RIMROCK CONSULTING COMPANY
BILLING INVOICE

PO Box 163643 Austin, Texas 78716

541041
6.13204

INVOICE NUMBER : 1240
INVOICE DATE : 01-Aug-08

PO #41693

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

AUG 11 2008

EMPLOYEE NAME	EMP #	WEEK ENDING	CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	31-Jul-08	J	185	1.25	$145.00	$181.25		$0.00		$0.00		$0.00		$0.00		
Laguna-related work																	$181.25

DATE SENT 8-12
TO Angie Flores / Rosa L.
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602 FAX 4070

50

IMRO CONSULTING COMPANY PO Box 163643 Austin, Texas 78716
ILLING INVOICE

INVOICE NUMBER : 1252
INVOICE DATE : 02-Sep-08

PO #41693

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

G.13317

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING	CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
ckey Fishbeck	1	17-Aug-08	J 185	2.50	$145.00	$362.50	19.2	$9.70		$0.00		$0.00		$0.00			
gation-related work.																	$372.20

SEP 0 8 2008

DATE SENT 9.8
TO Angie Flores / Rosa L.
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602 FAX 4070

RIDGROOK CONSULTING COMPANY PO Box 163843 Austin, Texas 78716
BILLING INVOICE

RECEIVED
APR 07 2009

PO #41693

INVOICE NUMBER: 1304
INVOICE DATE: 01-Apr-09

PROJECT NUMBER: 0185
PROJECT NAME: WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

5769 25
G.14125

CLIENT CONTACT: MS. ANGIE FLORES
TITLE: RATES MANAGER
CLIENT NAME: LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS: PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING		CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	22-Mar-09	J	185	0.75	$250.00	$187.50		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	28-Mar-09	J	185	10.00	$250.00	$2,500.00	14.0	$8.19		$0.00		$0.00		$0.00			
TOTALS				*185*	*10.75*		*$2,687.50*	*14.0*	*$8.19*	*0*	*$0.00*	*0*	*$0.00*	*0*	*$0.00*	*$0.00*	*$0.00*	*$2,695.69*

Longterm-related work

DATE SENT 4.8
TO Angie Flores/Ross
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602 FAX 4070

agie 7.
ss L

RIMROCK CONSULTING COMPANY   PO Box 163643   Austin, Texas 78716
BILLING INVOICE

C81481
6.14248

PO #41693

INVOICE NUMBER : 1309
INVOICE DATE : 03-May-09

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP	WEEK		CHARGE	LABOR			MILEAGE		COPIES		TRANSPARENCIES		FAX		POSTAGE	OTHER	TOTALS
	#	ENDING		#	Hrs	Rate	Cost	Miles	Cost	#	Cost	#	Cost	Pgs	Cost	$	$	
Mickey Fishbeck	1	19-Apr-09	J	185	0.75	$250.00	$187.50		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	26-Apr-09	J	185	1.25	$250.00	$312.50		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	30-Apr-09	J	185	9.00	$250.00	$2,250.00	14.0	$8.19		$0.00		$0.00		$0.00			
TOTALS				*185*	*11.00*		*$2,750.00*	*14.0*	*$8.19*	*0*	*$0.00*	*0*	*$0.00*	*0*	*$0.00*	*$0.00*	*$0.00*	*$2,758.19*

Langmon-related work.

RECEIVED
MAY 06 2009

DATE SENT 5-8
TO Angie Flores
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602   FAX 4070

RIMROCK CONSULTING COMPANY PO Box 163643 Austin, Texas 78716
BILLING INVOICE

5882.78
6.14406

INVOICE NUMBER: 1314
INVOICE DATE: 01-Jun-09

PO #41693

RECEIVED
JUN 11 2009

PROJECT NUMBER: 0185
PROJECT NAME: WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

CLIENT CONTACT: MS. ANGIE FLORES
TITLE: RATES MANAGER
CLIENT NAME: LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS: PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING		CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	10-May-09	J	185	19.25	$250.00	$4,812.50		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	17-May-09	J	185	14.50	$250.00	$3,625.00		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	24-May-09	J	185	24.50	$250.00	$6,125.00		$0.00		$0.00		$0.00		$0.00			
																	$14.28	
TOTALS				185	58.25		$14,562.50	0.0	$0.00	0	$0.00	0	$0.00	0	$0.00	$0.00	$14.28	$14,576.78

Litigation-related work

DATE SENT 6-18
TO Angie Flores
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602 FAX 4070

