# GBRA Kendall County Water and Wastewater Planning Study Schedule

## Project Meetings:

01/11/2010	Public Kickoff Meeting Boerne Community Center	
03/23/2010	First Advisory Committee Meeting Cibolo Nature Center	1:30 to 3:30 pm
05/27/2010	Second Advisory Committee Meeting Cibolo Nature Center	1:30 to 3:30 pm
07/01/2010	Mid-Point Public Meeting Boerne Community Center	5:30 to 7:30 pm
07/22/2010	Final Advisory Committee Meeting Greater Boerne Chamber of Commerce	1:30 to 3:30 pm
09/14/2010	Final Public Meeting Boerne Community Center	5:30 to 7:30 pm

# Kendall County and City of Fair Oaks Ranch Regional Water and Wastewater Study Advisory Committee

Name	Affiliation	Address	City, TX Zip	email	phone
Mike Mann	City of Boerne	P. O. Box 1677	Boerne, Texas 78006	mmann@ci.boerne.tx.us;	830-249-9511
Ron Emmons	City of Fair Oaks Ranch	7286 Dietz Elkhorn	Fair Oaks Ranch, Texas 78015	remmons@fairoaksranch tx.org	210-698-0900
Melissa Bryant	San Antonio River Authority	100 E. Guenther Street	San Antonio, Texas 78204	mbryant@sara-tx.org	210-302-3611
Micah Voulgaris	Cow Creek Groundwater Conservation District	216 Market Avenue, Suite 105	Boerne, Texas 78006	manager@ccgcd.org;	830-816-2504
Keith Marquart	Kendall County WC&ID	P.O.Box 745	Comfort, Texas 78013	kmkcwcid@hctc.net;	830-995-2227
David Welsch	Guadalupe- Blanco River Authority	933 E. Court	Seguin, TX 78155	dwelsch@gbra.org	830-660-8090
John Kight		33 Tower Road	Boerne, TX 78006-7921	jmkight@beecreek.net	830-230-5373
Fred Bartel		101 Waring Welfare Rd	Boerne, TX 78006-7925		830-537-4452
Rick Tobolka	Kendall County	201 E. San Antonio St., Suite 101	Boerne, TX 78006	richard.tobolka@co.kend all.tx.us	830-331-8250
Grady Jolley	Nunley Jolley Cluck Aelvoet LLP	1580 South Main, Suite 200	Boerne, TX 78006	gjolley@texastriallaw.co m	830-816-3333
Shad Schmidt	Marlin Atlantis	Galleria Tower II 13455 Noel Road, 23 <sup>rd</sup> floor	Dallas, TX 75240	sschmid@marlinatlantis.	210-882-6800
Marty Bryant	Cibolo Creek Nature Center	28614 Whirlaway Circle	Boerne, TX 78015	marty.bryant@yahoo.co m	210-393-4857
Kathleen Ligon	Texas Water	P.O. Box 13231	Austin, TX 78711-3231	Kathleen Ligon	512-463-8294

# Kendall County and City of Fair Oaks Ranch Regional Water and Wastewater Study Advisory Committee

		Development			Kathleen.Ligon@twdb.st	
		Board			ate.tx.us	
Ī	Mike Schultz,	GBRA	116 W. Blanco Rd.	Boerne, TX 78006	mschultz@TheTrustCom	(210) 827-0852
	Director		#100		pany.com	

Mike Mann City of Boerne P. O. Box 1677 Boerne, Texas 78006

Subject:

Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study

Dear Mr. Mann:

The GBRA is pleased to have you serve on the advisory committee for this regional planning study. We would like to hold our first meeting of the committee on March 23, 2010, starting at 1:30 p.m. in the Cibolo Nature Center (map attached). Please let us know by return email if you will be able to attend.

The purpose of this initial meeting will be to obtain your review and comments regarding growth projections and development processes in the study area. Our consultant for this study, AECOM, will provide relevant maps and materials at the meeting and will present the results of their initial data analysis regarding the County's growth. We also hope to begin discussions of the various alternatives for regional water and wastewater facilities to meet the future needs within the study area.

The tentative discussion agenda is provided below.

- Brief summary of study objectives.
- 2. Review of identified growth trends and development processes in the study area.
- Discussion of alternative development scenarios and associated assumptions and selection of the preferred development scenario.
- 4. Review of water supply options, including Region L strategies.
- 5. Review of wastewater system alternatives and discussion of stream water quality issues.

Please do not hesitate to contact me with any questions. We appreciate your participation and look forward to your input on this important study for our region.

