent with any of our values, sense of community, and culture.

Q: Do you have any other concerns related to the landfill?

A: I believe that the proposed site is wrong for a landfill, or any disposal of wastes, because of its proximity to ABS Elementary School and the risks this poses to the children and staff. My concerns run the gamut from air quality, water quality, traffic safety for both students and staff, and the impact on quality of life for the students, their families, and our staff.

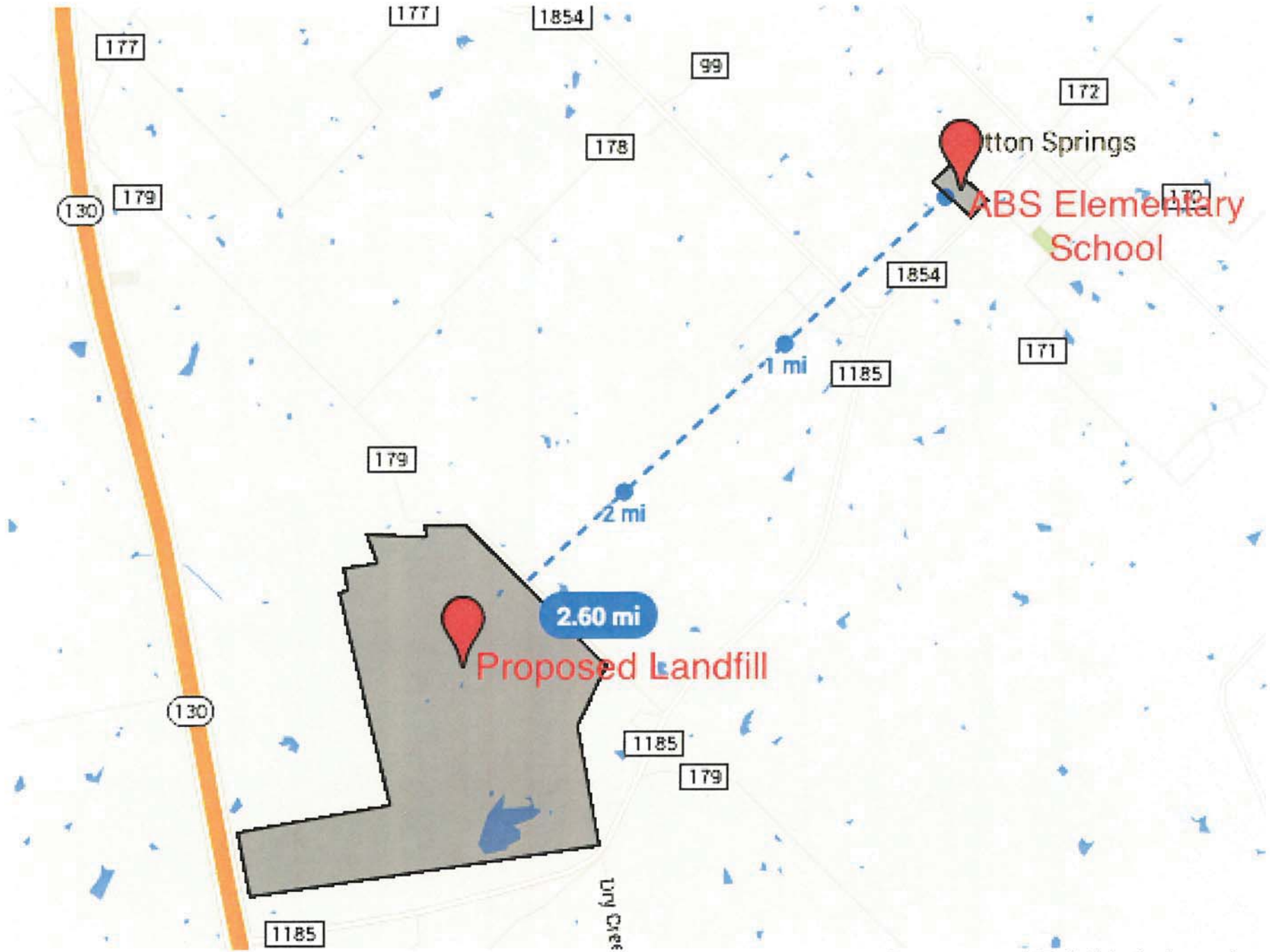
VIII. CONCLUSIONS

Q: What are you asking the Commission to do with this application?

A: Deny it.

Q: Does this conclude your testimony?

A: Yes, although I reserve the right to supplement this testimony.



Protestants' Exhibit 3-A, p. 1

Review of Demographic Information

August 18, 2014

Report Contents

- Review of 2012 Demographic Report highlights
- Summary of 2013-2014 Enrollment
- Geocoding of Student Residences
- Current Number of Elementary Classrooms Available

Review of 2012 Demographic Report Highlights

- Top 10 Employers
  - Lockhart ISD
  - Serta
  - Wal-Mart
  - The GEO Group
  - HEB
  - Pegasus
  - City of Lockhart
  - Parkview Nursing & Rehabilitation
  - Chisholm Trail Nursing & Rehabilitation
  - Livengood Feeds

Employment – Industry Distribution

Fig. 20

Employment- Industry Distribution

Austin-Round Rock-San Marcos MSA

	Oct. '12 Share	May '10 Share	Dec.'09 Share	Dec.'05 Share
Total Non-farm employment	100.0%	100.0%	100.0%	100.0%
Education & Health Services	11.5%	11.2%	10.6%	9.6%
Financial Activities	5.7%	5.8%	5.8%	5.9%
Government	20.8%	22.3%	21.9%	20.5%
Information	2.5%	2.5%	2.6%	3.2%
Leisure & Hospitality	11.4%	11.9%	11.0%	10.1%
Manufacturing	6.2%	6.1%	6.3%	8.3%
Natural Resources, Mning, & Construction	5.1%	5.1%	5.6%	6.1%
Nonclassified	0.0%	0.0%	0.1%	0.1%
Other Services	4.2%	4.4%	3.6%	3.4%
Professional & Business Services	15.6%	13.7%	14.2%	14.2%
Trade, Transportation & Utilities	17.1%	17.0%	18.2%	18.6%

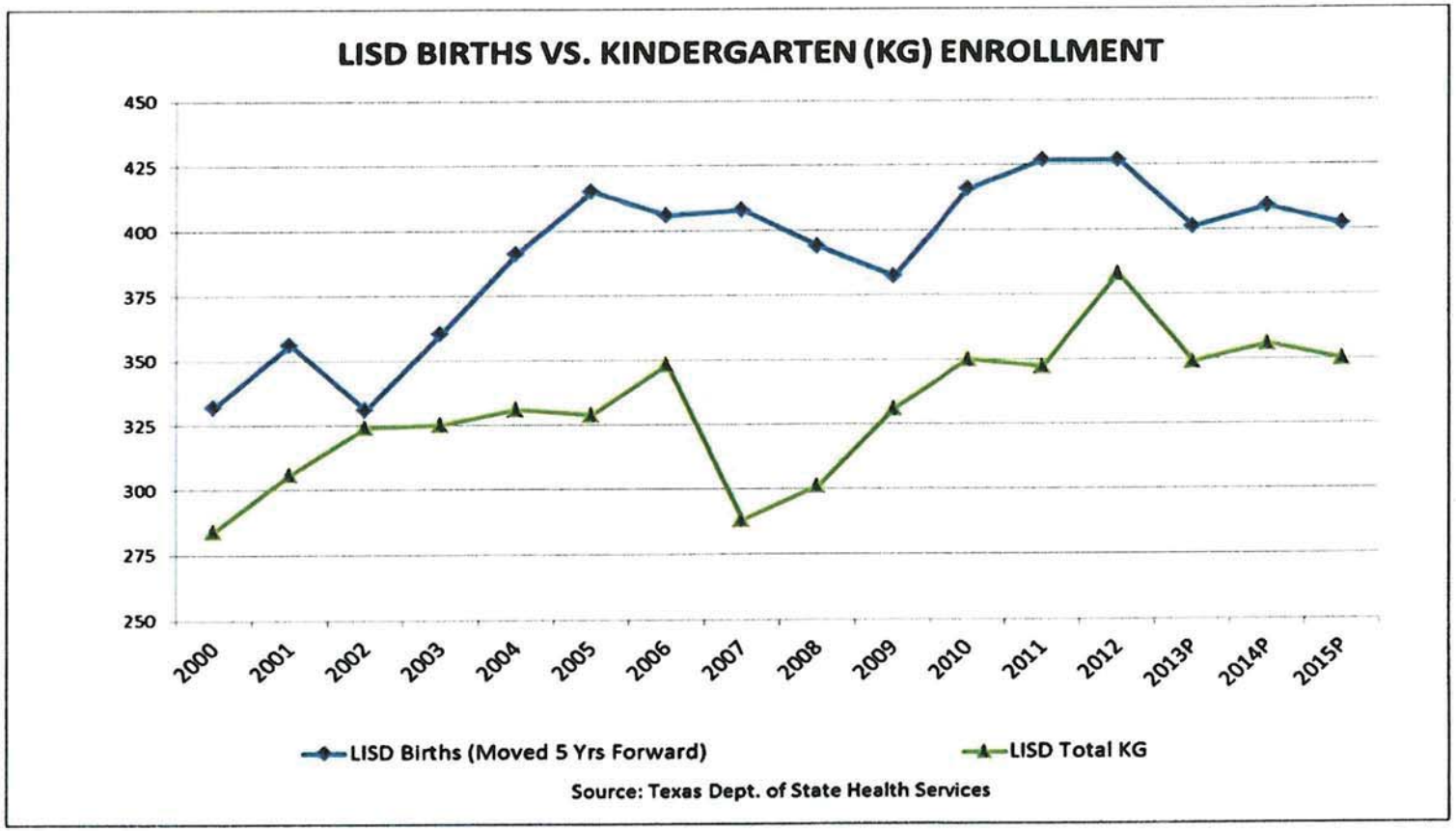
Source: Texas Workforce Commission: Monthly Economic Profile

2012 Report Highlights Continued

- Little new home construction
- Developments planned
  - Summerside
  - Windridge
  - Clearfork Estates
  - Meadows at Clearfork
  - The Ridge

Birth Rates

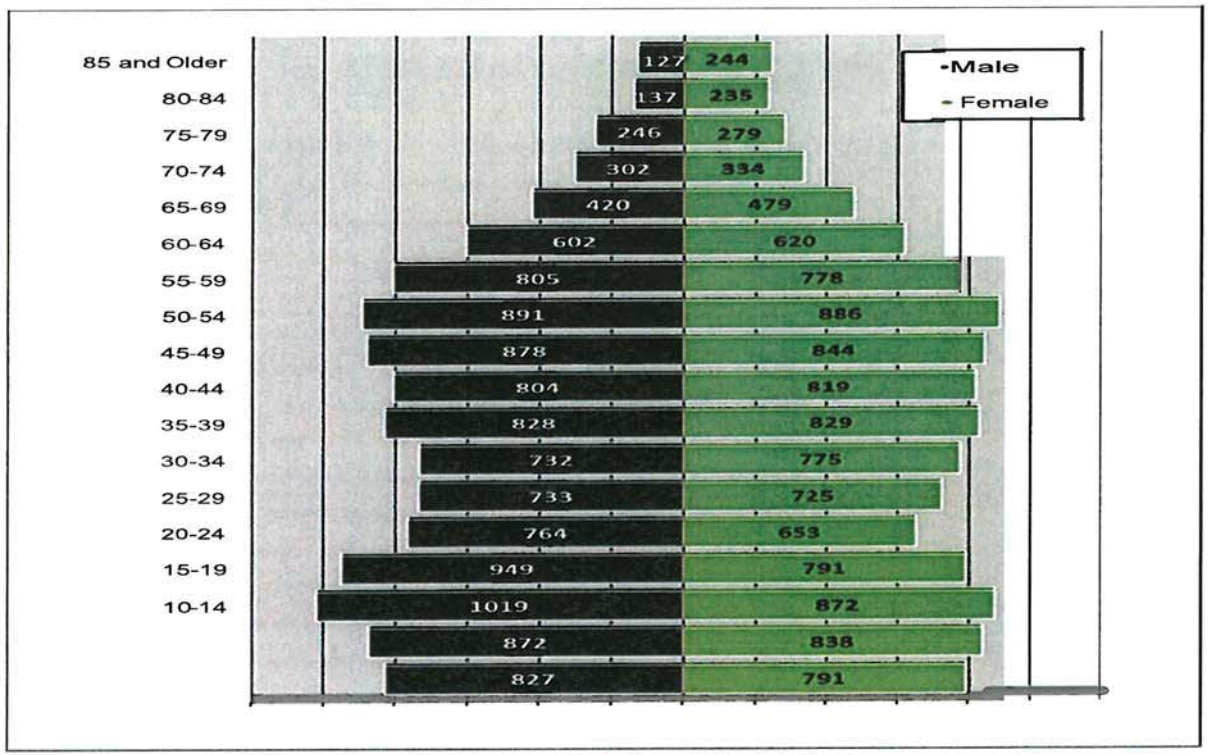
Fig. 16



16660 North Dallas Parkway, Suite 1200
Dallas, Texas 75248

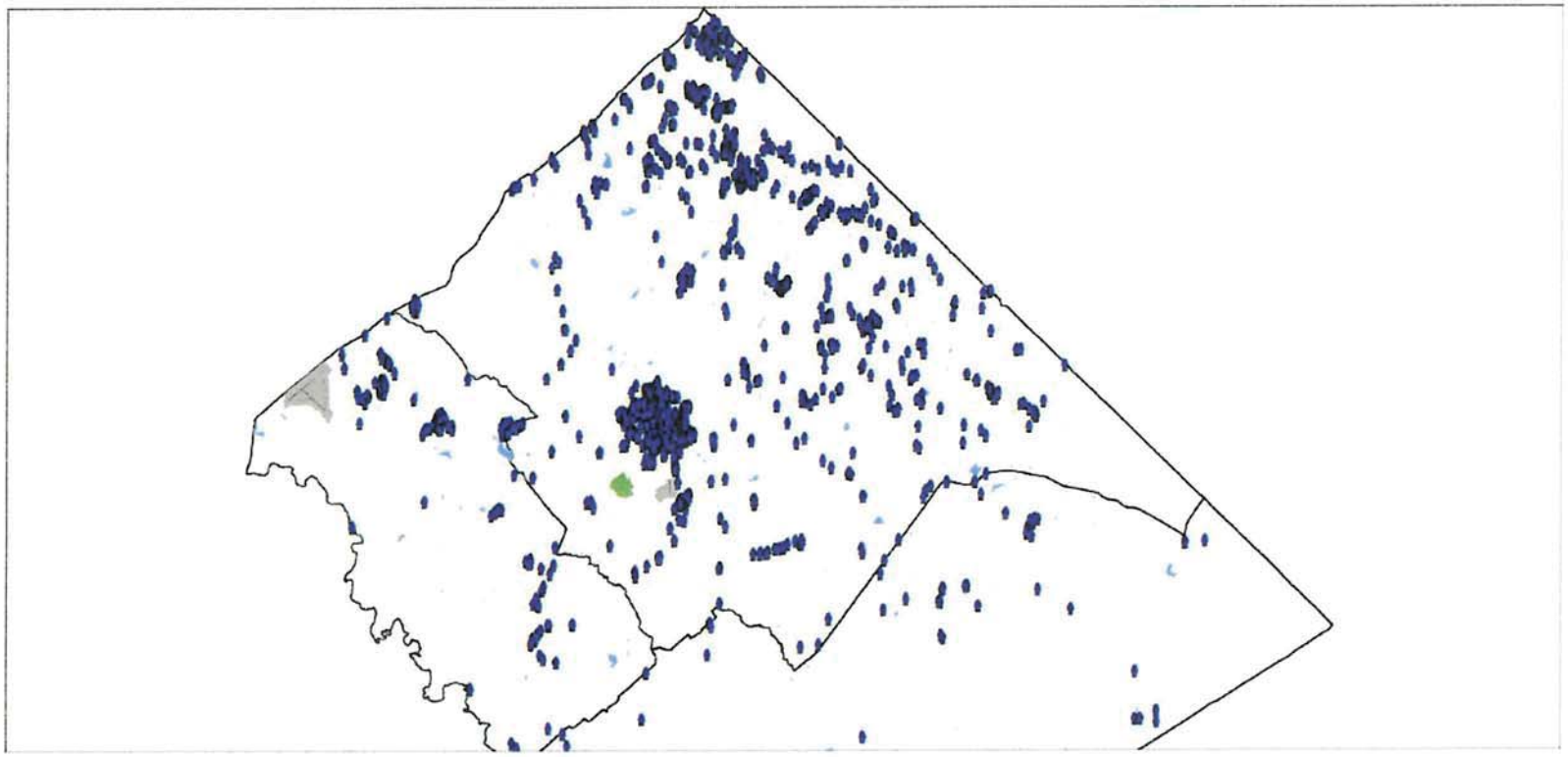
Age of Residents in District

Fig. 4



16660 North Dallas Parkway, Suite 1200
Dallas, Texas 75248

Registered Bus Riders in District



Population Growth

Age Group	2000	2010	Numeric Chg	% Chg	Avg Annual Growth
0-4	1,452	1,618	166	11.4%	1.14%
5-9	1,517	1,710	193	12.7%	1.27%
10-14	1,725	1,891	166	9.6%	.96%
15-17	1,094	1,165	71	6.5%	.65%
Total under 18	**5,788**	**6,384**	**596**	**10.3%**	**1.03%**
Total Age 5-17	4,336	4,766	430	9.9%	.99%

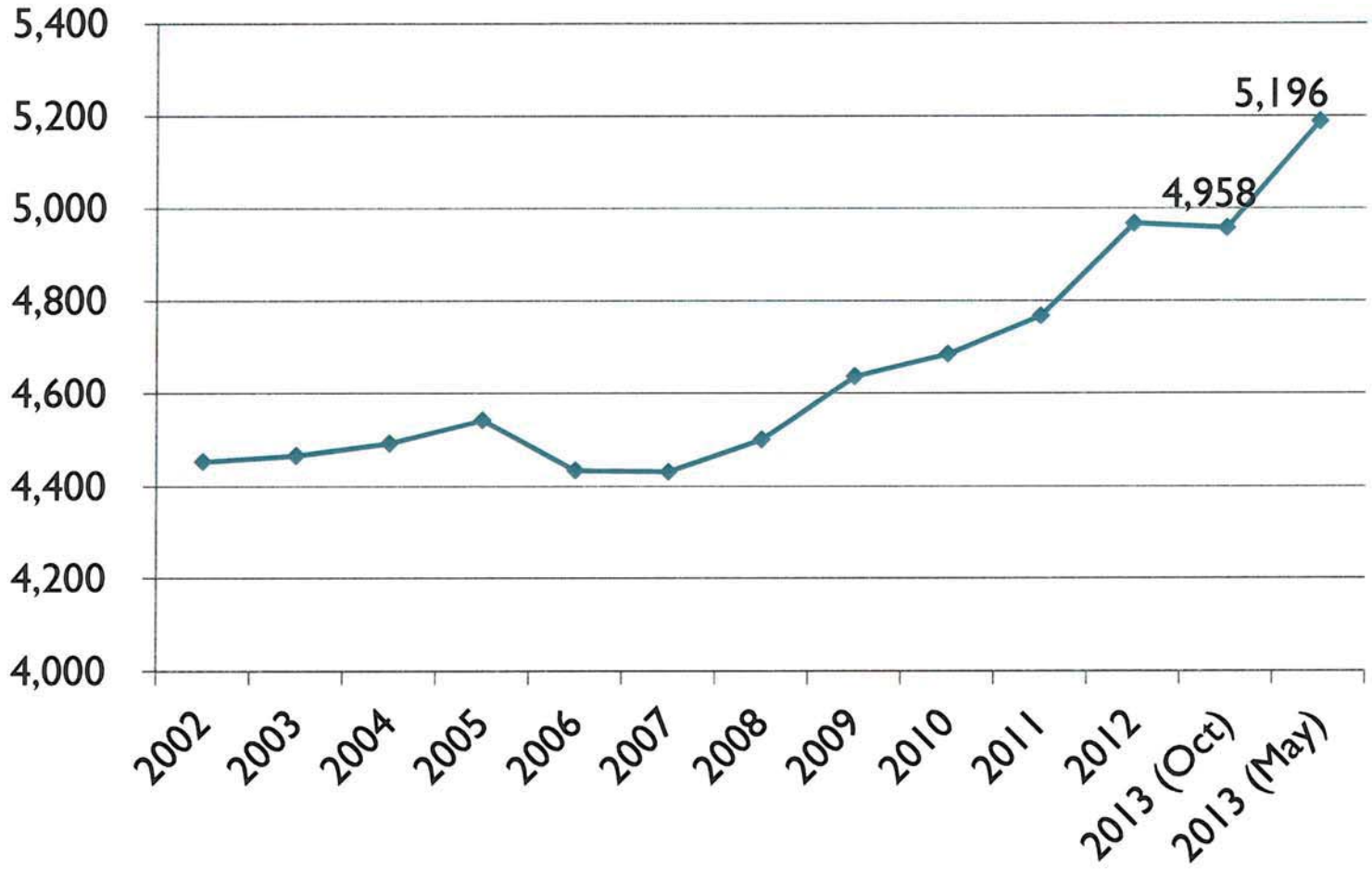
Source: U.S. Census Bureau, NTCOG

Household Growth

Total Households /HH Growth	2000	2010	% Change	Avg Annual Change	Total Numeric Change
Caldwell County	10,816	12,301	13.7%	1.4%	1,485
City of Lockhart	3,627	4,098	13.0%	1.3%	471
Lockhart ISD	6,731	7,846	16.6%	1.7%	1,115