3411669170

RIMROCK CONSULTING COMPANY PO Box 163643 Austin, Texas 78716
BILLING INVOICE

D40402
G144468

INVOICE NUMBER : 1319
INVOICE DATE : 01-Jul-09

PO #41693

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING		CHARGE $	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	28-Jun-09	J	185e	16.75	$250.00	$4,187.50	23.0	$13.46		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	21-Jun-09	J	185e	9.25	$250.00	$2,312.50		$0.00		$0.00		$0.00		$0.00		$62.82	
Mickey Fishbeck	1	14-Jun-09	J	185e	2.75	$250.00	$687.50	12.0	$7.02		$0.00		$0.00		$0.00			
TOTALS				185e	28.75		$7,187.50	35.0	$20.48	0	$0.00	0	$0.00	0	$0.00	$0.00	$62.82	$7,268.80

Lingware-related work.

RECEIVED
JUL 07 2009

RECEIVED
JUL 07 2009

DATE SENT 7-7
TO Angie Flores
APPROVAL & WORK ORDER
NEEDED ASAF
JACQUE x7302 FAX 4070

RAMROCK CONSULTING COMPANY
BILLING INVOICE

PO Box 163643 Austin, Texas 78716

604122
G-14853

INVOICE NUMBER : 1341
INVOICE DATE : 01-Oct-09

PO #41693

RECEIVED
OCT 07 2009

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING		CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	12-Jul-09	J	185e	0.50	$250.00	$125.00		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	27-Sep-09	J	185e	0.25	$250.00	$62.50		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	30-Sep-09	J	185e	1.50	$250.00	$375.00	17.7	$10.35		$0.00		$0.00		$0.00			
TOTALS				185e	2.25		$562.50	17.7	$10.35	0	$0.00	0	$0.00	0	$0.00	$0.00	$0.00	$572.85
Litigation-related work																		

DATE SENT 10-9
TO Angie Flores
APPROVAL & WORK ORDER
NEEDED ASAP
JACQUE x7602 FAX 4070

96

RIMROCK CONSULTING COMPANY PO Box 163643 Austin, Texas 78716
BILLING INVOICE

INVOICE NUMBER : 1363
INVOICE DATE : 04-Jan-10

PO #41693

PROJECT NUMBER : 0185
PROJECT NAME : WEST TRAVIS COUNTY WATER SYSTEM WATER AND WASTEWATER COST OF SERVICE STUDY

RECEIVED JAN 11 2010

6146688 6.15217

CLIENT CONTACT : MS. ANGIE FLORES
TITLE : RATES MANAGER
CLIENT NAME : LOWER COLORADO RIVER AUTHORITY
CLIENT ADDRESS : PO BOX 220
AUSTIN, TEXAS 78767

EMPLOYEE NAME	EMP #	WEEK ENDING	CHARGE #	LABOR Hrs	LABOR Rate	LABOR Cost	MILEAGE Miles	MILEAGE Cost	COPIES #	COPIES Cost	TRANSPARENCIES #	TRANSPARENCIES Cost	FAX Pgs	FAX Cost	POSTAGE $	OTHER $	TOTALS
Mickey Fishbeck	1	13-Dec-09 J	185e	4.50	$250.00	$1,125.00	12.0	$7.02		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	27-Dec-09 J	185e	0.50	$250.00	$125.00		$0.00		$0.00		$0.00		$0.00			
Mickey Fishbeck	1	31-Dec-09 J	185e	0.25	$250.00	$62.50		$0.00		$0.00		$0.00		$0.00			
TOTALS			*185e*	*5.25*		*$1,312.50*	*12.0*	*$7.02*	*0*	*$0.00*	*0*	*$0.00*	*0*	*$0.00*	*$0.00*	*$0.00*	*$1,319.52*

Lagoon-related work

DATE SENT 1-11
TO Angie Flores
APPROVAL & WORK ORDER NEEDED ASAP
JACQUE x7502 FAX 4070

57

Jacque King

From: Angie Flores
Sent: Monday, January 11, 2010 1:12 PM
To: Jacque King
Subject: RE: RIMROCK 1363 $1,319.52

Approved. WO #1304391

Angie Flores

From: Jacque King
Sent: Monday, January 11, 2010 12:25 PM
To: Angie Flores
Subject: RIMROCK 1363 $1,319.52

Good afternoon,

The attached invoice(s) need approval. If you have authority to approve invoices for payment, respond with your approval by email, include PO # (if applicable), account code and work order #. If you do not have the authority to approve invoices, forward this to the appropriate individual in your work group who has signature authority.
If there are issues with the invoice, please send a reply.