Sincerely,

Debbie Magin,

Director of Water Quality Services

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cc. Mike Schultz, GBRA Director AECOM Kathleen Ligon, TWDB

> Main Office: 933 East Court Street ~ Seguin, Texas 78155 830-379-5822 ~ 800-413-4130 ~ 830-379-9718 fax ~ www.gbra.org



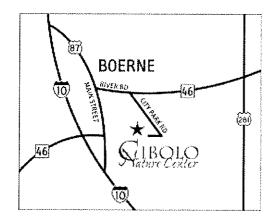
# Directions

From San Antonio, take IH-10 West about 30 miles to the first Boerne exit (#542) - Highway 87 North.

Follow 87 North into downtown Boerne. It becomes Main Street, which is also called Hauptstrasse. Turn right at Highway 46 East, also marked as River Road. The road parallels Cibolo Creek.

Continue on Highway 46 East for about one mile and turn right onto City Park Road. (If you reach the Kendall County Fairgrounds you have gone too far.)

Take City Park Road almost to the end and turn right into the Cibolo Nature Center.



Cibolo Nature Center 140 City Park Road Boerne, TX 78006

Ph.: 830-249-4616

Cibolo Nature Center Hours:

Monday -Friday: 9 am to 5 pm Saturday 9 am to 1 pm Sunday Visitor Center Closed

Trails daily 8 am to dark

#### **AGENDA**

Kendall County and the City of Fair Oaks Ranch
Regional Water and Wastewater Planning Study Kickoff Meeting
Monday, January 11, 2010
Boerne Convention and Community Center
820 Adler Road, Boerne, TX 78006
10:30 a.m.

- I. Welcome and Introductions GBRA
- II. Project Overview AECOM
  - A. Project Objective
  - B. Project Organization
  - C. Scope of Work Major Tasks
  - D. Information Needs
  - E. Population Projections
  - F. Project Timeline
  - G. Project Milestones
- III. Q&A
- IV. Public Comments limit 3 minutes per person

#### KENDALL COUNTY & CITY OF FAIR OAKS RANCH WATER & WASTEWATER PLANNING STUDY PROJECT KICK-OFF MEETING

# BOERNE CONVENTION & COMMUNITY CENTER JANUARY 11, 2010

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David Parthill AECOM
Matt Moses "
"Welissa Bryant SARA mbryant@ sara-tx.org
Charles LOREA SARA Clorea@sara-tx.org
BRYAN WOODS COME ENGWEREING INC. \$30-755-8434
BAYAN WOODS @ CUYLEENGINEELING. COM, 9120 Old DIETZ ElleHOLN RD. FAIR DAKS, 78015
Micah Voulgaris CCGCD manager accept org
JASON Nelson AELDM
Duayne Rathburn SAWS-P.O. Box 2449-5.A18298 drathburn@
Mike Mann Boerne mmann@ci.boerne.tx.us
From EAS 1. CoBorne - See below
Jang Melled GBRA dwelschogbra.org
Tony Bennett AECOM
Bill Thanan AECOM
Reem ZOUN AECOM
Ron Emmons Fair Oaks Ranch Public Works Director
Kathlen lican TWB Kothleen Ligar Cotwood state true
Bill West GBRA General Manager bwestegbraer
Lynn Bunguardner TCEQ Regar 13 210 403 4050-16umquar
Gan Gussin TER Region 13 Hindsay@tceg. state.tx. u
TOE KING AECOM
michael Schultz, GBRA Sirector-mschultz@thetrust
company.com
Ryan Bass - Watershood Planning Coordinator - City of Boerne
P.O. Box 1677 - 402 E. Blanco - Boerne Tx. 780060
830-248-1538= work rbass@ci.boerne.tx.us
" 1326 = fax

#### AGENDA

Kendall County and the City of Fair Oaks Ranch
Regional Water and Wastewater Planning Study Kickoff Meeting
Monday, January 11, 2010
Boerne Convention and Community Center
820 Adler Road, Boerne, TX 78006
10:30 a.m.

#### I. Welcome and Introductions – GBRA

Bill West from GBRA started the meeting by welcoming everyone and requested Michael Scholz to provide introductory comments.

Michael Scholz read from a text containing remarks about development of Boerne. Michael spoke about the growth and development in the county and its need for water resources and wastewater planning. He wished the project well and turned the audience over to Bill Thaman from AECOM.

#### II. Project Overview – AECOM

- A. Project Objective
- B. Project Organization
- C. Scope of Work Major Tasks
- D. Information Needs
- E. Population Projections
- F. Project Timeline
- G. Project Milestones

Bill Thaman (Project Manager, AECOM) presented on the project objective, overview, needs, timeline and milestone. Tony Bennett talked about Water Quality.