Source: U.S. Census Bureau, NTCOG

Enrollment Growth



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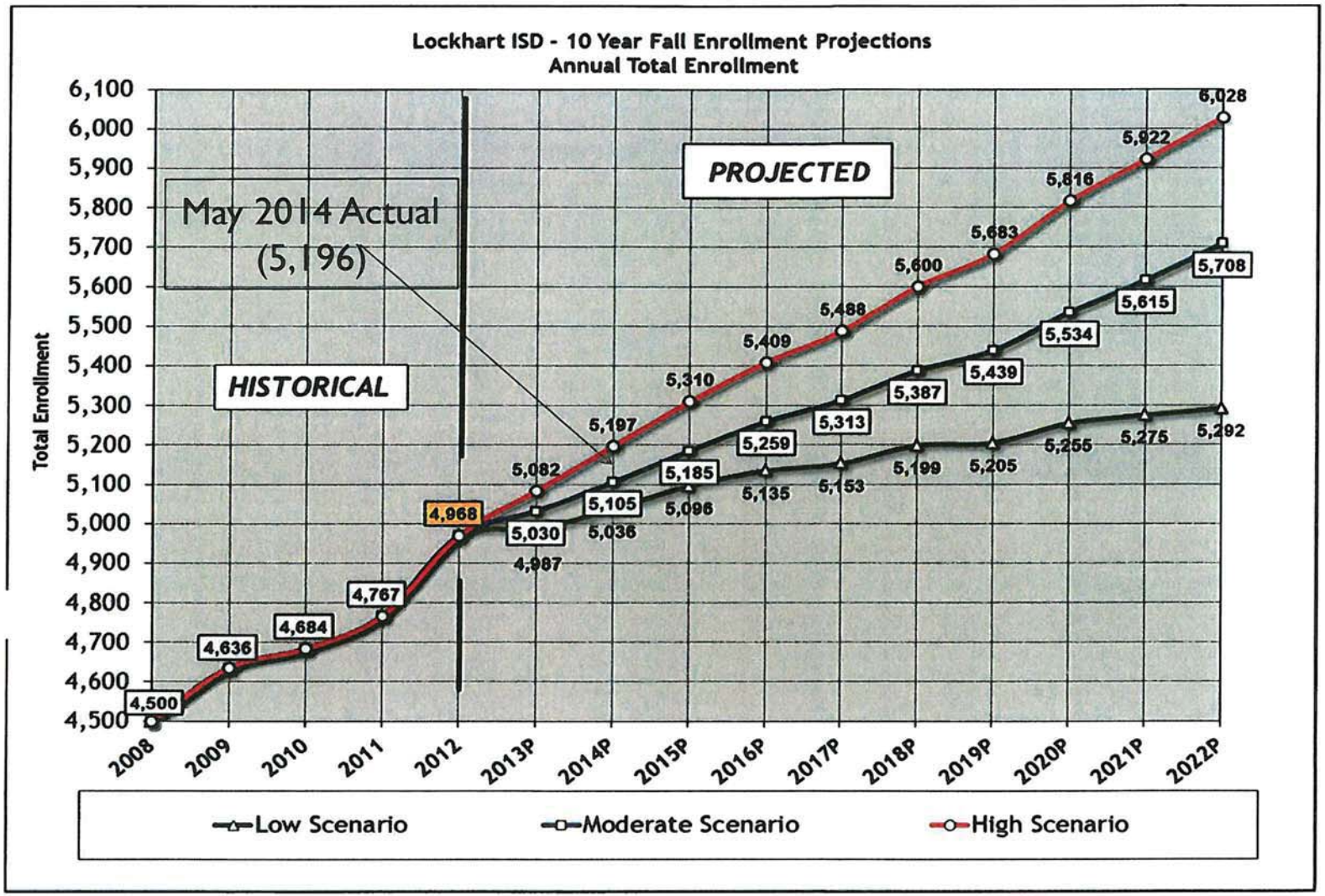
© School District Strategies
2012 Demographic Report
Plus 2014 LISD updates

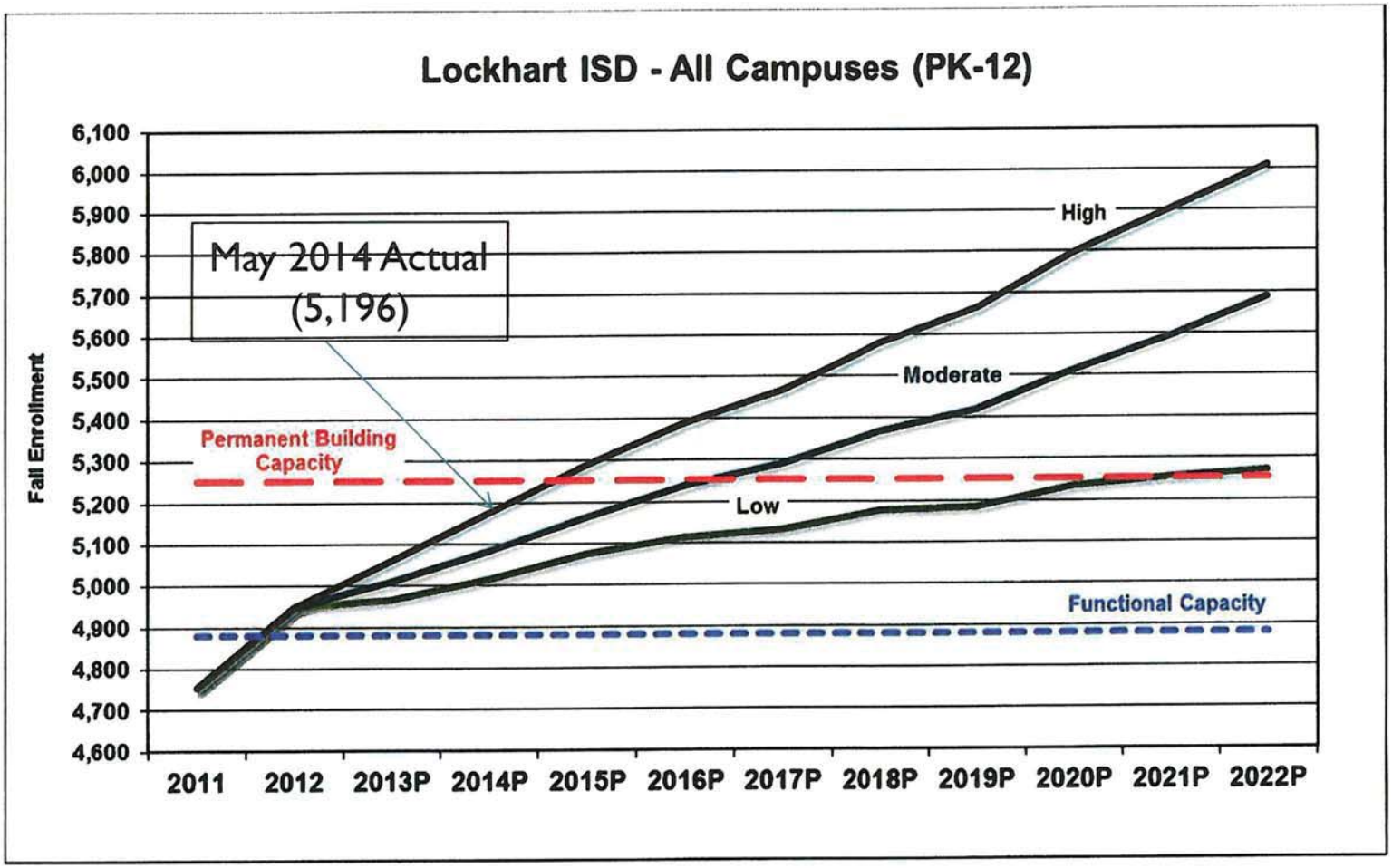
2012 Enrollment Projections

Fig. 60



2012 Campus Projections vs. Capacity Levels

Fig. 64



2012 Demographic Report

Campus Classroom Availability

Campus	Available Classrooms
Carver Kinder	None Available
Bluebonnet Elementary	1 classroom
Navarro Elementary	1 classroom
Plum Creek Elementary	1 classroom
Clear Fork Elementary	None Available
Lockhart Junior High School	1 classroom
MLCFC	None Available
Lockhart High School	None Available

Questions?

LOCKHART
Independent School District
2014 Bond Program

Select Language

Quick Links:

- Bond Program Home
- Bond Brochure English
- Folleto en Espanol
- Schedule
- Current Budget
- Master Facility Program
- Board Updates
- Demographic Update
- Vendor Opportunities
- Community Forum-FAQ

Project Updates:

- Lockhart High School
- Lockhart Junior High
- M. L. Cisneros
- Alma Brewer Strawn ES
- Bluebonnet Elementary
- Carver Kindergarten
- Clear Fork Elementary
- Navarro Elementary
- Plum Creek Elementary

Return to Lockhart ISD:

- Lockhart ISD Home

Alma B. Strawn Elementary Construction Camera

Design Development Presentation New Elementary School

Alma Brewer Strawn Elementary School

Student enrollment has continued to increase in LISD. This has been particularly evident at the elementary school level. PK-5th grade enrollment is now over 2,600 students. The combined functional capacity for these campuses is just under 2,600 students. As a result, the bond program included funding for a new elementary campus. The facility will be designed for an initial student capacity of 500. Core spaces, such as the library, cafeteria, etc., will be design to allow for expansion to 700 students.

Budget: $13,100,000

Architect: Huckabee, Inc.

Contractor: Joeris General Contractors

Projected Completion: Summer 2016

Update:

- Metal panels are approx. 85% complete (delayed by wet conditions)
- Metal flashing and metal canopy soffit system continue to be installed
- Parking lots are completed and west drive also
- Front flagpole foundation is placed
- Painter is working on 2-story stairwell spaces (tall walls)
- Ceramic tile continues in the restrooms in all areas
- Ceiling grid continues in the 2-story
- Electrician is installing permanent light fixtures
- Data and fire alarm cabling is being pulled in all areas
- HVAC start-up continues in the one story
- VCT flooring has begun in the 2-story wing
- Canopy installation is ongoing
- Septic system materials delivered; grading revisions are delayed by wet conditions

Looking ahead:

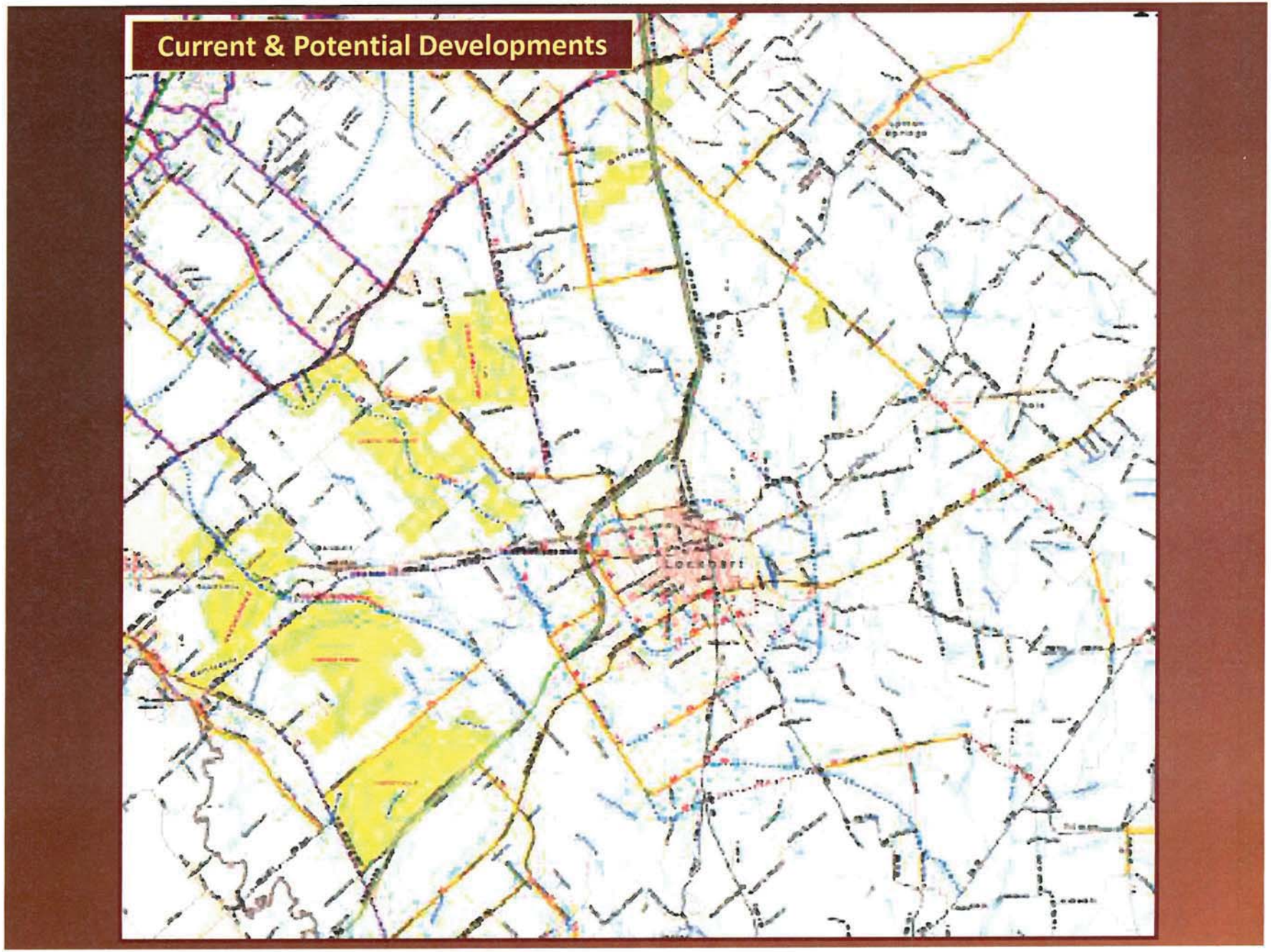
For additional information, contact the LISD Administration at (512) 398-0000.