IF THIS NEEDS TO BE FORWARDED TO OTHERS, PLEASE DO SO.

Jacque King, CTSPT
Account Specialist
Lower Colorado River Authority

Kennedy Reporting Service, Inc.
1801 Lavaca, Suite 115
Austin, TX 78701

Invoice

DATE	INVOICE NO.
10/20/2009	910055

BILL TO

Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220

OCT 2 2 2009

Thank you for your business.

JOB NUMBER	SERVICE ORDERED BY	DOCKET NUMBER	CASE NAME
9324	James Rader	582-08-2863	LCRA Rate Appeal

DATE TAKEN	DESCRIPTION	QUANTITY	RATE	AMOUNT
	State Office of Administrative Hearings Texas Commission on Environmental Quality			
	Interim Rate Hearing			
9/29/2009	Original & Two Copies - Regular	105	5.25	551.25
	Condensed Transcript, ASCII, Etranscript	1	35.00	35.00
	Administrative Expense Fee	1	27.50	27.50
	Tax ID # 74-1837735			
	Sent 10/13/09			
TERMS:	Due on receipt	Total		$613.75

PLEASE PAY IMMEDIATELY

WO# 1005445

OCT 20 2009

APPROVED: (S. Wessart)

Approved: James Rader

KENNEDY REPORTING SERVICE, INC.
1801 LAVACA, SUITE 115
AUSTIN, TX 78701
(512) 474-2233

LCRA
V546499
613334

Invoice

DATE	INVOICE NO.
9/5/2008	809004

BILL TO

Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220

Thank you for your business.

SEP 09 2008

JOB NUMBER	SERVICE ORDERED BY	DOCKET NUMBER	CASE NAME
8263	James Rader	582-08-2863	Pet. Appealing Water & Sewer

DATE TAKEN	DESCRIPTION	QUANTITY	RATE	AMOUNT
	State Office of Administrative Hearings			
	Texas Commission on Environmental Quality			
	Prehearing Conference			
8/19/2008	Minimum Reporting Fee - One-Half Day	1	150.00	150.00
	Administrative Expense Fee	1	25.00	25.00

FAXED ON 9/19
TO Susan Bage
APPROVED & WORK ORDER
MAILED ASAP
JENNIFER 2935 FAX

Tax ID # 74-1837735

Sent on 9/2/08

TERMS: Due on receipt

Total $175.00

Kennedy Reporting Service, Inc.

1801 Lavaca, Suite 115
Austin, TX 78701

(512) 474-2233

Invoice

DATE	INVOICE NO.
9/5/2008	809004

BILL TO

Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220

Thank you for your business.

JOB NUMBER	SERVICE ORDERED BY	DOCKET NUMBER	CASE NAME
8263	James Rader	582-08-2863	Pet. Appealing Water & Sewer

DATE TAKEN	DESCRIPTION	QUANTITY	RATE	AMOUNT
	State Office of Administrative Hearings			
	Texas Commission on Environmental Quality			
	Prehearing Conference			
8/19/2008	Minimum Reporting Fee - One-Half Day	1	150.00	150.00
	Administrative Expense Fee	1	25.00	25.00
	Tax ID # 74-1837735			
	Sent on 9/2/08 PLEASE PAY IMMEDIATELY			
	WO. 1304391, 1304393 Acc. code - 640003			
	SEP 08 2008			
	APPROVED: [signature] #4701			
TERMS:	Due on receipt	Total		$175.00

RECEIVED
2008 SEP 18 AM 10:04
ACCOUNTING
LCRA

Approved: James Rader ID#1794
James Rader

WO#s: 1304391

V610564
G15045

Pro Courier Service
5308 Fort Mason Dr.
Austin, TX
78745
512-443-6886

Invoice Number: 34170
Account Code: 1011PRO
Invoice Date: 11/23/09

GST/HST: 74-2695769

Invoice Submitted To:
Lower Colorado River Authority
Attn: Accounts Payable
P O Box 679000
Austin, TX
78767

PAYABLE UPON RECEIPT

Invoice Summary

Total Shipments:	1
Base Charges:	$18.15
Order Discounts:	$0.00
Net Charges:	$18.15

Comments:

Total Due: $18.15 USD

Invoice Details

Order No: 75446

Service:	ASAP
Pcs:	0
Wt:	0.00 Lbs
Delivered:	Nov 20 2009 3:22PM
POD:	L herman
BOL #:	