#### III. Q&A and Public Comments

Comment: Mike Mann, City of Boerne: They are located in the San Antonio River Basin. Looking forward to cooperate on this project.

Q: Melissa Bryant, SARA: Is there a specific format or deadline which the required information should be submitted in?

A: Bill T: Information received by the end of the month will be appreciated. Water utility survey to be sent out within a week.

Q: Bill West: How will the stakeholders communicate with each other?

A: Bill T. A stakeholder committee will be formed with one person from each stakeholder. Debbie: GBRA will contact prospective stakeholders.

Q: Bill West: How do include someone from Comfort? Perhaps we can have someone from the Real State Council.

A: Micah: Comfort does not have any specific group for Real State Council. Debbie will contact Keith Marquah at WCID#1 to make sure he receives the information and possibly join the stakeholder committee.

Q: Michael Scholz: What do we know about Diamond K?

A: Micah: Located off Sisterdale Road. They have 10 to 50 acre lots. Development has been slow in general. Cow Creek GCDs operation has been slow lately, they have been receiving approximately 3 permit applications/ month.

Comment: Mike Mann, City of Boerne: They have an ordinance including quantity of water but not quality.

Q: What was the scope of the Watershed Protection Plan?

A: (Ryan Bass): The current steering committee has 8 to 10 people. They are holding a public meeting soon.

## Advisory Committee Meeting- March 23, 2010

Guadalupe Blanco River Authority Regional Water/Wastewater Planning for Kendall County and Fair Oaks Ranch, Texas

# Meeting Agenda

#### **Topic**

1:30 p.m.	Welcome and introductions.
1:40	Meeting objectives and protocols.
1:50	Project background and summary of planning study objectives.
2:00	Population projections - selection of preferred projection for the study area.
2:20	Geographic distribution of current population and anticipated future growth.
2:50	Water supply and demand projections, and Region L strategies.
3:15	Wastewater systems and future alternatives.
3:25	Selection of next meeting date and other business.
3:30 p.m.	Adjourn.

#### **Meeting Notes**

Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study First Advisory Group Meeting Monday, March 23, 2010 Cibolo Nature Center 1:30 p.m.

#### Welcome and Introductions – GBRA

Michael Scholz from GBRA started the meeting by welcoming everyone and then turned the meeting over to David Parkhill from AECOM.

#### II. Project Overview – AECOM

David P. asked everyone to introduce themselves and briefly discussed ground rules. David P. then proceeded with a presentation on project overview, and various growth scenarios which AECOM had developed for this meeting. Water demand, supply options, and wastewater options were discussed briefly but were not covered in detail at this meeting.

#### III. Key Meeting Outcomes:

Key discussions from this meeting was on growth scenarios which are listed below:

- Identified preferred population projection
- Four developments zones instead of three new development zone for Western Kendall County including Comfort
- Modified development zones
- Identification of areas of low probable growth
- Identification of some conservation easements
- Discussion about growth rates in different zones Northern Kendall County and Western Kendall County grows at a slower pace than the other areas.

# Advisory Committee Meeting- May 27, 2010

Guadalupe Blanco River Authority Regional Water/Wastewater Planning for Kendall County and Fair Oaks Ranch, Texas

# Meeting Agenda

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<u>Topic</u>	
1:30 p.m.	<ul> <li>Welcome and introductions.</li> <li>Welcome and introductions (5 min)</li> <li>Meeting objectives and protocols (5 min)</li> </ul>
1.40	<ul> <li>Growth Scenario.</li> <li>Findings from first advisory group meeting (5 min).</li> <li>Development zones (5 min).</li> <li>Geographic distribution of population and anticipated future growth (10 min).</li> </ul>
2:00	<ul> <li>Water Supply Planning.</li> <li>Water demand and water use factors (10 min).</li> <li>Available water supply and shortage (10 min).</li> <li>Water supply strategy options (10 min).</li> </ul>
2:30	<ul> <li>Wastewater Planning.</li> <li>Wastewater loadings, wastewater systems –existing conditions (10 min).</li> <li>Wastewater collection systems alternatives (10 min).</li> <li>Wastewater treatment systems alternatives (10 min).</li> </ul>
3:00	Discussion of future work.  • Water Quality.
3.15	Selection of next meeting date and other business.
3:30 p.m.	Adjourn.

# KENDALL COUNTY ADVISORY COMMITTEE MEETING CIBOLO NATURE CENTER 5/27/2010

Melissa Bryant
Mike Mann
Frad Baskel
Cali Doholl
David Parkling
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Reen Zous
Tony Bennett
Mikah Voulgaris
Lime Burke
Kyn Boss
Kyntoss Ligon TWDB
Don Emmons
Dellumagin
JASON NALLIN
David Welsch
BinSedlacek

#### Meeting Notes

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study Second Advisory Group Meeting

Cibolo Nature Center

Thursday May 27, 2010 1:30 p.m.