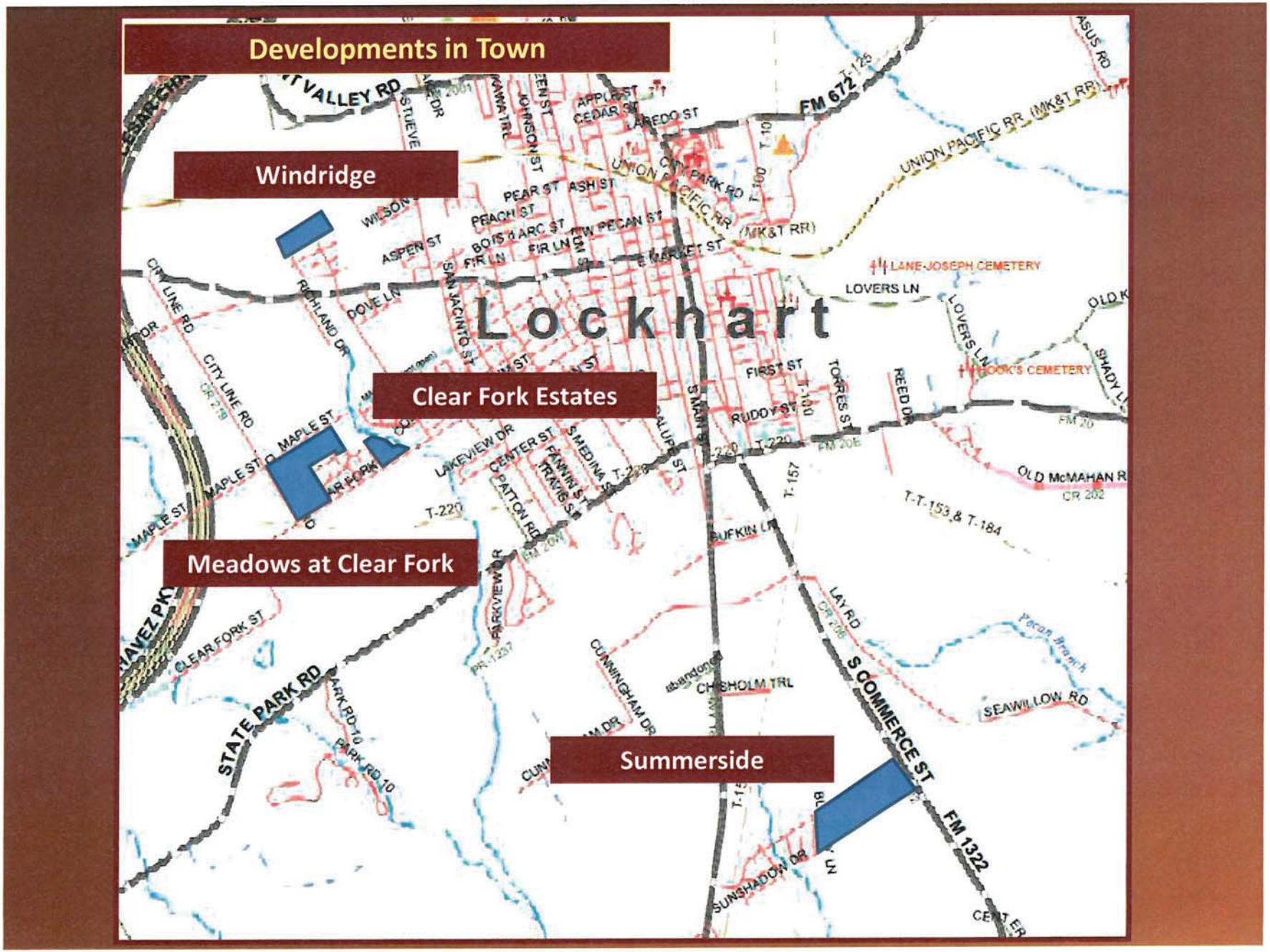
LOCKHART
Independent School District

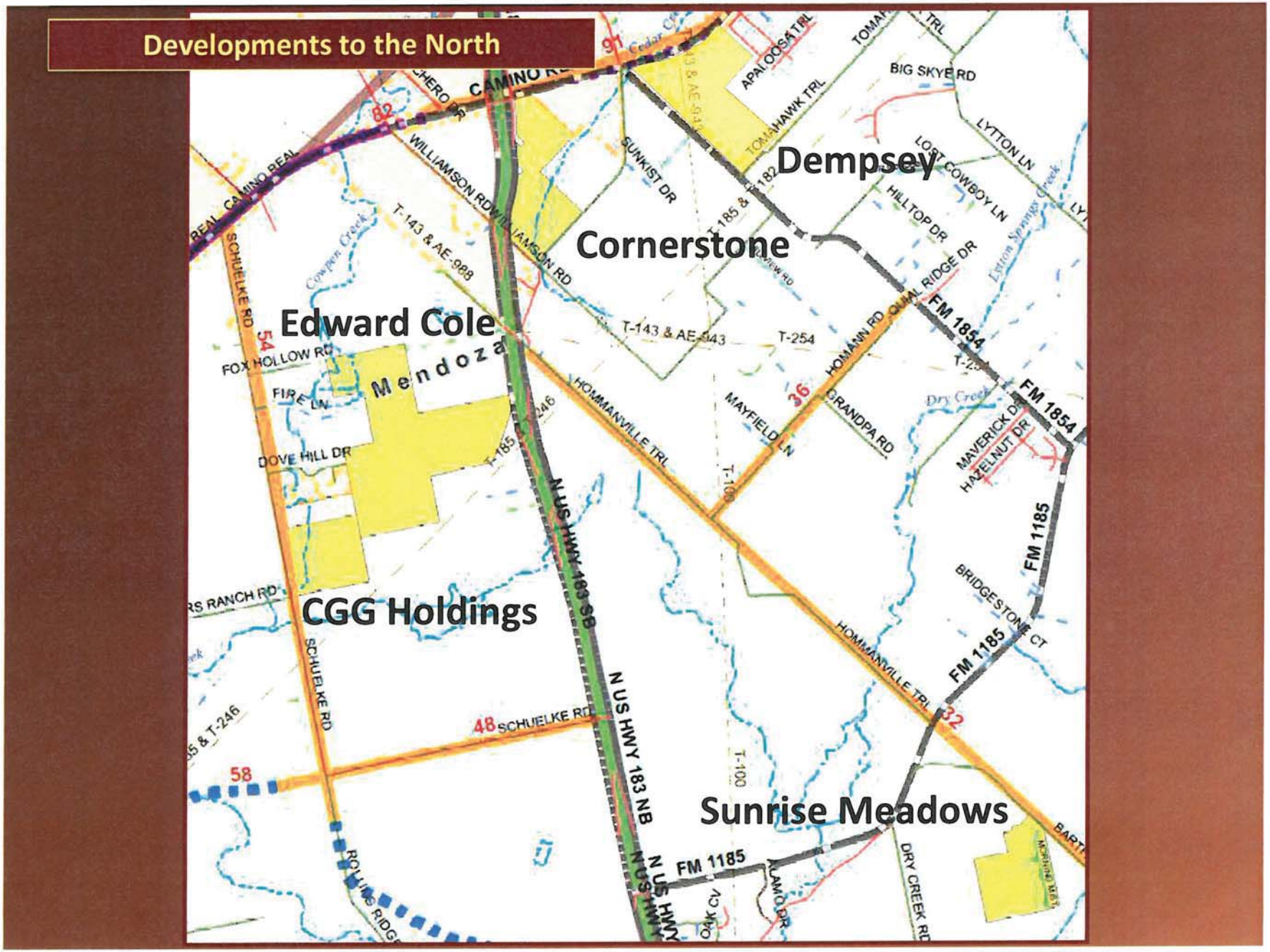
BOARD RETREAT

Site Acquisition Strategies

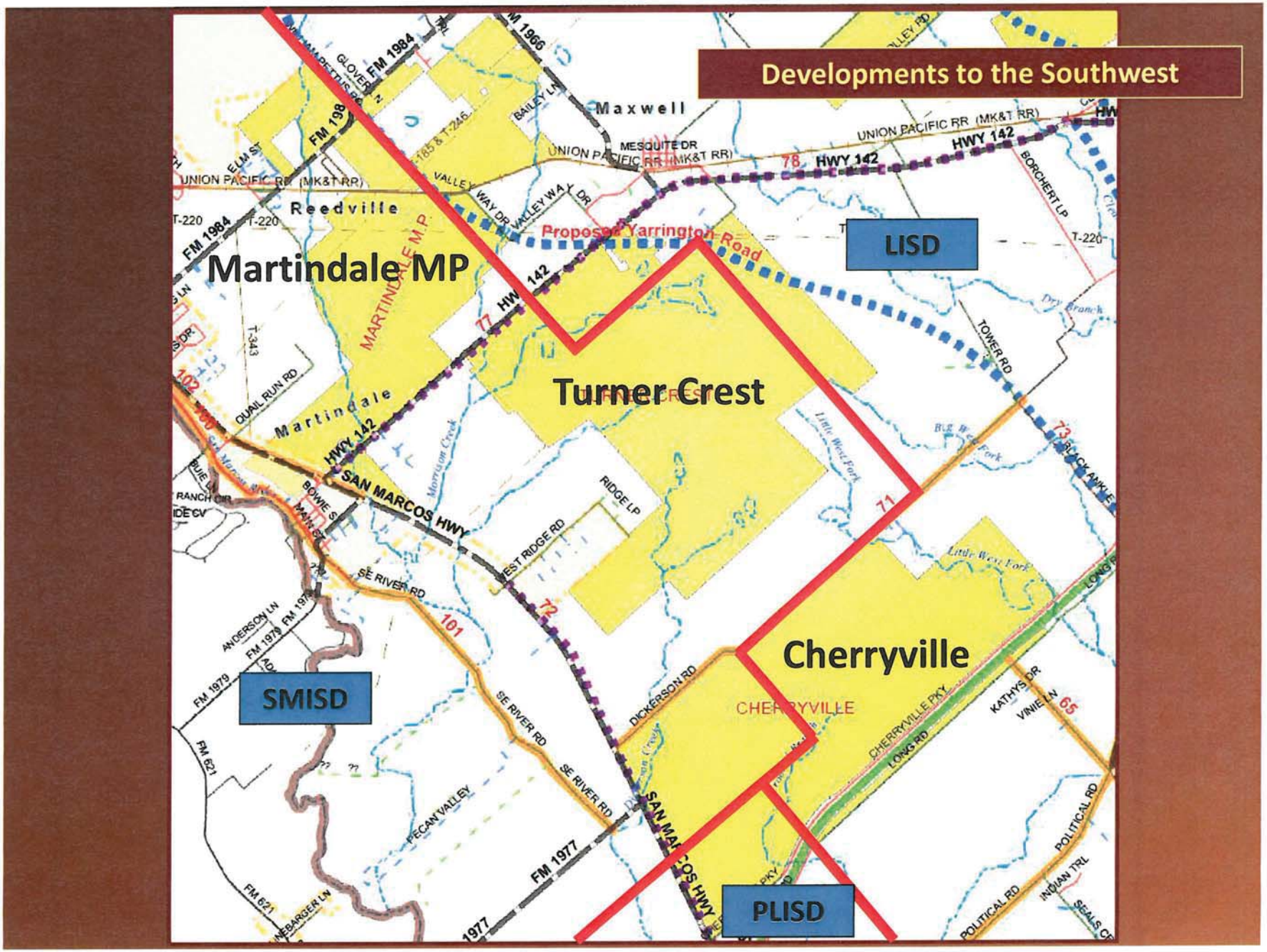
September 6, 2014

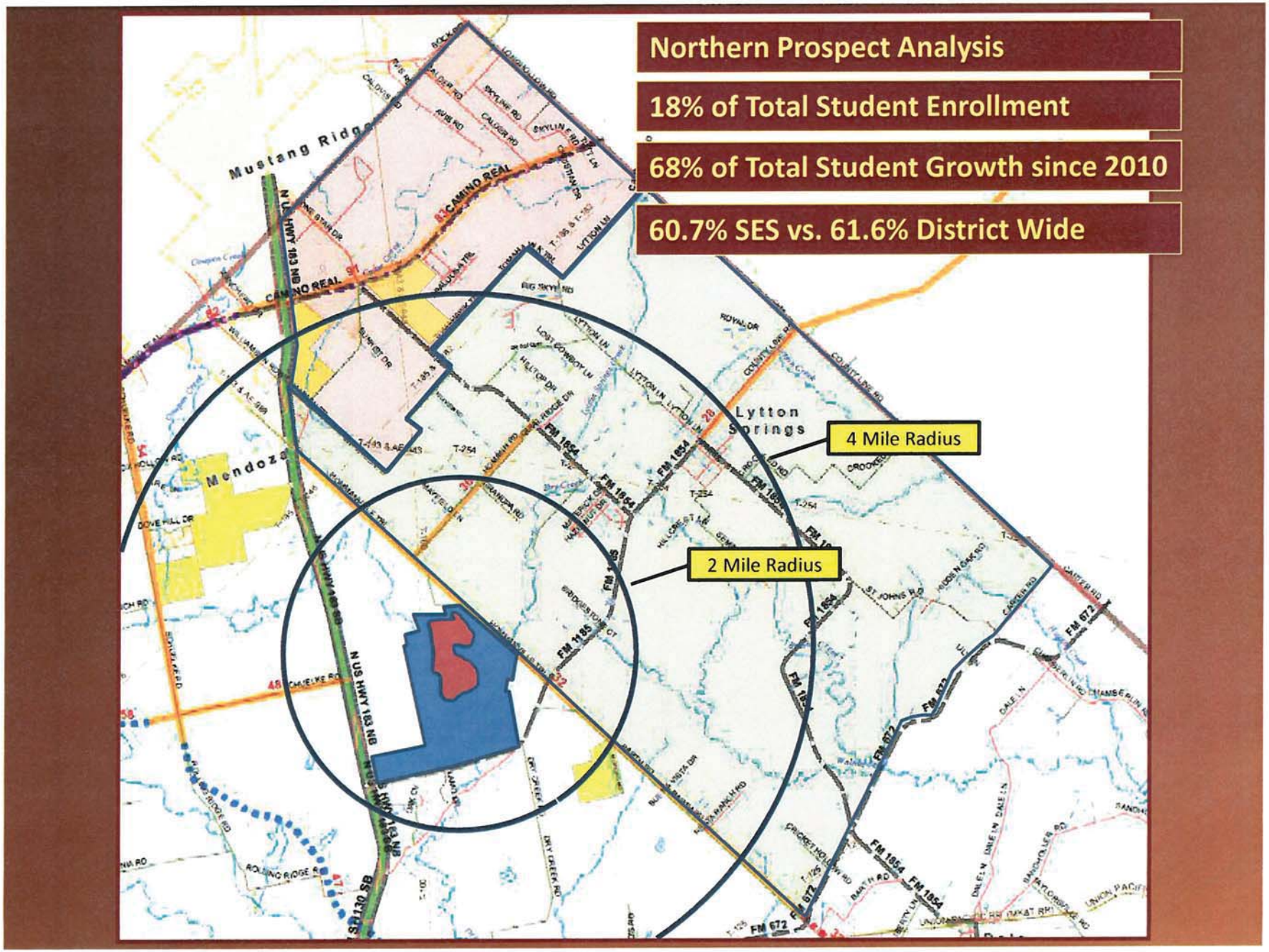

Current & Potential Developments

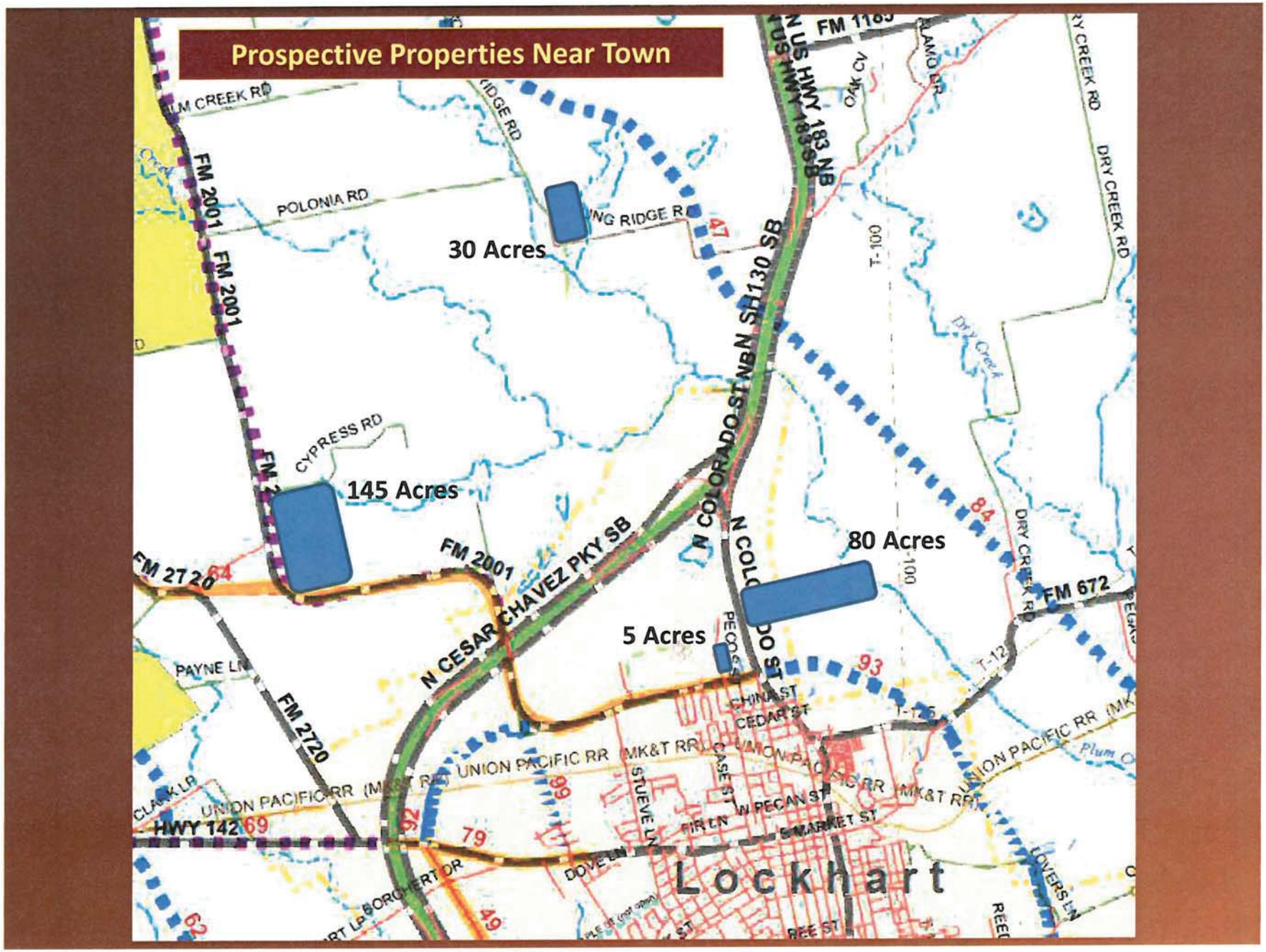

Developments in Town
Windridge
Clear Fork Estates
Meadows at Clear Fork
Summerside
Lockhart
FM 672
UNION PACIFIC RR (MK&T RR)
LANE-JOSEPH CEMETERY
HOOK'S CEMETERY
LOVERS LN
CITY LINE RD
MAPLE ST
CLEAR FORK ST
STATE PARK RD
S COMMERCE ST
FM 1322
OLD McMAHAN R
CR 202
T-T-153,& T-184
SEAWILLOW RD
SUNSHADOW DR
CHISHOLM TRL
LAY RD
RUDDY ST
FIRST ST
REED DR
TORRES ST
LAKEVIEW DR
CENTER ST
PATTON RD
BUFKIN LN
T-220
T-157

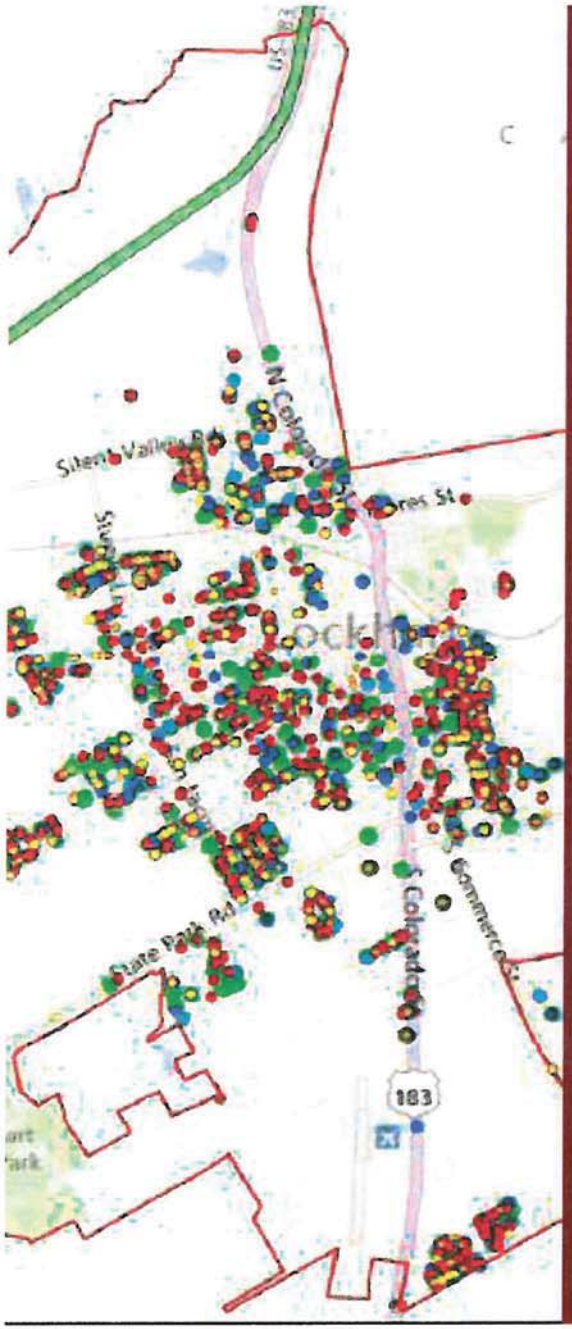

Developments to the North
Dempsey
Cornerstone
Edward Cole
CGG Holdings
Sunrise Meadows
CAMINO REAL
WILLIAMSON RD
SUNKIST DR
APALOOSA TRL
TOMAHAWK TRL
BIG SKYE RD
LYTTON LN
LOST COWBOY LN
HILL TOP DR
QUAIL RIDGE DR
FM 1854
HOMANN RD
SCHUELKE RD
FOX HOLLOW RD
FIRE LN
DOVE HILL DR
HOMMANVILLE TRL
MAYFIELD LN
GRANDPA RD
MAVERICK DR
HAZELNUT DR
FM 1185
BRIDGESTONE CT
N US HWY 183 SB
N US HWY 183 NB
SCHUELKE RD
48 SCHUELKE RD
58
ROLLING RIDGE
FM 1185
ALAMO DR
DRY CREEK RD
T-143 & AE-988
T-143 & AE-943
T-254
T-185
T-246
T-100
Cowpen Creek
Dry Creek
Lytton Springs Creek


Developments to the West
HISD
Open R Family Prtnr
OPEN R FAMILY PRTNR
Camino Real
Camino Real
Walton Dev
LISD
Camino Real
Camino Real
Martindale MP
Maxwell
Uhland
E RR 150
FM 2720
FM 1966
FM 1984
FM 2001
FARMERS RD
MISTY LN
ROCKY RD
FRIAR CT
MISSION LN
COTTONWOOD TRL
CAMINO REAL
FM 2720
JOLLEY RD
HWY 142
UNION PACIFIC RR


Developments to the Southwest
Martindale MP
Turner Crest
Cherryville
LISD
SMISD
PLISD
Proposed Yarrington Road
Maxwell
Reedville
Martindale
CHERRYVILLE
HWY 142
SAN MARCOS HWY
FM 1984
FM 1979
FM 621
FM 1977
SE RIVER RD
DICKERSON RD
LONG RD
CHERRYVILLE PKY
POLITICAL RD
TOWER RD
QUAIL RUN RD
RIDGE LP
WEST RIDGE RD
UNION PACIFIC RR (MK&T RR)
MESQUITE DR
VALLEY WAY DR
BAILEY LN
ELM ST
BORCHERT LP
KATHYS DR
VINIE LN
INDIAN TRL
SEALS CR
ANDERSON LN
PECAN VALLEY
MARTINDALE M.P.
Little West Fork
Morrison Creek
BOWIE ST
MAIN ST
RANCH CIR
T-220
T-343
T-246
65
71
72
73
77
78
101
102


Northern Prospect Analysis
18% of Total Student Enrollment
68% of Total Student Growth since 2010
60.7% SES vs. 61.6% District Wide
4 Mile Radius
2 Mile Radius
Mustang Ridge
Mendoza
Lytton Springs
CAMINO REAL
N US HWY 183 NB
S US HWY 183 SB
FM 1854
FM 672
FM 1185


Prospective Properties Near Town
30 Acres
145 Acres
80 Acres
5 Acres
FM 2001
POLONIA RD
CYPRESS RD
FM 2720
PAYNE LN
CLARK LP
HWY 142
N CESAR CHAVEZ PKY SB
N COLORADO ST NB
N US HWY 183 NB
FM 1185
DRY CREEK RD
FM 672
UNION PACIFIC RR (MK&T RR)
CHINA ST
CEDAR ST
W PECAN ST
S MARKET ST
DOVE LN
Lockhart



LOCKHART
Independent School District

BOARD RETREAT

Site Acquisition Strategies

September 7, 2014

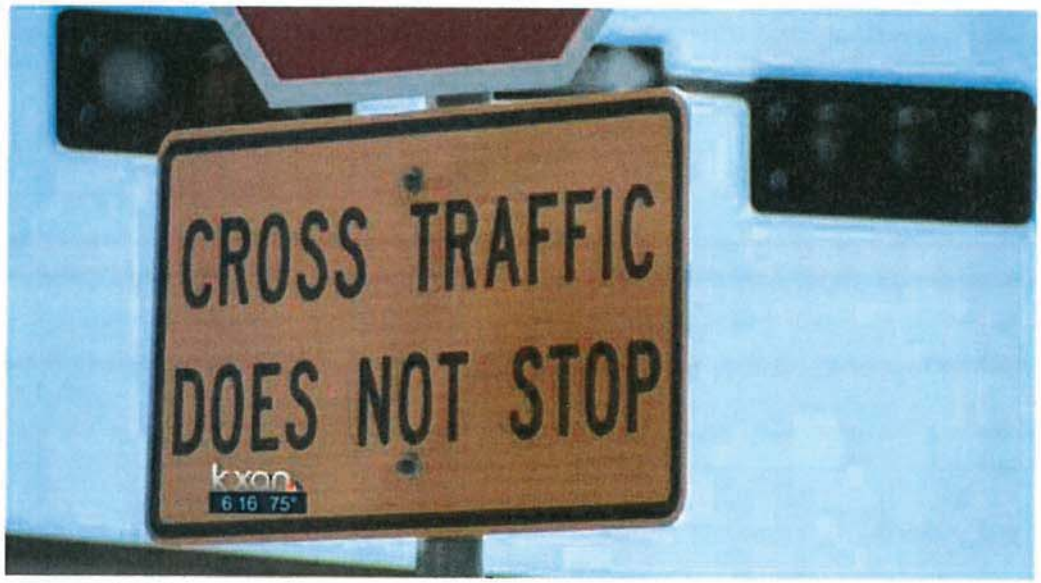
Questions?

IN-DEPTH. INVESTIGATIVE.

TxDOT reevaluates traffic signals along stretch of deadly highway

Lindsay Bramson

Published: January 31, 2014, 7:42 pm



CALDWELL COUNTY, Texas (KXAN) — The latest person to die on a highway in Caldwell County in the last few weeks was laid to rest Friday.

Daniel Cannon of Lockhart died while riding with his 17-year-old son along U.S 183 about five miles north of Lockhart. Their car was rear ended and pushed into the median and was just one of many recent crashes in the area.

Billy Butler was in a car crash last month. "I was headed to work, it was misting rain and I stopped at a flashing red light, looked both ways, took off, and boom, I got hit."

Butler looks back on that rainy day in December and wonders how he survived.

Several surgeries later, a totaled car and a scar under right his eye, he also wonders how many more crashes have to happen before something changes along what he calls a deadly stretch of road.

He was crossing FM 2001 when he says he was hit by a car driving down the State Highway 130 frontage road. "Ever since they built it, all you hear at night is ambulances and police cars going through here. It's just terrible."

Two weeks ago a father and his two sons were killed at the intersection of FM 1185 and U.S 183. It was the second deadly crash at that intersection in two months.

Several drivers told KXAN they want to see more deputies sitting at these intersections, but the Caldwell County Sheriff's Office says they are already short-staffed and don't have the manpower to do that.

The last time the Texas Department of Transportation evaluated lights along this stretch of road was March 2013. At that time it was determined these intersections didn't warrant a regular traffic signal. Now the department is reevaluating that decision.

"They're going to have to do something and its sad they have to have people die before they do it," Butler said.

In about 30 days, there were three deadly crashes along the stretch of highway in Caldwell County that killed five people. Since April 2013, there have been 86 collisions in the 10-mile stretch.

In the two years prior, there were five deadly wrecks.

Related Posts

TxDOT: I-35 congestion to jump to 9 hours a day by 2040 (http://kxan.com/2016/06/21/txdot-i-35-congestion-to-jump-to-9-hours-a-day-by-2040/)

TxDOT: Hundreds of Texans die annually from driving without seat belts (http://kxan.com/2016/05/23/txdot-hundreds-die-annually-from-driving-without-seat-belts/)

TxDOT: Motorcyclists 26 times more likely to die in crash (http://kxan.com/2016/05/10/txdot-motorcyclists-26-times-more-likely-to-die-in-crash/)

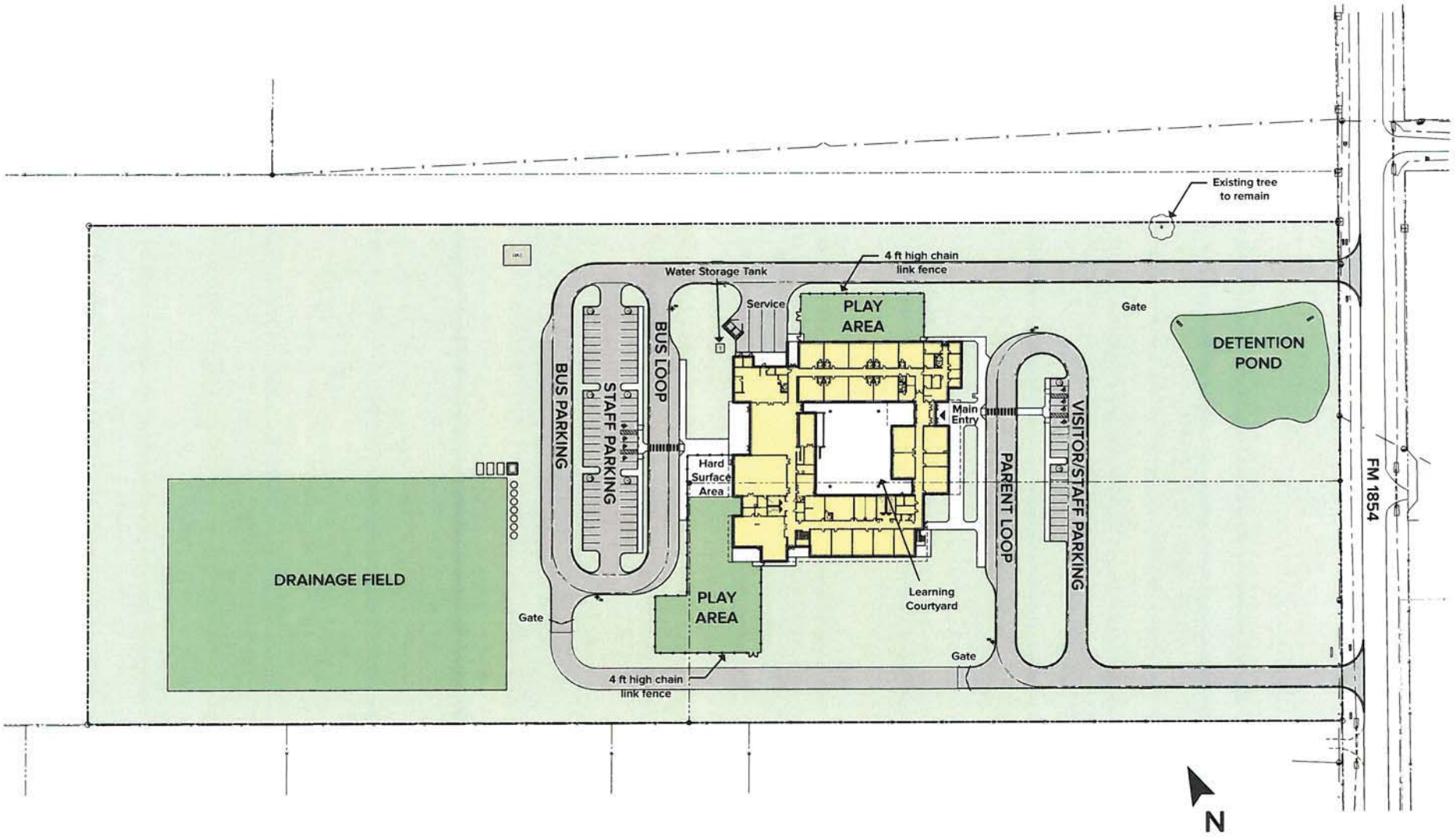
April 23, 2015

DESIGN DEVELOPMENT PRESENTATION

NEW ELEMENTARY SCHOOL

LOCKHART INDEPENDENT SCHOOL DISTRICT

Huckabee


Existing tree to remain
4 ft high chain link fence
Water Storage Tank
Service
PLAY AREA
Gate
DETENTION POND
BUS LOOP
BUS PARKING
STAFF PARKING
Main Entry
VISITOR/STAFF PARKING
PARENT LOOP
FM 1854
Hard Surface Area
DRAINAGE FIELD
PLAY AREA
Learning Courtyard
Gate
Gate
4 ft high chain link fence
N

SITE PLAN

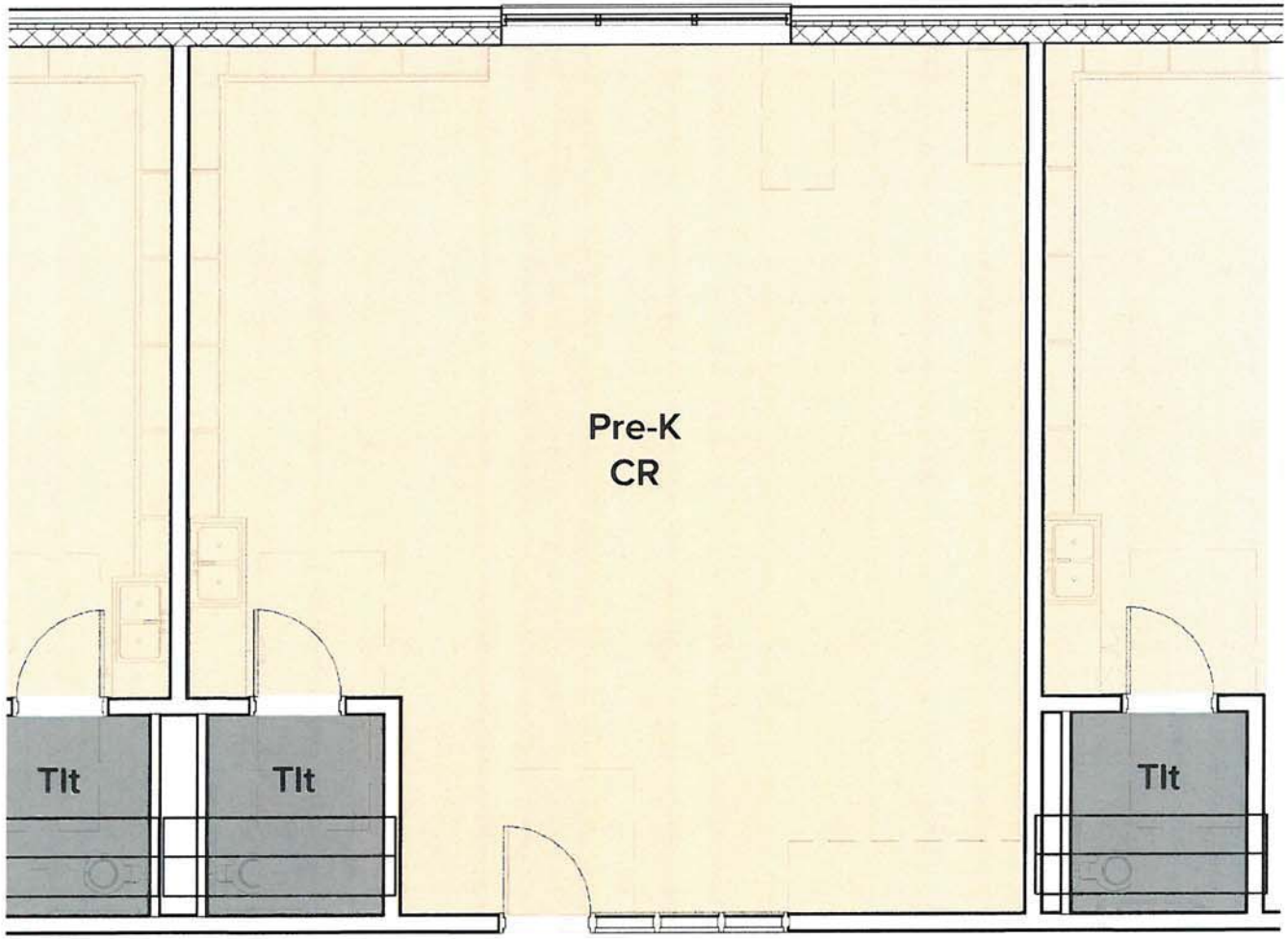
FLOOR PLAN - FIRST FLOOR

COLOR LEGEND

- Administration
- Athletics
- Cafeteria/Dining
- CTE
- Circulation
- Classrooms (General)
- Fine Arts
- Computer Lab
- Science Lab
- Library
- Support Spaces/Toilets
- Resource

N

FLOOR PLAN - SECOND FLOOR



TYPICAL PRE-K CLASSROOM


Blackson Brick Co.
SIENNA
SAWED TOP/BOTTOM

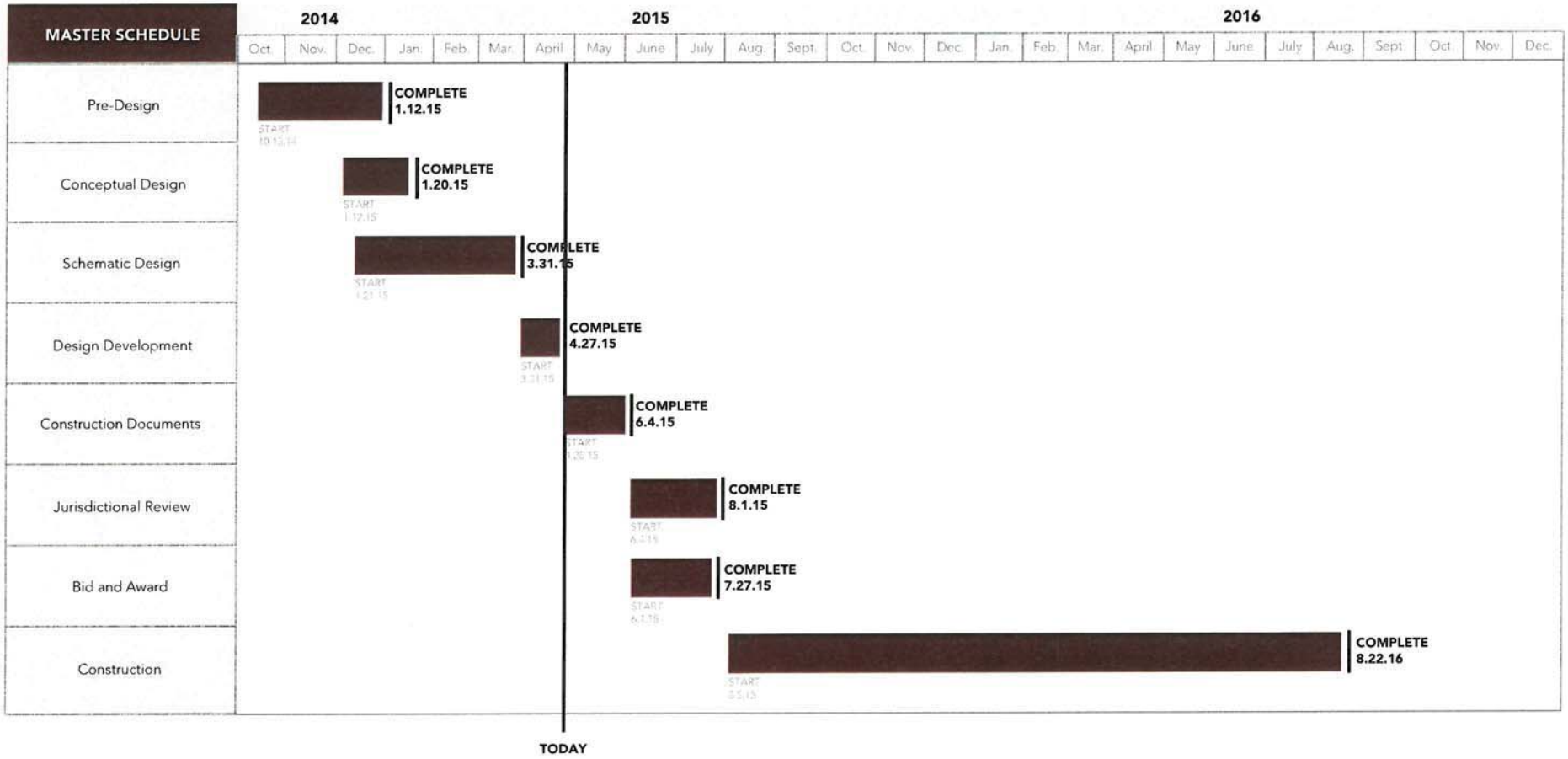
EXTERIOR VIEW - MAIN ENTRY OPTION 1

EXTERIOR VIEW - MAIN ENTRY OPTION 2

EXTERIOR VIEW - DINING

EXTERIOR VIEW - LIBRARY

EXTERIOR VIEW - COURTYARD


MASTER SCHEDULE
2014
2015
2016
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
April
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
April
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Pre-Design
COMPLETE 1.12.15
Conceptual Design
COMPLETE 1.20.15
Schematic Design
COMPLETE 3.31.15
Design Development
COMPLETE 4.27.15
Construction Documents
COMPLETE 6.4.15
Jurisdictional Review
COMPLETE 8.1.15
Bid and Award
COMPLETE 7.27.15
Construction
COMPLETE 8.22.16
TODAY

SCHEDULE

THANK YOU!
QUESTIONS?

MORE THAN ARCHITECTS


Water
for
Texas
Water for Texas
Financial assistance provided by
Texas Water Development Board
2017 State
Water Plan
The information within this plan is final but subject to graphic enhancements before publication and distribution.
Texas Water
Development Board

IMPORTANT NOTE REGARDING THE TRANSIENCE OF THIS DOCUMENT VERSION

In order to accelerate the delivery schedule, this version of the adopted 2017 State Water Plan document reflects an unenhanced document as it was adopted by the TWDB on May 19, 2016. This adopted plan version is distinguished by page numbers that each include the prefix "A."

This is a transitional document that, prior to January 5, 2017, will be replaced by a graphically enhanced version for the purpose of final publication and distribution. Graphic enhancements to be made may include, but are not limited to, revised page layouts, additional colors, non-substantive graphics, font size changes, photos, and other non-substantive changes aimed at improving the appearance of the document.

The numbers and language associated with the plan content itself will not change from this document to the graphically enhanced version.

As a result of the graphic enhancements, the relative pages on which the plan content occurs may shift slightly. The final page numbers of the published plan document will accurately reflect the correct pages and will not include the prefix "A."

To obtain the final, published version of the 2017 State Water Plan, please check our website at: http://www.twdb.texas.gov/waterplanning/swp/2017/index.asp.

2017 State Water Plan

Water
— *for* —
Texas

Texas Water Development Board

Texas Water Development Board Members
Bech Bruun, *Chairman*
Kathleen Jackson, *Member*
Peter Lake, *Member*

www.twdb.texas.gov

texasstatewaterplan.org

Acknowledgments

The 2017 State Water Plan would not have been possible without the time and expertise of numerous people and organizations throughout Texas. The Texas Water Development Board (TWDB) would like to express its sincere appreciation to all who participated in the development of the 16 regional water plans and this state water plan: the more than 450 regional water planning group voting members (listed below), their consultants, and their administrative agents (listed below); staff of the TWDB; Texas Parks and Wildlife Department, Texas Department of Agriculture, Texas Commission on Environmental Quality, and other state and federal agencies; and the individuals and organizations that provided public input throughout the planning process.

Finally, we would like to thank the leadership of the State of Texas for their consistent support and recognition of the importance of water planning.

Regional Water Planning Group Voting Members

(Region – member) *planning group chairs at the time the 2016 regional water plans were adopted

A - Autrey, Emmett
A - Bailiff, Tom
A - Baumgardner, Joe
A - Clark, Nolan
A - Cook, Vernon
A - Cooke, Charles
A - Cooke, Dean
A - Crowell, Amy
A - Derington, Jim
A - Gibson, Rick
A - Gilmore, Rusty
A - Green, Glen
A - Guthrie, Janet
A - Hallerberg, Bill
A - Keys, Sandy
A - Kidd, Bobby
A - Kleuskens, Tonya
A - Krienke, Danny
A - Landis, David
A - Meyer, Robert
A - Satterwhite, Kent
A - Skaggs, Grady
A - Smith, Lynn
A - Stephens, Beverly
A - Sweeten, John M.
A - Tregellas, Janet
A - Walthour, Steve
A - Weber, Jay
A - Weinheimer, Ben
A - Williams, C.E.*
A - Williams, John C.
B - Armstrong, Tamela
B - Banks, Jimmy
B - Bell, Charlie
B - Brite, J.K. Rooter
B - Campbell, Curtis*
B - Campsey, Jack
B - Christopher, Mark
B - Deweber, N.E.
B - Dodge, Rebecca L
B - Garnett, Ed
B - Grant, Mitch
B - Hughes, Dale
B - Kidd, Bobby
B - Liggett, Kenneth
B - McGuire, Mike
B - McMahon, Monte
B - Mesler, Tracy
B - Myers, Dean
B - Payne, Jerry
B - Scaling, Wilson
B - Schreiber, Russell
B - Simpson, Gayle
B - Stephens, Pamela
B - Stephens, Tom
B - Watts, Jeff
C - Bailey, David
C - Berry, Steve
C - Carman, John
C - Ceverha, Bill
C - Chapman, Jerry W.
C - Crumb, Frank
C - Douglas, Gary
C - Hotopp, James
C - Kula, Tom
C - La Point, Thomas
C - Latham, Harold
C - Laughlin, Russell
C - Lewis, Bill
C - Lingenfelder, John
C - Maenius, G.K.
C - Martin, Howard
C - McCarter, Jim
C - Mundt, Steve
C - Parks, Jim
C - Phillips, Paul
C - Puckett, Jo "Jody"*
C - Riley, Bob
C - Satterwhite, Drew
C - Scott, Bob
C - Spicer, Gary
C - Standridge, Connie
C - Stevens, Jack
C - Vance, Danny
C - Vogelson, Mary E.
C - Ward, Kevin
C - Woodward, Tom
D - Bradley, Adam
D - Bradley, Johnny Mack
D - Brown, Michael K.
D - Calvin, Larry
D - Carter, Greg
D - Clements, Nancy
D - Conner, Doug
D - Crews, Mark
D - Douthit, Darwin
D - Duman, JoAnn
D - DuMond, Jeremy
D - Dunn, Mike
D - Eidson, Jim
D - Evans, Danny
D - Frost, George
D - Gaskill, Jerry
D - Gillis, Charles
D - Glidewell, Brice
D - Grubbs, Darrell
D - Henry, Troy
D - Hightower, Don
D - Hilliard, Dennis
D - Holt, Robert
D - Kirby, Bill
D - Long, Sam
D - McCoy, Bret
D - McCoy, Mike
D - Nabors, David
D - Nabors, Sharron
D - Nicholson, Tim
D - Nickerson, Jim
D - Patterson, Don
D - Price, Linda*
D - Roberts, Drew
D - Shaw, Kenneth
D - Shumake, Shirley
D - Slater, Tommy
D - Speight, Robert, Jr.
D - Spence, Kevin
D - Staton, Bob
D - Stuart, Cheri
D - Wadley, Doug
D - Williams, Mark
E - Adams, Janet
E - Allen, Ann

E - Archuleta, Ed
E - Barker, Randy
E - Beard, Tom*
E - Bennett, Jeff
E - Borunda Firth, Sylvia
E - Brewster, Rebecca L.
E - Butcher, Sterry
E - Chacon, Roger
E - Davidson, Michael
E - Etzold, David
E - Gandara, Willie
E - Hall, Dave
E - Livingston, Mike
E - Miller, Albert
E - Miller, Jim Ed
E - Mitchell, Scott
E - Norris, Kenn
E - Palacios, Arlina
E - Perez, Vincent
E - Reinert, Scott
E - Reyes, Jesus "Chuy"
E - Tate, Rick
E - Todd, Teresa
E - Waggoner, Paige
E - Webb, Summer
F - Anderson, Woody
F - Barr, Mark
F - Bearden, Jerry
F - Brown, Stephen
F - Dickson, Ricky
F - Dierschke, Kenneth
F - Gist, Richard
F - Grant, John*
F - Hagood, Charles
F - Holland, Scott
F - Moody, Wendell
F - Moore, Robert
F - Runge, Caroline
F - Scott, Terry
F - Shepard, John
F - Shepperd, Ben
F - Straub, Raymond, Jr.
F - Taylor, Merle
F - Turnbough, Larry
F - Van Deventer, Gilbert
F - Warren, Tim
F - Weatherby, Paul
F - Wilde, Will
F - Wilson, Len
G - Adams, Dale
G - Beseda, Charles
G - Blackburn, David
G - Briggs, Jim
G - Brown, Tim
G - Clark, Tom
G - Cooper, Joe
G - Cox, Alva
G - Floyd, Travis
G - Ford, Phil
G - Groth, Larry
G - Hodson, James
G - Holland, Zach
G - Kinard, Kelly
G - McGuire, Mike
G - Newman, Gary
G - O'Brien, Tommy
G - Parker, Judy
G - Patrick, Brian
G - Peek, Gail
G - Smith, Sheril
G - Spicer, Gary
G - Spurgin, Dale
G - Sutherland, Mike
G - Waclawczyk, Randy
G - Wagner, Kevin
G - Webster, Kathleen J.
G - Weldon, Kenny
G - Westbrook, Gary
G - Wilson, Wayne*
H - Bailey, David
H - Bartos, John R.
H - Blount, John
H - Bruner, Robert
H - Chang, Jun
H - Collinsworth, David
H - Comin, James
H - Eichelberger, Reed
H - Evans, Mark*
H - Fisseler, Gene
H - Hebert, Robert
H - Henson, Art
H - Hofmann, John
H - Houston, Jace
H - Howard, John
H - Istre, Robert
H - Jones, Kathy Turner
H - Leathers, Gená
H - Leiper, Glynna
H - Long, Ted
H - Lord, Glenn
H - Marcell, Marvin
H - Masterson, Carl
H - Morrison, James
H - Neighbors, Ron J.
H - Schindewolf, Jimmie
H - Teer, William, P.E.
H - Tyler, Steve
H - Vance, Danny
H - Wallace, C. Harold
H - Ward, Kevin
H - Willcox, George "Pudge"
I - Adams, Leah
I - Alders, David
I - Branick, Jeff
I - Brock, David
I - Campbell, George P.
I - Clark, Jerry
I - David, Josh Wilson
I - Davis, Chris
I - Dunn, Mark
I - Hall, Scott
I - Harbordt, Dr. C. Michael
I - Heugel, William
I - Holcomb, Joe
I - Holcomb, Kelley*
I - Kimbrough, Bill
I - Kindle, Glenda
I - Lyons, Duke
I - Martin, John
I - Montagne, David
I - Morgan, Gregory
I - Peddy, Dale
I - Reed, Hermon E., Jr.
I - Shank, Monty
I - Smith, Darla
I - Whitehead, Worth
I - Young, J. Leon, Ph.D.
J - Barron, Stuart
J - Buck, Ray
J - Bushong, Perry
J - Carver, Ken
J - Davis, Zack
J - Gonzalez, Otila
J - Heffley, Jerry
J - Hobbs, Genell
J - Jackson, Howard
J - Jeffery, David
J - Letz, Jonathan*
J - Lomas, Mitch
J - Lowery, Kent
J - Mauk, David
J - Pace, Ronnie
J - Pigg, Joel
J - Postell, Peggy Sue
J - Qualia, Thomas M.
J - Shahan, Tully
J - Simpton, Jerry
J - Stevens, Homer T., Jr.
J - Sweeten, Lee
J - Talamantes, Melony
J - Trees, Roland
J - Villareal, Rene
J - Wiedenfeld, Charles (Charlie)
J - Williams, Gene
J - Wilson, William F. (Feather)
K - Barho, Jim
K - Brasher, Jim
K - Burke, John E.*
K - Dupnik, John T., P.G.
K - Fieseler, Ronald G.
K - Gertson, Ronald
K - Gillam, Lauri
K - Haschke, Karen
K - Hoffman, John
K - Johnson, Barbara
K - King, Joseph
K - Klaeger, Donna
K - Lewis, Brenton
K - Luedecke, Bill
K - Lutes, Teresa
K - Neve, Bill
K - Powell, Doug
K - Reagor, Mike
K - Roeder, W.A. (Billy)
K - Ruggiero, Rob
K - Shell, Charlie