#### Welcome and Introductions – GBRA

David Welsch from GBRA started the meeting by welcoming and thanking everyone for their time and useful feedback. David W. then turned the audience over to David Parkhill from AECOM.

#### II. Project Overview – AECOM

David P. provided updates on the project status, discussed revised development zones and population distribution based on outcomes from first advisory group meeting, and presented the estimated water demand, water supply and strategy options, and existing wastewater facilities in Kendall County.

#### III. Key Meeting Notes:

Key items of discussion and notes from this meeting are listed below: Water Supply Options:

- 1. The water supply availability of the Trinity Aquifer will be re-allocated based on total surface area in each development zone.
- 2. Water of Canyon Lake may be made available to Kendall County if some needs in lower basin are met by other sources/ water supply project.
- 3. David Welsch: If San Marcos is supplied by other sources, supply from Canyon can be available to Kendall County. Water from Gonzales may be available within the next 10 years.
- 4. Education, brush management, rain-water harvesting are mentioned as water supply strategies.

#### Wastewater Planning:

- 5. Debbie Magin inquired about the percentage of aerobic versus conventional OSSFs in Kendall County. Micah V. mentioned that people only use aerobic if they need to. Rick T. responded approximately 20% of the systems are aerobic. Conventional systems cost half as much compared to the cost of aerobic.
- Debbie M. mentioned impact of the aerobic would be significantly more compared to septic tank/drainfields if they were to fail and inquired about the maintenance of OSSF systems

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- 7. Rick T. mentioned 98% are maintained through maintenance contracts. Currently homeowners can maintain without training after two years. However, they are looking into changing regulations where home owners will be required to receive training and will need to provide quarterly reports.
- 8. Debbie M. asked who will provide the training. Rick T. responded training is generally provided by manufactures.
- 9. Debbie mentioned GBRA provides an 8 hour training course and they would like to provide it for Kendall County area. Rick T. indicated that this will be beneficial for homeowners.

#### **AGENDA**

Kendall County and the City of Fair Oaks Ranch
Regional Water and Wastewater Planning Study Midpoint Meeting
Thursday, July 01, 2010
Boerne Convention and Community Center
820 Adler Road, Boerne, TX 78006
5:30 p.m.

- I. Welcome and Introductions GBRA
- II. Project Update AECOM
  - A. Project Overview
  - B. Growth Scenario
  - C. Water Supply Planning
  - D. Wastewater Planning
  - E. Water Quality
  - F. Project Milestones
- III. Public Comments limit 3 minutes per person
- IV. Q&A

#### **Meeting Notes**

Kendall County and the City of Fair Oaks Ranch
Regional Water and Wastewater Planning Study Midpoint Public Meeting
Thursday, July 01, 2010
Boerne Convention and Community Center
820 Adler Road, Boerne, TX 78006
5:30 p.m.

#### Attendees

Fred Bartell, John Kight, Mark Anderson, Ron Emmons, David Messey (TWDB), Grady Jolley, Mike Shultz (GBRA), Debbie Magin (GBRA), Liz Sedlacek (GBRA), Jason Nelson (AECOM), Reem Zoun (AECOM), David Parkhill (AECOM).

#### II. Project Update – AECOM

- A. Project Overview
- B. Growth Scenario
- C. Water Supply Planning
- D. Wastewater Planning
- E. Water Quality
- F. Project Milestones

David Parkhill (AECOM) welcomed everyone and presented a PowerPoint presentation on the project status and interim results.

#### III. Q&A and Public Comments

After discussion of population:

Comment: Grady Jolley: City of Boerne annexation.

Comment: John Kight: Boerne will not have enough water in case growth is more than projected.

Response: David P requested to hold his thought and mentioned that this will be discussed later.

Comment: John Kight: They developed GPCD numbers in the Cow Creek GCD from scratch and there were not a lot of data available for it.

#### After shortage slide:

Comment: John Kight: Water in WCID #1 has radium problem. Even if water will be available, it will not be potable.

Response: David P.: A company capable of removing radium, namely WRS, is working with WCID#1.

Comment: Fred B. asked David P. about the feasibility of brackish desalination.

Response: David P.: It is a promising but currently undesirable alternative. Disposal of saline brine is challenging.

Comment: Fred mentioned re-circulating Guadalupe River Water project.

Response: David mentioned that the best new source of water in the County may be GBRA.