K - Simon, Haskell
K - Sultemeier, James
K - Theodosis, Byron
K - Totten, Jim
K - Tybor, Paul
K - Van Dresar, David
K - Wade, Brandon
K - Walker, Jennifer
K - Wheelock, David
L - Ammerman, Jason
L - Andruss, Tim
L - Balin, Donna
L - Brownlow, Darrell
L - Camargo, Gene
L - Chavez, Rey
L - Cockerell, Alan
L - Conley, Will
L - Dietzmann, Don
L - Dohmann, Art
L - Fitzsimons, Blair
L - Hilderbran, Vic
L - Janak, Kevin
L - Kight, John
L - Labus, Russell
L - Leathers, Gena
L - Lord, Glenn
L - Mahoney, Mike
L - McGookey, Doug
L - Meyer, Daniel
L - Middleton, Gary
L - Mims, Con*
L - Pena, Illiana
L - Puente, Robert
L - Ramsey, Steve
L - Roberts, David
L - Ruiz, Roland
L - Savage, Diane
L - Scott, Suzanne B.
L - Sengelmann, Greg
L - Stolte, Milton
L - Taggart, Tom
L - Wassenich, Diane
L - West, Bill
L - Yablonski, Adam
M - Barrera, Jorge
M - Benavides, Nick
M - Bruciak, John
M - Campbell, Mary Lou
M - Darling, James (Jim)
M - de la Rosa, Ella
M - Flores, Jaime
M - Fulbright, Robert E.
M - Garza, Carlos
M - Goldsberry, Dennis
M - Gonzalez, Humberto
M - Hinojosa, Sonny
M - Jarvis, Glenn*
M - Lambert, Sonia
M - McGhee, Donald K.
M - Pena, Robert, Jr.
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M - Rathmell, Joe
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M - Schuster, Frank
M - Vela, Armando
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N - Bledsoe, Scott, III*
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N - Dick, Billy
N - Dove, Bill
N - Durham, Lavoyger
N - Eddins, Gary
N - Garza, Andy
N - Hennings, Bill
N - Hubert, Pancho
N - Knolle, Pearson
N - Koenig, Lindsey
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N - Ornelas, Martin
N - Paulson, Bernard
N - Reding, Thomas, Jr.
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N - Stockton, William
N - Sugarek, Mark
N - Tunnell, Jace
O - Barnes, Melanie
O - Baucum, Delaine
O - Blalack, Bruce
O - Brown, Harold P. "Bo"*
O - Campsey, Jack
O - Coleman, Jason
O - Conkwright, Jim
O - DeLoach, Mike
O - Ellison, Delmon, Jr.
O - Everheart, Harvey
O - Fulton, Tom
O - Gillespie, Richard
O - Harbin, Bill
O - Hopper, Ronnie
O - Hutcheson, Doug
O - Josserand, Bob
O - Kirkpatrick, Mark
O - Leonard, Richard
O - McClendon, Mike
O - McElroy, Don
O - Montgomery, E.W. (Gene)
O - Morris, Charles
O - Rainwater, Ken
O - Satterwhite, Kent
O - Simons, Tom
O - Spear, Aubrey
O - Steiert, Jim
O - Taylor, John
O - Wedel, Jimmy
P - Bonzer, Calvin
P - Brandenberger, Tommy
P - Brzozowski, Patrick
P - Butschek, John
P - Clark, Gerald
P - Griffin, Roy
P - Hudgins, Neal
P - Jahn, Rodney
P - Little, Lester
P - Maloney, Jack
P - Martin, Robert
P - Miller, Phillip
P - Ottis, Richard
P - Pustka, Edward
P - Raun, L.G.
P - Shoemate, Robert
P - Skalicky, Michael
P - Spenrath, Philip
P - Stafford, Harrison, II*
P - Wagner, David
P - Weinheimer, Ed

Administrative Agents

A – Panhandle Regional Planning Commission
B – Red River Authority of Texas
C – Trinity River Authority
C – North Texas Municipal Water District
D – Northeast Texas Municipal Water District
E – Rio Grande Council of Governments
F – Colorado River Municipal Water District
F – City of San Angelo
G – Brazos River Authority
H – San Jacinto River Authority
I – City of Nacogdoches
J – Upper Guadalupe River Authority
K – Lower Colorado River Authority
L – San Antonio River Authority
M – Lower Rio Grande Valley Development Council
N – Nueces River Authority
O – High Plains UWCD No. 1
P – Lavaca-Navidad River Authority

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Executive summary

Quick facts

Texas' state water plans are based on future conditions that would exist in the event of a recurrence of the worst recorded drought in Texas' history—known as the "drought of record"— a time when, generally, water supplies are lowest and water demands are highest.

Texas' population is expected to increase more than 70 percent between 2020 and 2070, from 29.5 million to 51 million, with over half of this growth occurring in Regions C and H. Water demands are projected to increase less significantly, by approximately 17 percent between 2020 and 2070, from 18.4 million to 21.6 million acre-feet per year.

Texas' existing water supplies— those that can already be relied on in the event of drought— are expected to decline by approximately 11 percent between 2020 and 2070, from 15.2 million to 13.6 million acre-feet per year.

Water user groups face a potential water shortage of 4.8 million acre-feet per year in 2020 and 8.9 million acre-feet per year in 2070 in drought of record conditions.

Approximately 5,500 water management strategies recommended in this plan would provide 3.4 million acre-feet per year in additional water supplies to water user groups in 2020 and 8.5 million acre-feet per year in 2070.

The estimated capital cost to design, construct, and implement the approximately 2,400 recommended water management strategy projects by 2070 is $62.6 billion.

If strategies are not implemented, approximately one-third of Texas' population would have less than half the municipal water supplies they will require during a drought of record in 2070.

If Texas does not implement the state water plan, estimated annual economic losses resulting from water shortages would range from approximately $73 billion in 2020 to $151 billion in 2070.

Through the SWIFT and other financial assistance programs, the TWDB has provided $1.9 billion in financial assistance to approximately 60 state water plan projects recommended in the 2012 State Water Plan.

Why do we plan?

Texas is home to a thriving, diverse, and innovative economy. To ensure the ongoing vitality of our economy, Texas' citizens, water experts, and government agencies collaborate in a comprehensive water planning process. We plan so that Texans will have enough water in the future to sustain our cities and rural communities, our farms and ranches, and our homes and businesses while also preserving the agricultural and natural resources that have defined Texas for generations.

Texas also has one of the fastest growing populations in the country. In 1950, only 8 million people lived in Texas. In 2010, approximately 25 million people called Texas home. By 2070, 51 million people are expected to live in the lone star state, all of whom will need water to work and live.

The goal of the water planning process is to ensure that we have adequate water supplies in times of drought. Water is Texas' most precious natural resource and is routinely threatened during our state's recurring periods of drought. Texas has a long history of drought, and there is no sign of that pattern changing; in fact, recent droughts remind us that more severe drought conditions could occur in the future. The drought of the 1950s is considered the "drought of record" for Texas and remains the benchmark for the water planning process.

Ensuring that we have adequate and affordable water supplies for all Texans requires advance planning. The Texas Water Development Board (TWDB) is the State's lead water planning and infrastructure financing agency and is statutorily responsible for administering the regional water planning process and

preparing and adopting the state water plan every five years. Each new state water plan, which considers a 50-year horizon, must reflect and respond to changes in population, water supplies, technological improvements, economic shifts, project viability, and state policy. Water is critical to the future of Texas, and responsible planning ensures that we are addressing both the short- and long-term water needs of the state. Providing sufficient water supplies at reasonable costs presents new challenges with each planning cycle. Among those challenges are the increased costs of developing water supply projects that often require many years to implement.

How do we plan?

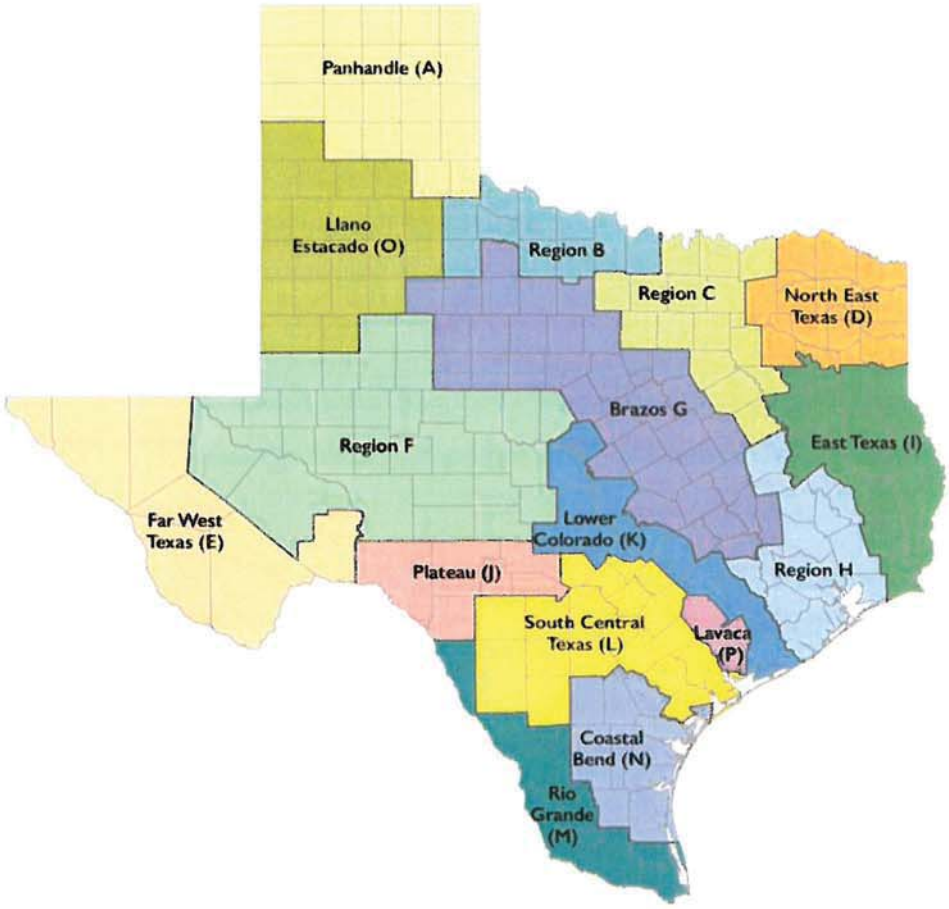
Since 1997, water planning in Texas has been based on a "bottom-up" approach focused at the regional level. The state is divided into 16 regional water planning areas (Figure ES.1). Each planning area is represented by a planning group that, on average, consists of about 23 members representing at least 12 statutorily required interests: the public, counties, municipalities, industries, agriculture, environment, small businesses, electric-generating utilities, river authorities, water districts, water utilities, and groundwater management areas where applicable.

During each five-year planning cycle, regional water planning groups evaluate population projections, water demand projections, and existing water supplies. Each planning group then identifies water shortages under drought of record conditions and recommends water management strategies (with cost estimates) to address those potential shortages. The bottom-up approach allows the planning groups to assess specific risks and uncertainties in their own regions and to evaluate potential impacts of water management strategies on their region as well as on the state's water, agricultural, and natural resources.

Once the planning groups adopt their regional water plans, the plans are sent to the TWDB for approval. The TWDB then prepares the state water plan based on the regional water plans.

The state water plan also serves as a guide for state water policy and includes the TWDB's policy recommendations to the Texas Legislature. Each step of the water planning process is open to the public and provides numerous opportunities for public input.

Figure ES.1 - Regional water planning areas

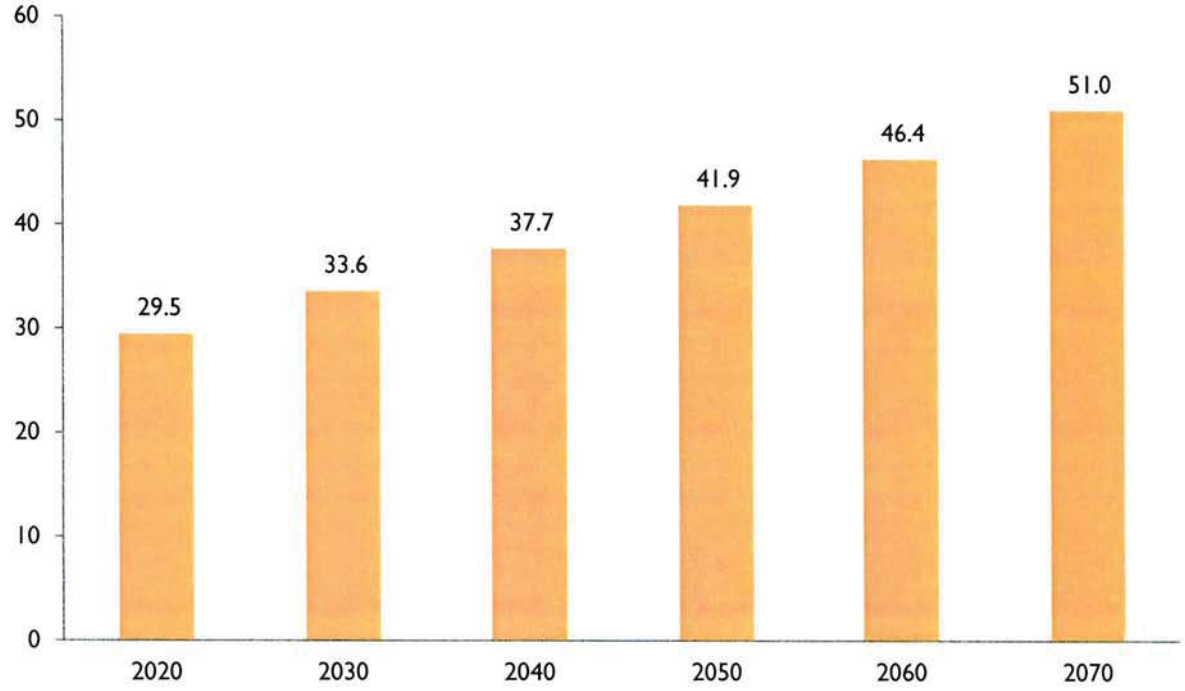


How many Texans will there be?

The population in Texas is expected to increase 73 percent between 2020 and 2070, from 29.5[1] million to 51 million people (Figure ES.2). Growth rates vary considerably throughout the state. For example, 30 counties are projected to at least double their population by 2070; the rest are expected to remain the same, decline, or grow only slightly. Over half of all the statewide population growth between 2020 and 2070 is expected to occur within Regions C (which includes the Dallas-Fort Worth metropolitan area) and H (which includes the Houston metropolitan area).

[1] Planning numbers presented throughout this plan have been rounded.

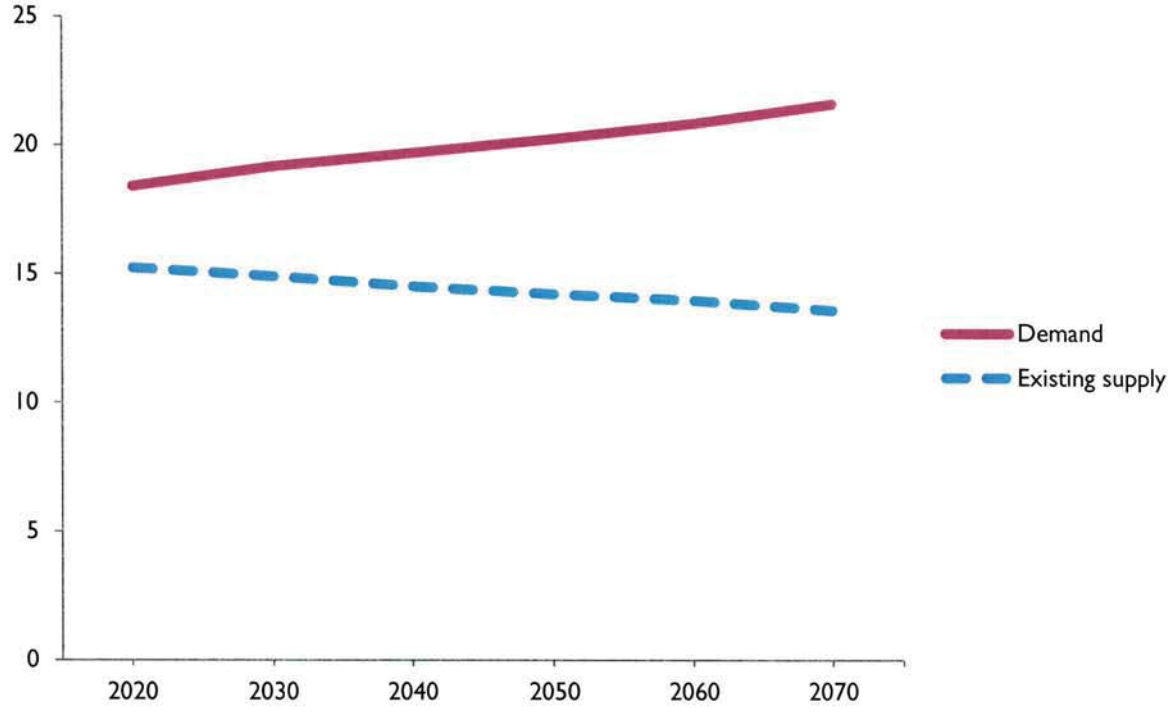
Figure ES.2 - Projected population in Texas (millions)



How much water will we require?

While the population is projected to increase 73 percent over the next 50 years, water demand in Texas is projected to increase by only 17 percent, from about 18.4 million acre-feet per year in 2020 to about 21.6 million in 2070 (Figure ES.3). Steam-electric (power generation) demand is expected to increase in greater proportion than any other water use category, from 953,000 acre-feet per year in 2020 to 1.7 million in 2070. Municipal demands are anticipated to grow by the greatest total amount, from 5.2 million acre-feet per year in 2020 to 8.4 million in 2070. Agricultural irrigation demand is expected to decrease, from 9.4 million acre-feet per year in 2020 to about 7.8 million in 2070, due to more efficient irrigation systems, reduced groundwater supplies, and the transfer of water rights from agricultural to municipal users. Manufacturing and livestock demands are expected to increase, while mining demand is expected to decline over the next 50 years.

Figure ES.3 - Projected annual water demand and existing water supply in Texas (millions of acre-feet)



How much water do we have now?

The existing water supply—categorized as surface water, groundwater, and reuse water—is projected to decrease approximately 11 percent, from 15.2 million acre-feet per year in 2020 to about 13.6 million in 2070 (Figure ES.3). For planning purposes, the existing supply represents water supplies that are physically and legally available to be produced and delivered with current permits, current contracts, and existing infrastructure during drought of record conditions.

Existing surface water supplies are projected to decrease by about 1 percent, from 7.5 million acre-feet per year in 2020 to 7.4 million in 2070 due to sedimentation and changes in water contracts.

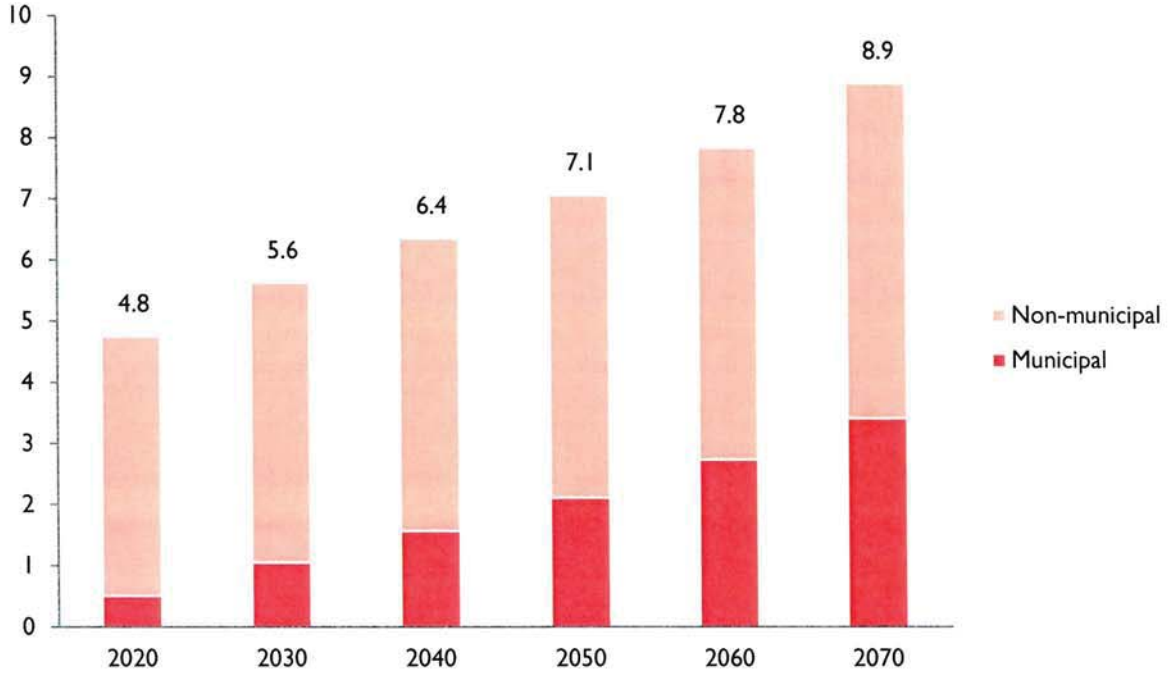
Groundwater supplies are projected to decrease 24 percent, from 7.2 million acre-feet per year in 2020 to 5.4 million in 2070. This decrease is primarily due to reduced supply from the Ogallala Aquifer (as a result of its depletion over time) and the Gulf Coast Aquifer (due to mandatory reductions in pumping to prevent land surface subsidence). Policy decisions made by groundwater conservation districts through the groundwater management area joint planning process also resulted in numerous changes to groundwater availability.

Do we have enough water for the future?

Because our existing water supply is not enough to meet our future demand for water during times of drought, Texas would need to provide 8.9 million acre-feet of *additional* water supplies, including in the form of water savings through conservation, to meet its demand for water in 2070. In the event of a recurrence of the drought of record in 2020, the state would face an immediate need for 4.8 million acre-feet per year in additional water supplies (Figure ES.4). Of that, 11 percent, (511,000 acre-feet) would be required for municipal water users, who face the largest water demand increase over the next

50 years. Total needs are projected to increase by 87 percent between 2020 and 2070, from 4.8 million to 8.9 million acre-feet per year. In 2070, 3.4 million acre-feet per year or, 38 percent of the total needs, is associated with municipal users.

Figure ES.4 - Projected annual water needs in Texas (millions of acre-feet)



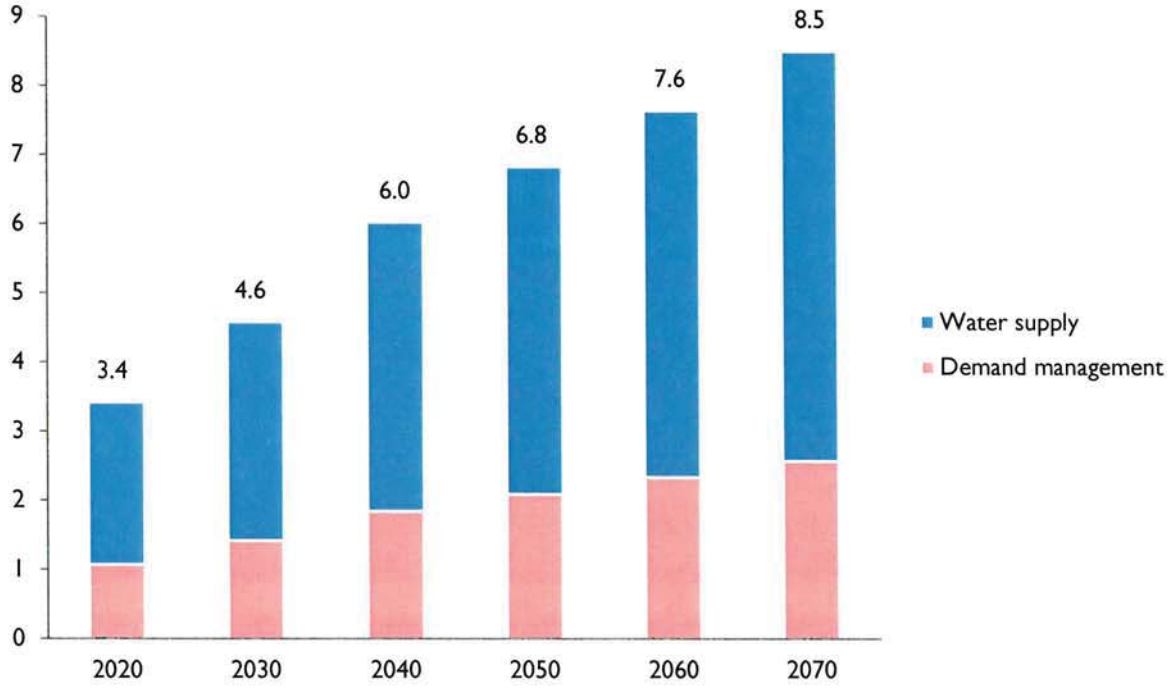
What can we do to get more water?

When the projected demand for water exceeds the existing supply, the planning groups recommend water management strategies—specific plans and associated projects—to either provide additional water supply or reduce water demand. Water management strategies include conservation, new reservoirs, groundwater wells, water reuse, seawater and groundwater desalination plants, and more.

In the 2017 State Water Plan, planning groups recommended approximately 5,500 water management strategies and approximately 2,400 specific water management strategy projects to increase the water supply. Strategies may or may not require new water infrastructure—referred to as water management strategy projects—to be developed. If implemented, these strategies would provide 8.5 million acre-feet per year in additional water supplies to water user groups by 2070 (Figure ES.5).

The full capacities of all recommended projects and strategies that are included in the approved regional water plans, including any of their associated capacities or volumes of water that may not be assigned to specific water user groups, are also considered to be part of the state water plan.

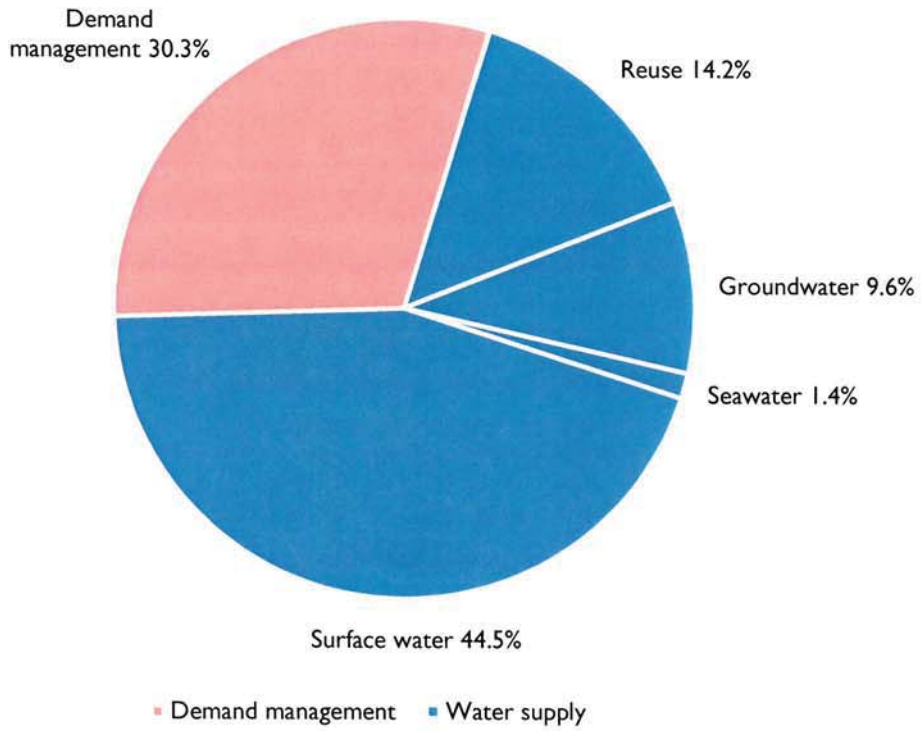
Figure ES.5 - Annual volume of recommended water management strategies (millions of acre-feet)



By 2070, about 30 percent of the total volume of these strategies would be in the form of demand management. Demand management refers to measures that reduce the need for additional water, such as conservation and drought management. Drought management includes activities that temporarily restrict water use for certain types of activities and businesses.

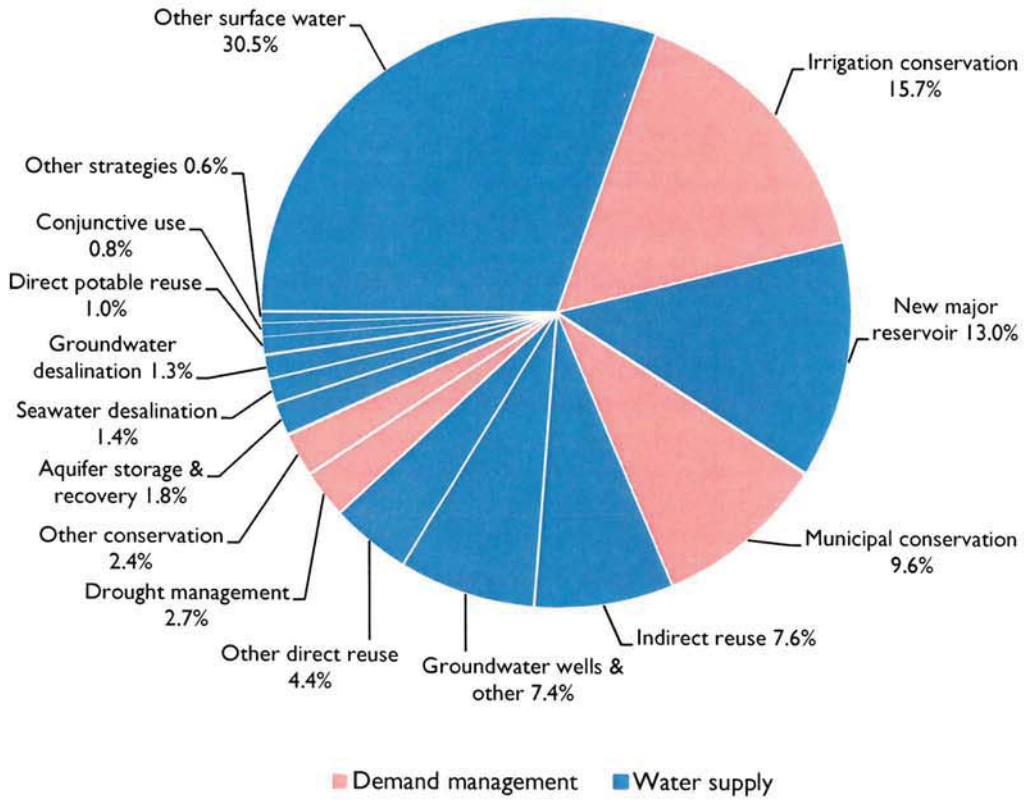
Surface water resources, including new reservoirs, compose the greatest portion of the recommended water management strategy supplies in 2070 at approximately 45 percent. Reuse is expected to provide approximately 14 percent, groundwater resources approximately 10 percent, and seawater desalination about 1 percent of additional supplies to water user groups (Figure ES.6).

Figure ES.6 - Share of recommended water management strategies by water resource in 2070



Planning groups recommended a wide variety of water management strategies, each of which relies on a specific combination of water source(s), infrastructure, and technology (Figure ES.7). The types of recommended strategies depended on the region, available water resources, and water needs.

Figure ES.7 - Share of recommended water management strategies by strategy type in 2070



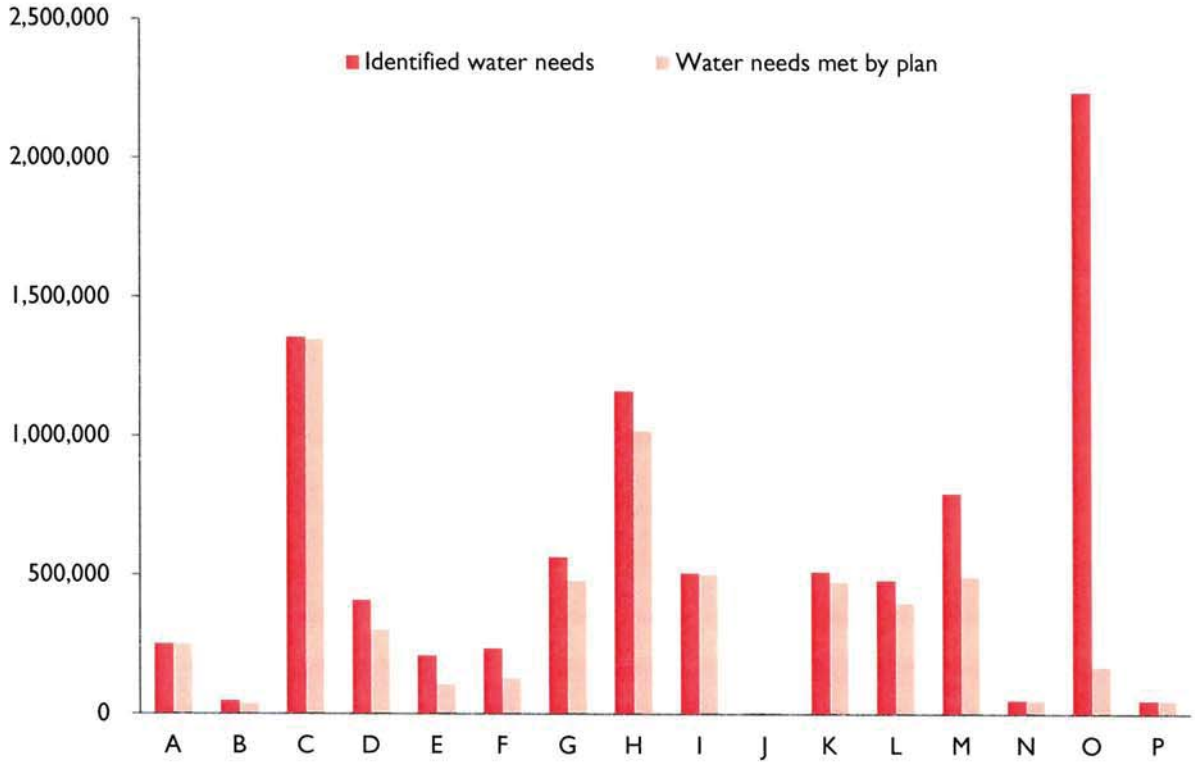
Some planning groups recommended strategies that, if implemented, would provide more water than may be required to meet their region's water needs under drought of record conditions. This additional supply addresses risks and uncertainties that are inherent to the planning process and the operation and management of water systems, including

- higher population growth and/or water demands than projected;
- unanticipated reduction in existing water supplies;
- the occurrence of a drought worse than the drought of record;
- water system operation, treatment losses, and operational safety factors; and
- potential difficulties in financing and implementing water supply projects.

Are all the water supply needs met?

Only one planning group (Region P) was able to recommend water management strategies capable of meeting the needs for all water user groups. The remaining 15 planning groups were unable to identify feasible strategies that met Texas' planning requirements and that would meet all of the needs in their regions (Figure ES.8).

Figure ES.8 - Annual water supply needs and needs met by the plan by region in 2070 (acre-feet)



Statewide, the majority of water needs associated with municipal, manufacturing, and steam-electric water user groups are met by the plan in 2070 (Figure ES.9). However, approximately 2.9 million acre-feet of water supply needs remain unmet by this plan in 2020, increasing to approximately 3.1 million acre-feet in 2070 (Figure ES.10). Irrigation represents the vast majority (ranging from 90 percent to 96 percent) of unmet needs in all decades. At least some unmet water supply needs occur for all categories of water user groups in the plan. The inability to meet a water user group's need in the plan is usually due to the lack of an economically feasible water management strategy, but this does not prevent an entity from pursuing additional water supplies.

Figure ES.9 - Annual water supply needs and needs met by the plan by water use category in 2070 (acre-feet)

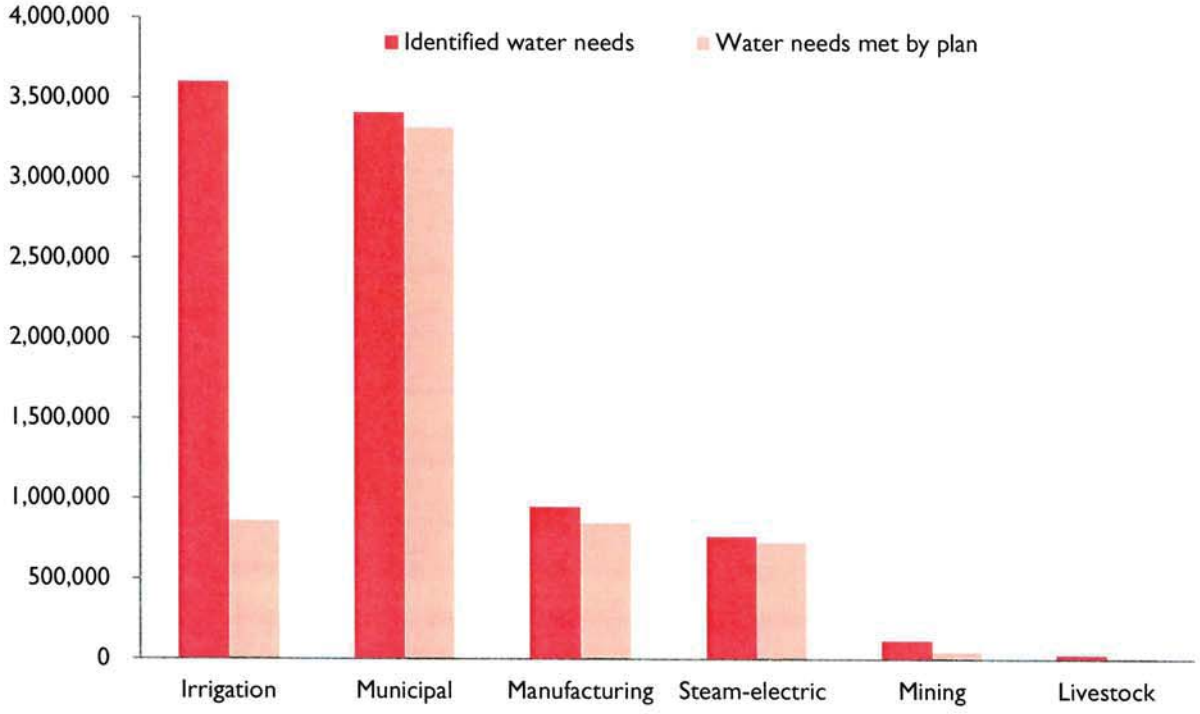
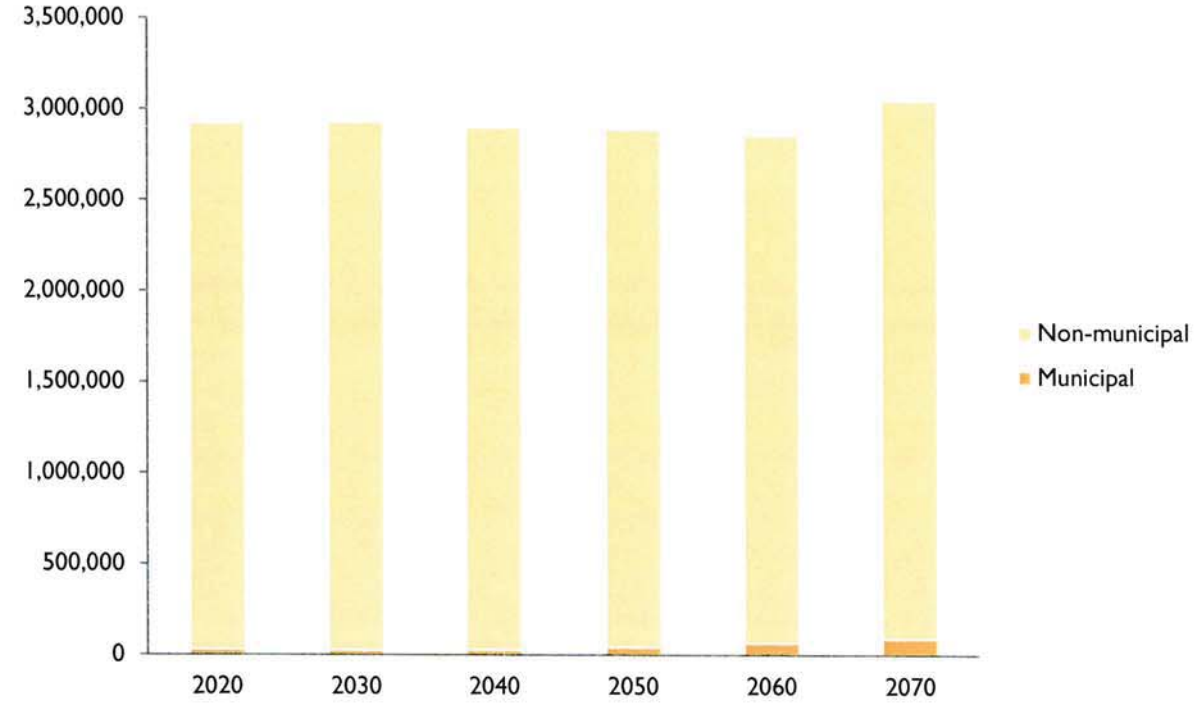


Figure ES.10 - Statewide annual water supply needs that are unmet by the plan (acre-feet)



How much will it cost?