Comment: Jason N. What will be the effect of The Edwards Aquifer Recovery Implementation Program (EARIP) process, perhaps GBRA will have comment on this? Response: Mike Shultz (GBRA): GBRA will keep up to date with the development of EARIP process.

Comment: John K. suggested seawater desalination since that will be new water.

Comment: John K. mentioned exploration water as water need that was possibly not accounted for.

Comment: John K. acknowledged limitation on information about water availability in the County until GMA9 comes up with DFC and resulting MAG. He also mentioned SAWS water may be coming to Kendall County.

David P. thanked everyone for attending the meeting and providing useful feedback.

Meeting adjourned at 6:30 p.m.

#### Advisory Committee Meeting Agenda

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study

# Kendall County Economic Development Corporation Office 1221 S. Main St. in Boerne.

Thursday July 22, 2010 1:30 p.m.

# 1:30 p.m. Welcome and introductions. 1:35 Meeting objectives. 1:40 Summary of outcomes from latest advisory group and public meetings: Revised availability Water supply strategy options 2:00 Costing for wastewater treatment systems alternatives. 2:20 Water quality modeling – Guadalupe River.

Water quality modeling – Cibolo Creek.

Project timeline.

Adjourn.

Topic

2:40

3:00

3:10 p.m.

# Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study Advisory Group Meeting Kendall County Economic Development Corporation Office 1221 S. Main St. in Boerne. Thursday July 22, 2010 1:30 p.m.

Sign In Sheet

Name	Entity	Email Address
1. John Kight	CCGCD	IMKight@BeeCreck.net
2. her Bartie		
3. Dellew Mac.	GBRA	dmagin@gbra.org
4. Katulen Ligar	GBRA	J - J
5. David Parthill	ARCOM	david parkhille accour con
6. Tony Bonnett	AECOM	
7. Reem Zon	AF-COM	Reem. Tour @ aecan. a
8. Grady B Tolle	y Nunleylaw	firm gjolley@nunbyfim.ca.
9. Melissa Bryan	/	
10. Ros Emmons	Fare DakeRon	, , ,
11. Lin Sedlacek	GBRA	Isedlacek Ogbra.org
12. Mike Monn	City of Boo	erre mkmanne ci. boerne.tx.us
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#### Meeting Notes

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study Final Advisory Group Meeting

#### Kendall County Economic Development Corporation Office 1221 S. Main St. in Boerne

Thursday July 22, 2010 1:30 p.m.

#### Welcome and Introductions – GBRA

Debbie Magin from GBRA started the meeting by welcoming and thanking everyone for their time and useful feedback. Debbie M. turned the meeting over to David Parkhill from AECOM.

#### II. Project Overview – AECOM

David P. provided update on the project status and briefly discussed supply and strategy options. There was discussion on the public meeting on July 01 2010. David then turned the presentation over to Tony Bennett. Tony made a presentation on costing of wastewater options and water quality modeling.

#### III. Key Meeting Outcomes:

Key discussion items outcomes from this meeting are listed below: Wastewater Options:

- 1. Costing of pipeline will be added to Boerne/ Fair Oaks Ranch wastewater treatment plant option.
- 2. Mike Mann will send to AECOM the engineer's estimate for the Boerne 2<sup>nd</sup> wastewater treatment plant.

#### Water Quality:

- 3. Average annual rainfall in Kendall County: 32 inches/yr and 35 inches/yr were recommended at the meeting instead of 40 inches/yr used by AECOM for computing runoff for non-point pollutant loadings.
- 4. Increases in point and non-point pollutant loadings will be presented as a percentage of total loadings.
- 5. Preventative measures to reduce non-point pollution will be mentioned in the report.

#### **AGENDA**

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study Final Public Meeting

Tuesday, September 14, 2010 Boerne Convention and Community Center 820 Adler Road, Boerne, TX 78006 5:30 p.m.

- I. Welcome and Introductions GBRA
- II. Project Findings AECOM
  - A. Project Overview
  - B. Key Findings
  - C. Key Conclusions and Recommendations
  - D. Project Milestones
- III. Public Comments limit 3 minutes per person
- IV. Q&A

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study

#### **Final Public Meeting**

Boerne Convention and Community Center 820 Adler Road, Boerne, TX 78006 Tuesday, September 14, 2010 5:30 p.m.