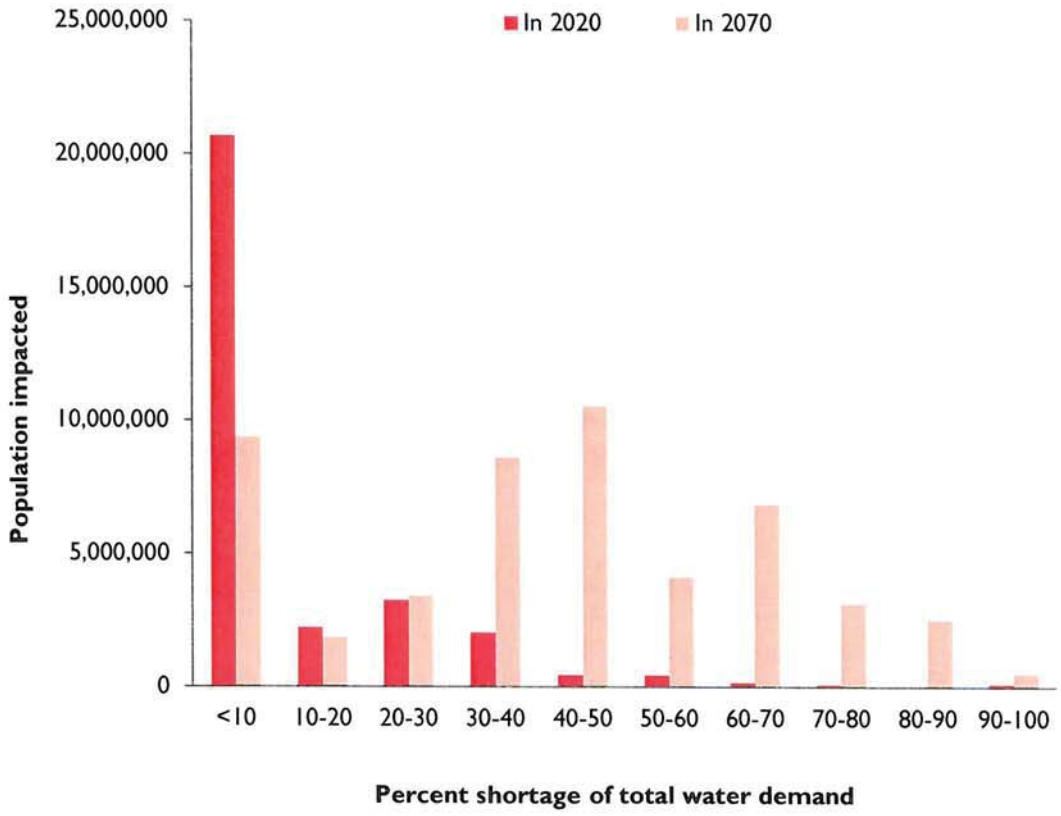
The estimated total capital cost of the 2017 State Water Plan, which represents the capital costs of all recommended water management strategies and projects in the 2016 regional water plans, is $62.6 billion. These costs include the funds needed to permit, design, acquire water rights and land, and construct projects necessary to implement the recommended strategies. The vast majority of the cost, approximately $59.1 billion, is associated with projects sponsored by municipal water user groups and wholesale water providers that also provide water to municipal water users.

What if we do nothing?

Texas would suffer significant economic losses should recommended water management strategies not be implemented and another drought of record, or worse, occur. Economic modeling indicates that Texas businesses and workers could lose approximately $73 billion in income annually in 2020 and $151 billion annually in 2070. Job losses could total approximately 424,000 in 2020 and 1.3 million in 2070. This estimate does not include additional drought impacts such as those to dry land farming and other activities not associated directly with water needs identified by the plan, nor does it include the potential for greater impacts due to a drought worse than the drought of record.

If we do nothing, approximately 82 percent of Texans would face at least a 10 percent water shortage in their cities and residences in 2070, and approximately one-third of Texas' municipal water users would have less than half of the water supplies that they require to live and work by 2070 (Figure ES.11).

Figure ES.11 - Municipal water needs for statewide population in 2020 and 2070



How are strategies in the state water plan funded?

Sponsors of strategies, such as cities or wholesale water providers, must take action to develop water projects and conservation measures, many of which will require financial assistance. Water providers surveyed during the planning process reported an anticipated need of $36.2 billion in state financial assistance to implement strategies in their regions. Of this amount, approximately $35 billion is for strategies associated with municipal water suppliers or wholesale water providers. Cities, communities, and individuals can ask their water providers to apply for state financing for water projects.

In 2013, the Texas Legislature created the State Water Implementation Fund for Texas (SWIFT) and State Water Implementation Revenue Fund for Texas (SWIRFT) to provide affordable, ongoing state financial assistance for projects in the state water plan. Passed by the legislature and approved by Texas voters through a constitutional amendment, the SWIFT[2] program assists communities in developing and optimizing water supply projects at cost-effective rates. The program provides low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects. To be eligible for the SWIFT program, a project and its associated capital costs must be included in the state water plan. In addition to SWIFT, the TWDB has several state and federally funded financial assistance programs that may be utilized to fund projects in the state water plan.

What have we done already to implement water management strategies in the previous plan?

Since adoption of the 2012 State Water Plan, the TWDB has provided more than $1.9 billion in financial assistance to help implement approximately 60 state water plan projects that are associated with approximately 1 million acre-feet per year of additional water supply. Many water management strategy projects are currently in various stages of being implemented across the state, including groundwater wells, conservation, and reservoir projects.

What more can we do?

Planning groups made a number of regulatory, administrative, and legislative recommendations that they believe are needed to better manage Texas' water resources and to prepare for and respond to droughts. Based on their recommendations and other policy considerations, the TWDB recommends the following to improve water resources management in the state and to facilitate the implementation of the 2017 State Water Plan:

Issue 1: Unique stream segment designation

The legislature should designate the five river or stream segments of unique ecological value recommended by the 2016 regional water plans (Alamito Creek, Black Cypress Bayou, Black Cypress Creek, Pecan Bayou, and Terlingua Creek) for protection under Texas Water Code §16.051(f).

[2] The SWIFT *program* includes two funds, the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT). Revenue bonds for the program are issued through the SWIRFT.

Issue 2: Unique reservoir site designation

The legislature should designate for protection under Texas Water Code §16.051(g) three sites of unique value for the construction of reservoirs as recommended in the 2016 regional water plans: Coryell County Off-Channel Reservoir, Millers Creek Off-Channel Reservoir, and Parkhouse II (North).

Issue 3: Timing of the adoption of desired future conditions with respect to the state and regional water planning cycles

The legislature should require that the next set of desired future conditions be adopted collectively by the district representatives of each groundwater management area by January 5, 2022, and every five years thereafter and require that the regional water plans under development as of that same date be consistent with those adopted desired future conditions in effect on that date.

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1 Introduction

Quick facts

Texas' state water plans are based on future conditions that would exist in the event of a recurrence of the worst recorded drought in Texas' history—known as the "drought of record"— a time when, generally, water supplies are lowest and water demands are highest.

This is the first state water plan that reflects the results of legislative changes made in 2013 to the water planning and financing process.

Since 1997, water planning in Texas has been a regional, bottom-up process. Sixteen regional water plans are developed by regional water planning groups every five years and are the basis for the state water plan.

More than 450 planning group voting members participated in the development of the 2016 regional water plans.

Details from the regional and state water plans, including summaries by region, county, and water user group, can be explored through the interactive state water plan at texasstatewaterplan.org.

The 2017 State Water Plan is the first of the next generation of state water plans produced in accordance with sweeping legislative changes made by the 83rd Texas Legislature in 2013. The 83rd session marked the beginning of Texas' new approach to turning water plans into water supplies by creating the State Water Implementation Fund for Texas (SWIFT) program to fund projects in the state water plan. With assistance from the SWIFT program, Texas now has the means to help meet the state's water needs far into the future.

In addition to the changes made in conjunction with the SWIFT legislation, this state water plan also incorporates numerous other "firsts" that illustrate Texas' visionary, transparent, and science-based approach to planning and funding water projects.

Water planning is not new to Texas; we have been producing state water plans since 1961. This is our tenth plan and the fourth to be produced under the regional water planning process established in 1997. Our experience and our commitment to water planning continue to keep Texas at the forefront of state water planning in the United States.

The evolution of the regional and state water planning process has led the TWDB to change how it collects planning information and how it delivers that information to the public. One of the most significant additions to the state water plan has been the launch of the TWDB's interactive state water plan website. The site relies on the data provided by the regional water planning groups and provides users easy access to the large amount of data on which the state water plan is based.

1.1 New in the 2017 State Water Plan

Recent droughts influenced this state water plan. Although the 1950s remain Texas' worst recorded drought, this fourth planning cycle coincided with the end of Texas' second-worst recorded drought in history—from 2010 to 2014. The importance of water planning was further punctuated by the 2011 drought, which was the worst single-year drought in Texas' history. In response to these recent droughts, the TWDB revised the planning rules to require additional drought response information that is now included as a separate chapter in each regional water plan.

This state water plan incorporates several "firsts," including

- the first state water plan to include a drought response chapter;
- the first state water planning cycle in which planning groups submitted a prioritized list of their recommended projects simultaneously with the submittal of their final adopted regional water plans;

- the first plan that includes information reported by planning groups on the implementation of water management strategies contained in the previous state water plan;
- the first state water plan that includes a significant share of capital costs that are directly associated with municipal water conservation strategies;
- the first planning cycle in which modeled available groundwater volumes are the primary basis for groundwater availability statewide;
- the first planning cycle in which environmental flow standards adopted by the Texas Commission on Environmental Quality have been incorporated into water management strategy evaluations;
- the first planning cycle in which planning groups were required to directly incorporate information from the TWDB's state water planning database into their regional water plans;
- the first time that a state water plan incorporates, by adoption, an online, interactive state water plan as an integral component of the plan. The interactive state water plan website increases transparency and provides detailed planning information accessible to the public through customized views of planning data at the local, regional, or statewide level; and,
- the earliest adoption, within a five-year planning cycle, of a state water plan since 1997, well ahead of the statutory deadline of January 5, 2017, to facilitate funding projects through SWIFT. The accelerated timeline saves planning groups the time and expense of amending previous regional water plans and the 2012 State Water Plan in order to qualify new projects for SWIFT funding.

1.2 Regional water planning

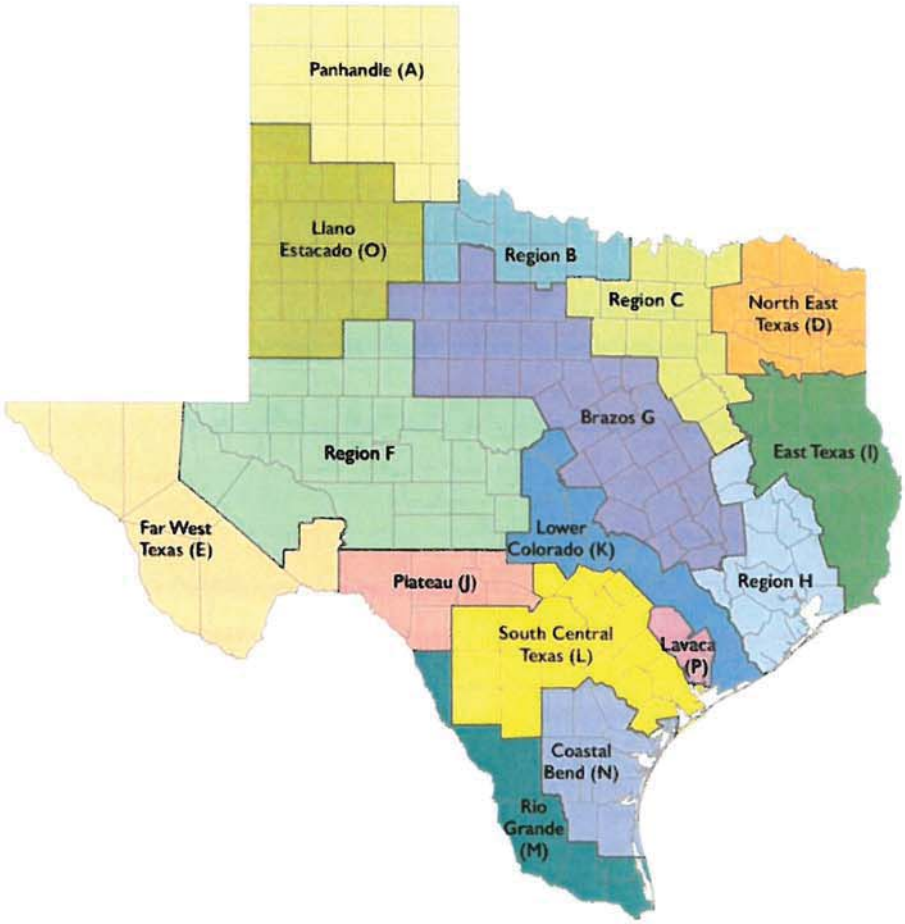
The foundation of the state water plan is the regional water planning process. Every five years planning groups involve local and regional stakeholders to develop regional plans for how to meet water needs during drought. Based on those regional water plans, the TWDB then develops a comprehensive state water plan every five years.

Legislative requirements

One of the most important requirements of the 1997 legislation creating the regional water planning process was that the TWDB could only provide financial assistance for water supply projects if the needs to be addressed by the project were consistent with the relevant regional water plan and the state water plan. This same consistency provision also applied to the granting of surface water right permits by the Texas Commission on Environmental Quality and thereby serves as a significant incentive for water providers and other stakeholders alike to actively participate in the planning process. Additionally, to be eligible for financial assistance from the recently created SWIFT, a project and its associated capital costs must be included in the state water plan.

Following the 1997 legislation, the TWDB introduced administrative rules to guide the new regional water planning process. The TWDB designated 16 regional water planning areas (A through P) (Figure 1.1), taking into consideration river basin and aquifer delineations, water utility development patterns, socioeconomic characteristics, existing planning areas, state political subdivision boundaries, public comments, and other factors. The TWDB is required to review and update the planning area boundaries at least once every five years, and no changes have been made to date.

Figure 1.1 - Regional water planning areas



Regional water planning groups

Each of the 16 regional water planning areas has its own planning group. Every five years, the planning groups are responsible for developing regional water plans that are funded primarily through legislative appropriations, administered by the TWDB, and guided by statute, rules, contracts, members of the planning groups, and the general public. In accordance with the Texas Open Meetings Act, all planning groups conduct their business in meetings that are open to the public and that give the public advance notice of the time, date, location, and subject matter of the meetings.

Each planning group is required to maintain at least one representative of each of the following 12 interests:

1) The general public
2) Counties
3) Municipalities
4) Industry
5) Agriculture

6) Environment
7) Small business
8) Electric-generating utilities
9) River authorities
10) Water districts
11) Water utilities
12) Groundwater management areas that fall within the planning area (where applicable)

Planning groups must have at least one voting representative from each required interest and may designate representatives for additional interests that are important to the planning area. Currently, each planning group has more than the minimum 12 voting members, with the largest having 30 voting members. More than 450 voting members participated in the development of the 2016 regional water plans (see plan acknowledgments). Planning group members serve in a volunteer capacity and are not compensated by the planning groups for their time.

Planning groups also include non-voting members from the TWDB, the Texas Department of Agriculture, the Texas Commission on Environmental Quality, and the Texas Parks and Wildlife Department, as well as liaisons from adjacent planning groups.

A regional water plan must meet all statutory, administrative rule, and contract requirements. In the course of each five-year planning cycle, each planning group must

- maintain its membership and governing bylaws;
- designate a political subdivision of the state, such as a river authority or council of governments, to serve as its administrator for the purpose of arranging meetings, managing grant-funded contracts, and providing public notices (the political subdivision provides staff resources, at the region's expense, to perform these administrative services);
- apply to the TWDB for regional water planning grant funding through their political subdivision;
- select a technical consultant(s) to serve at the direction of the planning group and to collect information, perform analyses, and prepare the regional water plan document;
- direct the development of their water plan, including making decisions about which water management strategies will be recommended;
- solicit and consider public input, conduct open meetings, and, together with its political subdivision, provide required public notices, including for public hearings on the initially prepared (draft) regional water plan;
- submit its initially prepared plan and standardized data to the TWDB for review; and
- adopt a final regional water plan and submit it to the TWDB for approval.

To facilitate the development of the regional water plans, each planning group is supported by a TWDB project manager. The project manager serves as a non-voting planning group member, attends every planning group meeting, and manages the associated grant contract. The project managers also provide technical and administrative assistance during planning group meetings and throughout the development of the regional water plans to help ensure the planning groups meet their deadlines and all planning requirements.

Development of the regional water plan

Regional water planning is based on several fundamental parameters that guide the entire process, including

- planning for drought of record conditions when, generally, water supplies are lowest and water demands are highest;
- conducting evaluations of future water demands, existing supplies, potential shortages and feasible water management strategies for all wholesale water providers and for approximately 2,600 water user groups in six categories (municipal, manufacturing, steam-electric, mining, irrigation, and livestock); and
- reporting the associated data (by decade and broken down geographically) over a 50-year planning period (in this case from 2020–2070) by water user group, county, river basin, and regional water planning area.

Planning groups must also separately submit a prioritization of all the recommended water management strategy projects for funding consideration from the SWIFT program. The prioritization is based on the uniform standards approved by the TWDB. These standards, required in statute, were developed by the chairs of the planning groups through a stakeholder committee process facilitated by the TWDB.

The 16 plans are the product of hundreds of meetings; the effort and many hours of hard work of the planning groups, consultants, and stakeholders; and the large amount of information that the planning groups develop along the way. Each regional plan presents information in 11 chapters with much of the information also entered directly into the TWDB's state water planning database.

Development of the state water plan

After planning groups adopt their regional water plans, they are submitted to the TWDB for approval. As required by statute, the TWDB develops the state water plan based on those plans. The state water plan compiles key information from the regional water plans and also serves as a guide to state water policy. It explains planning methodology, presents data for the state as a whole, identifies statewide trends, and provides recommendations to the Texas Legislature. Prior to adopting the final state water plan, the TWDB releases a draft for public comment, publishes in the Texas Register its intent to adopt the state water plan, notifies the planning groups, and holds, at a minimum, one public hearing.

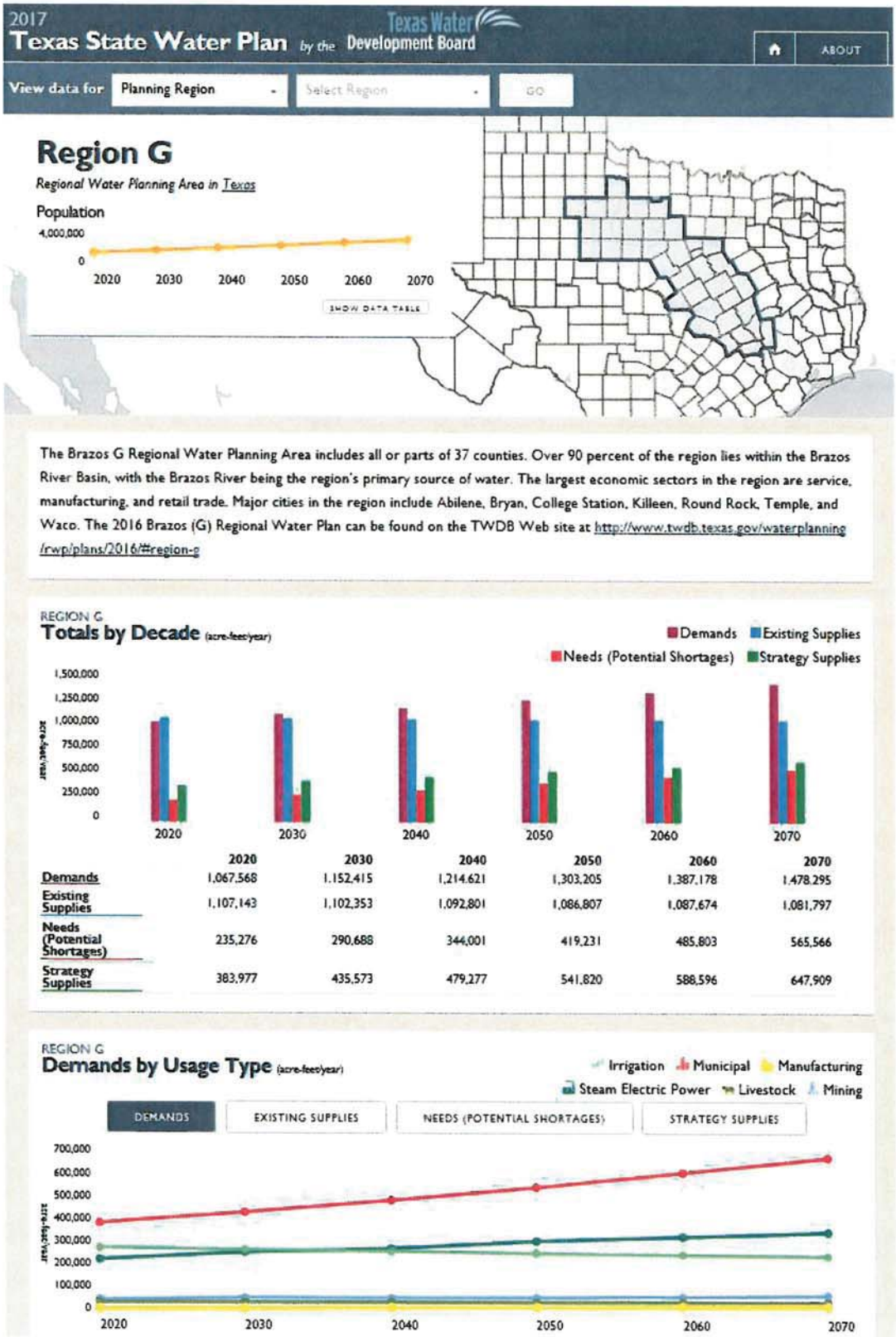
1.3 An interactive state water plan

The 2017 State Water Plan contains and makes available more in-depth information about water planning than ever before. While previous state water plans have been limited by the amount of information that would fit in a single published document, this state water plan provides information through both the actual state water plan publication and an interactive state water plan website (texasstatewaterplan.org). The publication and website together make up the state water plan approved and adopted by the TWDB. The interactive state water plan makes it easy to find specific information on a community's potential water shortages and strategies recommended to address them. Additionally, the interactive website increases transparency, promotes awareness about water issues to the general public, and makes this critical information more accessible to a new generation of water users.