#### Sign In Sheet

Name       Entity   Email Address
1. DAVID WUSCh GBRA dwelschoop bray
2. David Parkhill Attoon david parkhill a gran con
3. Rig Sedfacek GBRA Isedfacek@gbra.og
3. Riy Sedfacek GBRA Isedfacek @gbra.org 4. Kpy EASS City of Brane 1 hiss@ci. bonne-tr.us.
5. Tony Denwett AECOM Authory, benutte AECOM, com
6. DUB SMOTHERS NA dubsmothers@newhopemountain.com
Chery LANDMAN Conflaw Oal Road MAYOR @ PAIRIAKS RAUCHTY.
8. Tud Darloc
o. John C. Hight CCGCD SMKIGHT@ Boo Crack-Not
10. Pon Emmons Fair Oaks Ranch remmons (a faireak ranch trong
11 Grady Tolley The Number Firm gjolleg warmley firm.
12. Mark huma The Number of jolleg @ aunley firm.
13. Gethlegn liger Tupis
14. Stare Clouse SAWS Sclouse @SAWS.org
15. Michael Schultze GBRA
Reen Zoun AECOM
Debbie Magin GBRA

Na	ime		Entity	Email Address
16	Jason	Nelson	AECOM	
17	Jaime	Bunke	AECOM	
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#### Meeting Notes

#### Kendall County and the City of Fair Oaks Ranch Regional Water and Wastewater Planning Study Final Public Meeting

Tuesday, September 14, 2010 Boerne Convention and Community Center 820 Adler Road, Boerne, TX 78006 5:30 p.m.

#### Attendees

Sign-in sheet attached.

#### II. Project Update – AECOM

- A. Project Overview
- B. Key Findings
- C. Key Conclusions and Recommendations
- D. Project Milestones

David Parkhill (AECOM) welcomed everyone and presented a PowerPoint presentation on the conclusions and recommendations of the project.

#### III. Q&A and Public Comments

Question: Steve Clouse: What is the timing for completion of the report?

Response: November 1, 2010

Question: Mark Mason: For the water supply sources, is Canyon Reservoir reached the maximum amount?

Response (David Welsch, GBRA): The raw water reservations have currently reached the maximum amount, but some contracts will expire in the future with that water potentially being available to others; and additional water may become available if new water supply sources are found to provide water to other current Canyon Reservoir customers.

Question: Mark Mason: Is the Western Canyon Project entirely funded by subscribers of that water? Future projects similar funding?

Response (David W.): It is funded by revenue bonds that are then paid for by the water customers. Yes, future projects would likely have similar funding mechanisms.

Question: Dub Smothers: What groundwater studies were looked at? Dr. Hammond with the UTSA Center for Water Research has done numerous related studies. Were those looked at? Rima Petrossian at TWDB has done numerous studies as well. Do you know her?

Response: A bibliography of the data collected is provided in the report. The advisory group provided additional information on local studies that were helpful. The TWDB groundwater studies, including Rima's, were reviewed as well.

Question: Steve Clouse: Is conservation included in the water shortage? How is the shortage determined – drought of record?

Response (David P.): Small amounts of conservation are included in the gallon per capita per day (GPCD) numbers used to calculate the water demands. These include plumbing code savings and similar items that do not require customer usage changes. The shortage is determined on the demand side by using GPCD numbers determined from water use during a dry year, but not necessarily a drought year.

Question: Dub Smothers: You have mentioned a number of things that the County should do or implement. How do you plan to ensure the County does these things?

Response (David P.): The items mentioned are suggestions, not requirements, so there is no way to ensure they happen. The hope is that this study has caused officials in area to start talking to each other about water and wastewater and to start thinking about taking advantage of opportunities that may come along in the future. A seminar on OSSF maintenance for homeowners has already been organized by GBRA, Kendall County, and others, and has already filled up. There will likely be another one next spring or summer since there is a waiting list of approximately 50 people.

Mike Schultz with GBRA thanked everyone for attending the meeting and providing useful feedback.

Meeting adjourned at 6:30 p.m.

**AECOM**400 West 15th Street, Suite 500, Austin, Texas 78701 T 512.472.4519 F 512.472.7519 www.aecom.com

#### **Transmittal**

Date 06/09/2010

To Fred Bartel, John Kight

From David Parkhill, Jaime Burke

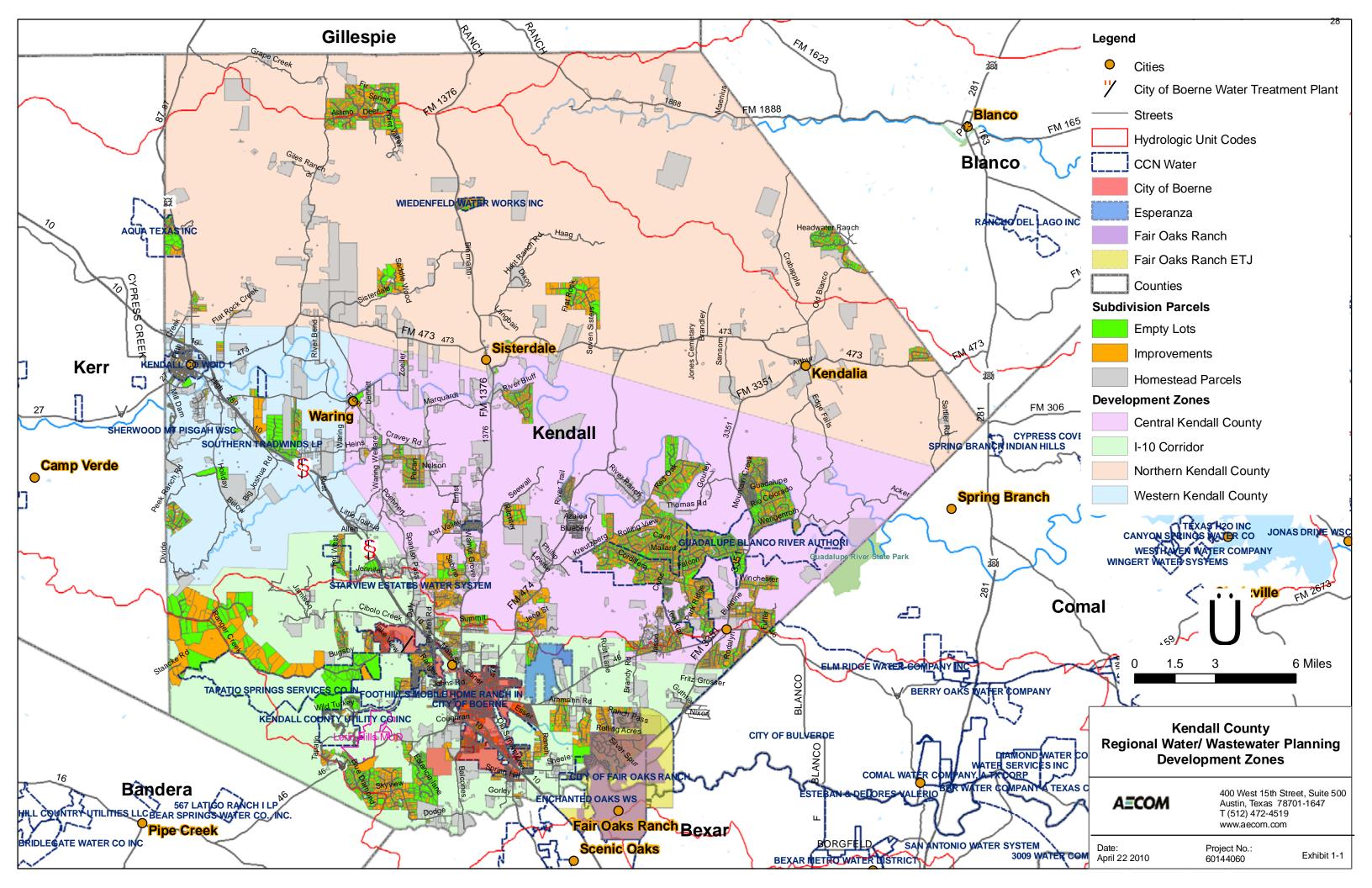
Copy Debbie Magin, David Welsch, Micah Voulgaris, Advisory Group members

Project reference Kendall County Water and Wastewater Planning Project

Transmitted via Mail, email

As per our discussion at the advisory committee meeting on May 27<sup>th</sup>, the availability of the Trinity Aquifer has been re-allocated based on total surface area in each development zone. Attached is a map of the development zones and a document showing the revised supply/shortage forecast in each zone using the 6,336 ac-ft/yr total availability allocated based on surface area. This revision creates predicted shortages for the zones with higher growth and creates a large surplus in the Northern zone where growth is limited. If the higher availability of 9,189 ac-ft/yr is used with this same approach, the shortages are eliminated for all areas except the Western Kendall County zone.

This information will be presented at the upcoming June 17<sup>th</sup> public meeting. Should you have any questions, please feel free to contact David Parkhill at 512 457 7774 or Jaime Burke at 512 457 7798. We will also be happy to hold a conference call and discuss any comments/ questions if needed.



Using **6,336** ac-ft/yr as the availability of the Trinity Aquifer for the County, the total availability was divided into an available amount per Zone, based on the proportional areal size of each Zone. The I-10 Corridor Zone was broken down further by area into the Boerne Service Area, the City of Fair Oaks Ranch, and the Non-City portion.