The interactive state water plan allows the public to explore the planning information in ways that cannot be accomplished through a static document. Data are presented simultaneously in different dimensions, at varying geographic levels, and through maps, tables, and additional graphics. Users can customize what they see, for example, by selecting data associated with a specific water use category or from a specific planning decade (Figure 1.2).

This new approach to the delivery of water planning data to the public provides an up-close view of local information or a big-picture view of the entire state. Once fully developed, the site will allow users to view, geographically, water sources that a particular water user group relies on today for its existing water supplies and find out what recommended strategies and water sources it will depend on in the future.

Figure 1.2 - View of interactive state water plan site



The interactive state water plan is facilitated by the state water planning database, which is populated through the internet directly by the planning groups. Planning groups rely on this dataset to produce portions of their regional water plans, including calculating water needs for each water user group. Some of the planning data, such as water demand projections and modeled available groundwater volumes, are developed and entered directly by the TWDB.

Through the interactive state water plan, information can be viewed in numerous ways:

- **Different geographic levels**—community, county, region, or state
- **Different types of planning information**—projected water demands, existing water supplies, water needs (potential shortages), and recommended water management strategies
- **Water use categories**—municipal, manufacturing, mining, steam-electric, irrigation, or livestock
- **Specific planning decades**—in multiple decades spanning the 50-year planning cycle (currently 2020–2070)

The interactive state water plan is also viewable on most mobile devices, and the website can also be embedded in other websites. All data can be downloaded into a spreadsheet for further use.

Overall, the expansion of the 2017 State Water Plan to include an interactive format will give Texans the opportunity to access more information and put that information into greater context based on their own specific needs.

1.4 Organization of the plan

The next chapter lists the TWDB's policy recommendations to the Texas Legislature, and Chapter 3 provides drought response information.

Chapter 4 presents the funding needs required to implement this new plan, which were identified by planning groups. Chapter 9 provides more information on the types of projects that have already been funded through SWIFT as well as on the implementation of the previous state water plan.

The remaining chapters, 5–8, summarize the steps that go into developing water plans and summarize the population and water demand projections, water supplies, needs, and recommended water management strategies and projects that are the fundamental building blocks of each state water plan. A variety of summaries of the information contained in these chapters can be viewed through the interactive state water plan website at texasstatewaterplan.org.

To better understand the context in which planning groups plan for water needs during a drought, it can be helpful to have more knowledge of how water is managed in the state in general. Each regional water plan must be consistent with all laws, rules, and regulations applicable to water use in the planning area. Appendix A.1 provides additional information on how surface water and groundwater are managed and on water quality, drinking water, and interstate waters, all of which are important considerations when planning for drought conditions. This appendix also includes a brief history of water planning in Texas.

2 Policy recommendations

The state water plan, as formally adopted by the Board, serves as a guide to state water policy and includes legislative recommendations on various issues related to water planning and implementation.

By statute, the Board must consider making recommendations that it believes are needed and desirable to facilitate voluntary water transfers and to identify river and stream segments of unique ecological value and sites of unique value for the construction of reservoirs. Previous state water plans also have recommendations regarding such issues as financing the state water plan, requiring retail utilities to conduct water loss audits, and encouraging water conservation.

The TWDB based the recommendations for this plan largely on recommendations contained in the 2016 regional water plans.

Regional water planning groups made a number of regulatory, administrative, and legislative recommendations[3] in the adopted regional water plans to

- facilitate the orderly development, management, and conservation of water resources;
- facilitate preparation for and response to drought conditions so that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare;
- further economic development; and
- protect the agricultural and natural resources of the state and regional water planning areas.

Along with general policy and statutory recommendations, planning groups also made recommendations in the 2016 regional plans for designating river and stream segments of unique ecological value and unique sites for reservoir construction; however, the Texas Legislature is responsible for making the official designations of these sites.

Planning groups may recommend the designation of all or parts of river and stream segments of unique ecological value located within their planning areas. These recommendations are based upon several criteria:

- biological function
- hydrologic function
- riparian conservation areas
- high water quality
- exceptional aquatic life
- high aesthetic value
- threatened or endangered species/unique communities

The recommendations include physical descriptions of the stream segments, maps, and other supporting documentation. The planning groups coordinate each recommendation with the Texas Parks and Wildlife Department and include, when available, the Texas Parks and Wildlife Department's evaluation of the river or stream segment in their final plans.

A planning group may also recommend a site as unique for reservoir construction based upon several criteria:

- site-specific reservoir development is recommended as a specific water management strategy or in an alternative long-term scenario in an adopted regional water plan
- location; hydrology; geology; topography; water availability; water quality; environmental, cultural, and current development characteristics; or other pertinent factors make the site

[3] Available at http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/index.asp

uniquely suited for: (a) reservoir development to provide water supply for the current planning period; or (b) to meet needs beyond the 50-year planning period

Based on planning groups' recommendations and other policy considerations, the TWDB makes the following recommendations:

Issue 1: Unique stream segment designation

The legislature should designate the five river or stream segments of unique ecological value recommended by the 2016 regional water plans (Alamito Creek, Black Cypress Bayou, Black Cypress Creek, Pecan Bayou, and Terlingua Creek) for protection under Texas Water Code §16.051(f).

Summary of the recommendation

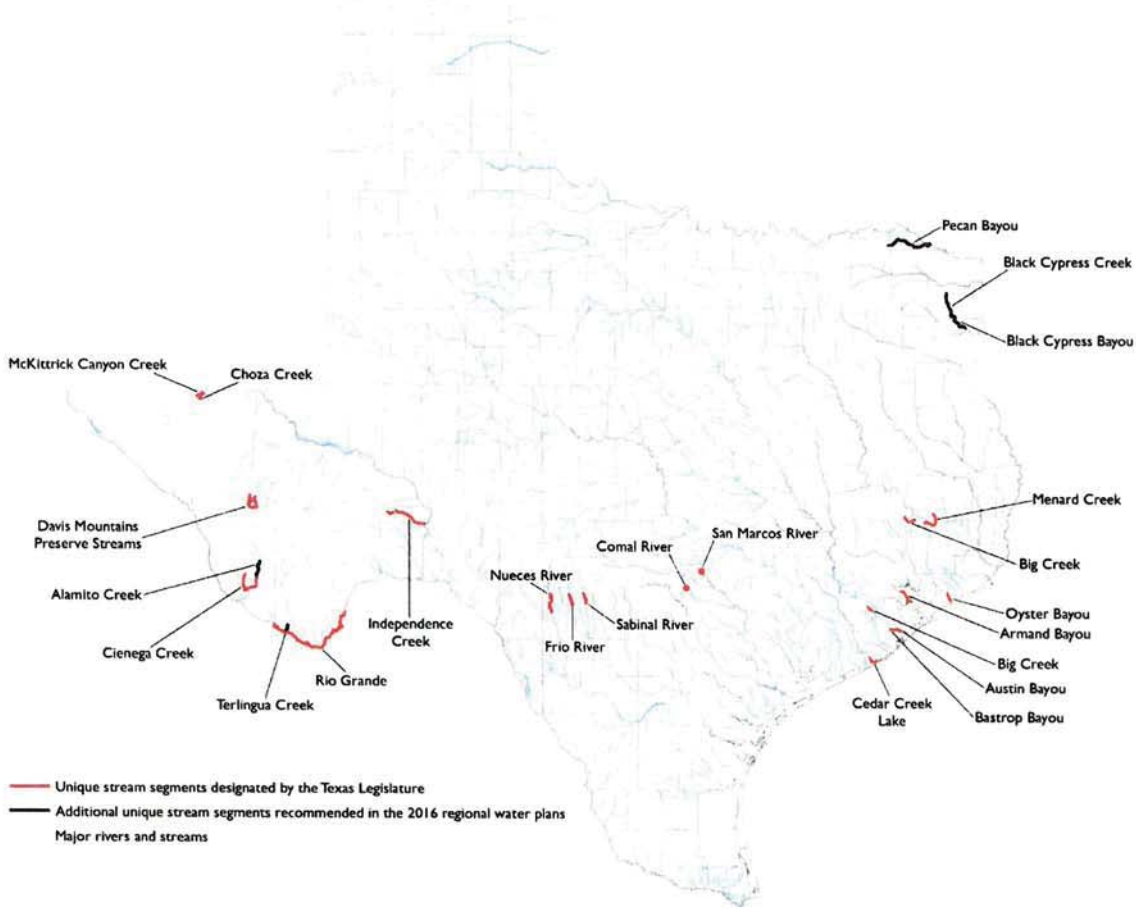
Pursuant to Texas Water Code §16.051(e) and §16.053(e)(6), state and regional water plans shall identify river and stream segments of unique ecological value that they recommend for protection. By statute, this designation solely means that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in a specific river or stream segment that the legislature has designated as having unique ecological value (§16.051(f)). It is up to the legislature to make such designations.

The recommendation is for the following five stream segments:

- **Alamito Creek** in Presidio County solely within the boundary of the 1,061-acre Trans Pecos Water Trust (TPWT)—approximately a 3.5-mile stream segment.
- **Black Cypress Bayou** in Marion and Cass counties from the confluence with Big Cypress Bayou in south central Marion County upstream to the confluence of Black Cypress Creek east of Avinger in south Cass County.
- **Black Cypress Creek** in Cass and Morris counties from the confluence with Black Cypress Bayou east of Avinger in southern Cass County upstream to its headwaters located 4 miles northeast of Daingerfield in the eastern part of Morris County.
- **Pecan Bayou** in Red River County from 2 miles south of Woodland in northwestern Red River County east to the Red River, approximately 1mile west of the eastern Bowie County line.
- **Terlingua Creek** in Brewster County solely within the boundary of Big Bend National Park—approximately a 5-mile stream segment. The reach of Terlingua Creek recommended as an ecologically unique stream segment is only that portion of the creek located within Big Bend National Park. This proposed unique segment is approximately 5 miles in length. Terlingua Creek transects Big Bend National Park from the confluence with the Rio Grande to the Big Bend National Park boundary located about 5 miles north of the river.

Senate Bill 3, passed by the 80th Texas Legislature, designated 19 stream segments recommended in the 2007 State Water Plan, and the 84th Texas Legislature designated an additional five segments from the 2012 State Water Plan with passage of House Bill 1016. Some of these designated stream segments included multiple, separate reaches of the same stream (Figure 2.1).

Figure 2.1 - Unique stream segments previously designated by the Texas Legislature and additional recommended segments



Issue 2: Unique reservoir site designation

The legislature should designate for protection under Texas Water Code §16.051(g) three sites of unique value for the construction of reservoirs as recommended in the 2016 regional water plans: Coryell County Off-Channel Reservoir, Millers Creek Off-Channel Reservoir, and Parkhouse II (North).

Summary of the recommendation

Pursuant to Texas Water Code §16.051(e) and §16.053(e)(6), the state and regional water plans shall identify sites of unique value for reservoir construction. This authority also relates to the state's general interest in reservoir development as codified in the Texas Constitution:

> "It is hereby declared to be the policy of the State of Texas to encourage the optimum development of the limited number of feasible sites available for the construction or enlargement of dams and reservoirs for conservation of the public waters of the state, which waters are held in trust for the use and benefit of the public, and to encourage the optimum regional development of systems built for the filtration, treatment, and transmission of water and wastewater." - Article 3, Section 49-d(a)

Texas Water Code §16.051(g) gives the legislature authority to designate a site of unique value for the construction of a reservoir. By statute, once a reservoir site is designated for protection, a state agency or political subdivision of the state may not obtain a fee title or an easement that would significantly prevent the construction of a reservoir. Without such designation, actions by state or local government entities could compromise the viability of these sites for future reservoir development.

Not all regions of Texas have access to the same types of water resources or in similar proportion. For many water users, development of reservoirs is an important means for providing large volumes of renewable, affordable water supply. As evidenced in the 2016 regional water plans and this state water plan, surface water resources, including the development of additional major reservoirs, will continue to play an essential role in Texas' water plans throughout and beyond the current planning horizon.

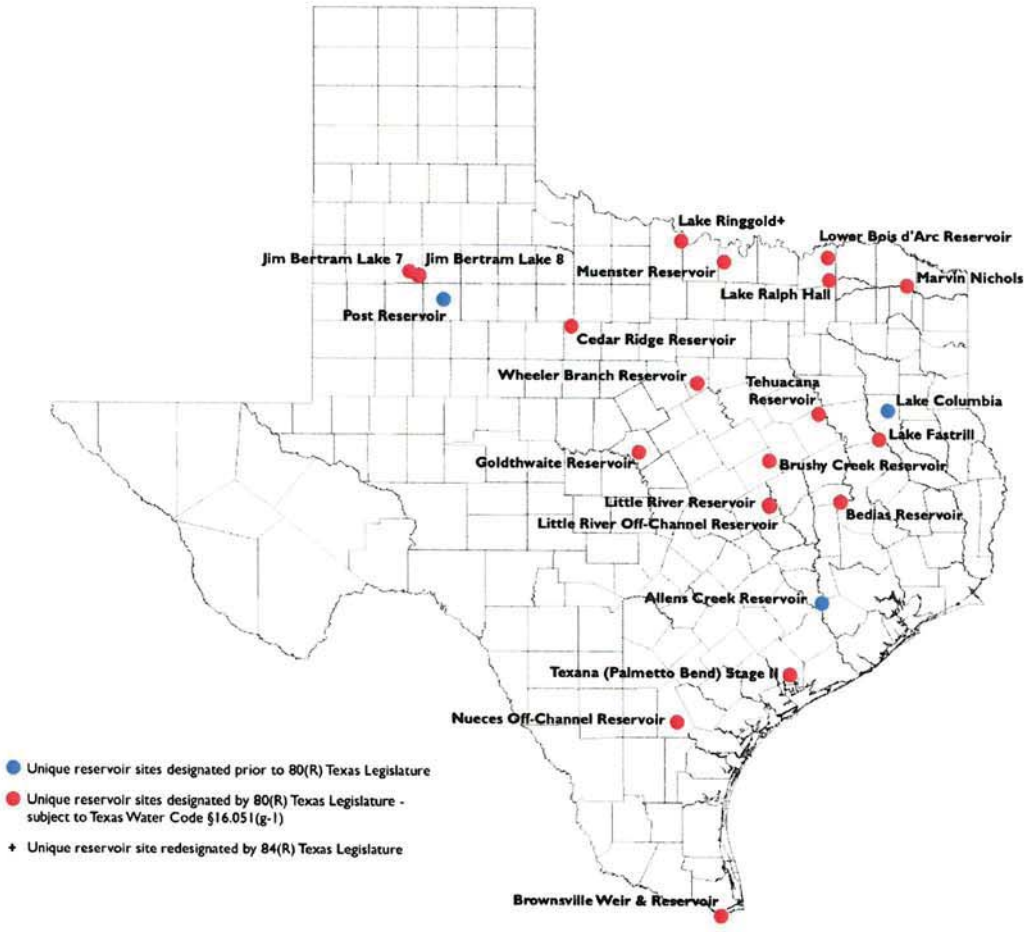
Approximately 45 percent of all recommended water management strategy supplies in this plan are associated with surface water, the majority of which is associated with existing and future reservoirs. Meeting a significant share of Texas' future water needs through the development of the most promising reservoir sites requires a stable, long-term commitment.

Designation of sites of unique value for the construction of reservoirs by the Texas Legislature provides an important measure of protection for these sites for future development. While designation of unique sites by the Texas Legislature does prevent some actions that could threaten the development of a reservoir, it does not guarantee protection of the sites, for example, against federal actions.

Prior to the 80th Texas Legislature, three unique reservoir sites had been previously designated by the legislature; the 76th Texas Legislature designated Allens Creek Reservoir with the passage of Senate Bill 1593, the 77th Texas Legislature designated Post Reservoir in 2001 with House Bill 3096, and the 78th Texas Legislature designated Lake Columbia in 2003 with the passage of Senate Bill 1362 (Figure 2.2).

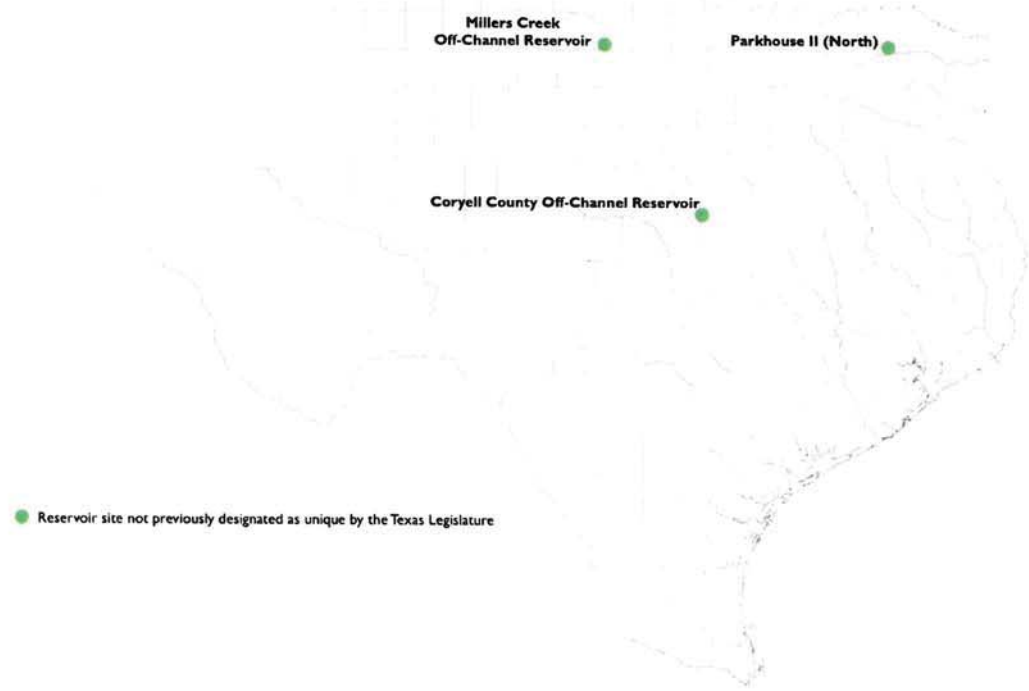
With the passage of Senate Bill 3 in 2007, the 80th Texas Legislature designated an additional 19 reservoir sites (Figure 2.2) with a provision whereby the designations would expire on September 1, 2015, "unless there is an affirmative vote by a proposed project sponsor to make expenditures necessary in order to construct or file applications for permits required in connection with the construction of the reservoir under federal or state law" (Texas Water Code §16.051(g-1)). With the passage of House Bill 1042 in 2015, the 84th Texas Legislature redesignated the Lake Ringgold reservoir site as unique.

Figure 2.2 - Unique reservoir sites previously designated by the Texas Legislature



The legislature should designate for protection the three reservoir sites, Coryell County Off-Channel Reservoir, Millers Creek Off-Channel Reservoir, and Parkhouse II (North) (Figure 2.3). These three reservoir sites were recommended for designation in the 2016 regional water plans and have never been previously designated by the Texas Legislature as having unique value for the construction of reservoirs.

Figure 2.3 - Reservoir sites recommended for designation as unique



Issue 3: Timing of the adoption of desired future conditions with respect to the state and regional water planning cycles

The legislature should require that the next set of desired future conditions be adopted collectively by the district representatives of each groundwater management area by January 5, 2022, and every five years thereafter and require that the regional water plans under development as of that same date be consistent with those adopted desired future conditions in effect on that date.

Summary of the recommendation

Estimates of annual groundwater availability that are based on desired future conditions are one of the fundamental constraints in the development of regional water plans. However, under Texas Water Code § 16.053(e)(2-a), the specific desired future conditions on which each regional water planning cycle is based are currently governed by a combination of an indeterminate state water plan adoption date and an indeterminate desired future conditions adoption date. This creates uncertainty for both representatives of groundwater management areas and planning group members in the form of "moving target" dates. The interrelated processes and requirements causing this situation are as follows:

- Notwithstanding the one-time, one-year extension for the current round of joint planning in groundwater management areas, the current statutory deadline for district representatives in

groundwater management areas *proposing* desired future conditions is September 1, 2010, and every five years thereafter.

- Once desired future conditions are *proposed,* however, the date of actual *adoption* of desired future conditions is not date-certain. Once desired future conditions are *proposed,* it is estimated that it could require up to an additional three to nine months for their *adoption,* but that time frame is not set forth in statute. The TWDB cannot produce and deliver the resulting modeled available groundwater numbers for use by groundwater districts and planning groups until it receives the adopted desired future conditions. The estimated time required for the TWDB to develop and deliver modeled available groundwater numbers ranges from approximately six months to one year following receipt of adopted desired future conditions.
- Statute requires that regional water plans must be consistent with the *adopted* desired future conditions as of the date the Board most recently adopted a state water plan. While the statutory deadline for adoption of the state water plan is January 5, 2002, and every five years thereafter, the specific date that the Board actually adopts each state water plan prior to that deadline is not date-certain.

Replacing the statutory deadline for *proposed* desired future conditions under Texas Water Code §36.108 with a deadline for *adoption* of desired future conditions and tying that adoption deadline to the existing statutory deadline for adoption of the state water plan will increase stakeholder certainty and better synchronize the five-year joint groundwater and regional water planning cycles. This recommendation will also provide agency staff with sufficient time to develop and deliver modeled available groundwater numbers in a timely manner for use by planning groups.

With regard to the next joint groundwater planning and 2022–2026 regional water planning cycles, the recommendation would result in an anticipated schedule as follows:

- January 5, 2022 – deadline for adopted desired future conditions
- January 5, 2022 – deadline for adoption of the 2022 State Water Plan
- January 2023 – TWDB develops and delivers modeled available groundwater numbers
- 2022–2026 regional water plans must be consistent with the desired future conditions in effect as of January 5, 2022