Northern Kendall County Zone	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	786	814	914	999
Water Supplies (Ac-Ft/Yr)				
Edwards-Trinity Aquifer	77	77	77	77
Trinity Aquifer*	2,851	2,851	2,851	2,851
Miscellaneous Surface Water	95	95	95	95
Total Water Supplies (Ac-Ft/Yr)	3,023	3,023	3,023	3,023
Water Shortage (Ac-Ft/Yr)	0	0	0	0
Water Surplus (Ac-Ft/Yr)	2,237	2,209	2,109	2,024

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr).

Western Kendall County Zone	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	622	710	812	930
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	570	570	570	570
Other Surface Water	30	30	30	30
Total Water Supplies (Ac-Ft/Yr)	600	600	600	600
Water Shortage (Ac-Ft/Yr)	-22	-110	-212	-330
Water Surplus (Ac-Ft/Yr)	0	0	0	0

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr).

Central Kendall County Zone	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	1,829	2,632	3,159	4,025
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	1,635	1,635	1,635	1,635
Canyon Lake Reservoir**	230	800	1,225	1,650
Other Surface Water	77	77	77	77
Total Water Supplies (Ac-Ft/Yr)	1,942	2,512	2,937	3,362
Water Shortage (Ac-Ft/Yr)	0	-120	-222	-663
Water Surplus (Ac-Ft/Yr)	113	0	0	0

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr).

<sup>\*\*</sup>Amount shown is primarily the anticipated annual commitment total for Cordillera Ranch.

City of Boerne Service Area	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	2,100	3,129	4,588	4,802
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	307	307	307	307
Canyon Lake Reservoir**	975	1,989	3,448	3,611
Boerne City Lake	833	833	833	833
Total Water Supplies (Ac-Ft/Yr)	2,115	3,129	4,588	4,751
Water Shortage (Ac-Ft/Yr)	0	0	0	-51
Water Surplus (Ac-Ft/Yr)	15	0	0	0

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr).

<sup>\*\*</sup>Amount shown is the anticipated annual commitment for the City of Boerne service area (including Esperanza).

City of Fair Oaks Ranch	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	1,505	1,809	2,111	2,354
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	543	543	543	543
Canyon Lake Reservoir**	962	1,266	1,568	1,850
Total Water Supplies (Ac-Ft/Yr)	1,505	1,809	2,111	2,393
Water Shortage (Ac-Ft/Yr)	0	0	0	0
Water Surplus (Ac-Ft/Yr)	0	0	0	39

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr) plus 500 ac-ft/yr from the wells in Bexar and Comal Counties.

<sup>\*\*</sup>Amount shown is anticipated annual commitment for the City of Fair Oaks Ranch.

Non-City Portion of I-10 Corridor Zone	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	1,283	1,801	2,173	2,820
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	930	930	930	930
Canyon Lake Reservoir**	425	835	1,300	1,500
Other Surface Water	40	40	40	40
Total Water Supplies (Ac-Ft/Yr)	1,395	1,805	2,270	2,470
Water Shortage (Ac-Ft/Yr)	0	0	0	-350
Water Surplus (Ac-Ft/Yr)	112	4	97	0

<sup>\*</sup> The amount shown as available from the Trinity Aquifer is the proportional amount by area of the suggested minimum total available aquifer volume for Kendall County (6,336 ac-ft/yr).

<sup>\*\*</sup>Amount shown is the anticipated annual commitment is for Lerin Hills and Kendall County Utility Company/Tapatio.

Sum of Boerne Service Area, Fair Oaks Ranch, and Non-City portions (above)

I-10 Corridor Zone (AII)	2010	2020	2030	2040
Water Demands (Ac-Ft/Yr)	4,888	6,739	8,872	9,976
Water Supplies (Ac-Ft/Yr)				
Trinity Aquifer*	1,780	1,780	1,780	1,780
Canyon Lake Reservoir**	2,362	4,090	6,316	6,961
Boerne City Lake	833	833	833	833
Other Surface Water	40	40	40	40
Total Water Supplies (Ac-Ft/Yr)	5,015	6,743	8,969	9,614
Water Shortage (Ac-Ft/Yr)	0	0	0	-362
Water Surplus (Ac-Ft/Yr)	127	4	97	0

<sup>\*</sup> Trinity Aquifer amount equals 1,280 ac-ft available by area in Kendall County plus an assumed 500 ac-ft from Fair Oaks Ranch wells outside of Kendall County. (Entire Fair Oaks Ranch water demand included)

<sup>\*\*</sup>Amount shown is the anticipated annual commitment for the Boerne Service Area, the City of Fair Oaks Ranch, Lerin Hills, and Kendall County Utility Company/Tapatio.