Ship Date: 11/20/2009

From:
LCRA
3700 Lake Austin Blvd Hancock 4th floor Legal
Austin TX

Caller: RENEE

Department:

To:
Jackson & Walker
100 Congress Ave. #1100
Austin TX

Reference: 1665995

Base:	$16.50
Pcs:	$0.00
Wt:	$0.00
	$0.00
Total:	$18.15

Other: Fuel = $1.65,

RECEIVED
NOV 25 2009

OK Debbie Pawlik
11-25-09

PKU COURIER Service
512-443-6886 Austin, TX

DATE 11-20-09

ASAP ☒ 1 HR. ☐ 2 HR. ☐ REG ☐ A.M. ☐ RT ☐

RETURN FILE MARKED COPY | RETURN SIGNED DOC

75446 control no.

FROM: LCRA / LEGAL

ADDRESS: 3700 LAKE AUSTIN BLVD 4th HANCOCK

CITY: AUSTIN | STATE: TX | ZIP: 78703

REF NO: 1665995

SENDER INITIAL | PHONE 473-3200 EXT 2282

SPECIAL INSTRUCTIONS/DESCRIPTION OF GOODS

Maximum declared value $50.00 no exceptions

TO (CONSIGNEE): Jackson Walker

ADDRESS: 100 Congress Ave # 1100

CITY: Austin | STATE: TX | ZIP: 78701

ATTN: Leonard Dougal

PHONE: 236-2000 EXT

RECEIVED BY: x x x

TIME: 3:20 ☐ AM ☐ PM

PIECES

WEIGHT

DRIVER: JP

PU TIME: 3:06 ☐ AM ☐ PM

WAITING TIME | MILEAGE

DELIVERY CHARGE

WAITING TIME

PERSHING

TOTAL CHARGES

63

SZ-13

Water Revenue Requirement

EXPENSES	Budget 2007	Budget 2008	Budget 2009	Budget 2010
DIRECT O&M				
Salaries	$382,059	$408,850	$421,410	$434,306
Materials & Supplies	$81,000	$97,686	$111,655	$128,180
Chemicals	$108,600	$130,972	$149,701	$171,856
Outside Services	$85,675	$103,324	$118,099	$135,578
Utilities: Electric Service	$637,232	$768,502	$878,398	$1,008,400
Utilities: Telephone	$11,000	$13,266	$15,163	$17,407
Water Charge-Reservation Fee	$131,156	$158,174	$180,793	$207,550
Other	$17,238	$20,789	$23,762	$27,280
SHARED/INDIRECT O&M				
WTC Operating Center	$114,367	$117,798	$121,332	$124,972
WTC Region	$506,073	$521,255	$536,892	$552,999
W/WW Customer Service	$386,077	$397,659	$409,589	$421,876
W/WW Common	$1,081,014	$1,113,444	$1,146,847	$1,181,253
Water Services Internal Overhead	$985,829	$1,015,403	$1,045,865	$1,077,240
Water Services New Bus Development	$247,963	$255,401	$263,063	$270,955
Corporate Residual Expense	$253,701	$261,312	$269,151	$277,225
Total Direct O&M	$1,453,960	$1,701,563	$1,898,981	$2,130,557
Total Shared/Indirect O&M	$3,575,024	$3,682,275	$3,792,743	$3,906,525
Total Debt Service	$4,602,758	$5,728,675	$7,380,655	$8,000,079
Operations Reserve	$57,650	$0	$0	$0
Times Coverage @1.25	$1,150,690	$1,432,169	$1,845,164	$2,000,020
Community Development/Public Service	$298,333	$349,434	$421,250	$455,469
Non-Rate Revenues	-$1,658,645	-$2,191,885	-$2,924,885	-$2,913,885
TOTAL REVENUE REQUIREMENT *	**$9,479,770**	**$10,702,230**	**$12,413,906**	**$13,578,764**
Raw Water Expense	$494,378	$575,983	$661,166	$759,312
TOTAL REVENUE REQUIREMENT *including Raw Water Expense*	**$9,974,148**	**$11,278,213**	**$13,075,072**	**$14,338,076**
Residential	$6,541,975	$7,122,796	$7,996,296	$8,486,042
Commercial	$1,646,406	$2,005,202	$2,521,372	$3,001,981
Construction	$206,896	$213,397	$229,898	$222,889
Multifamily	$42,167	$41,551	$43,386	$42,265
Wholesale	$1,536,705	$1,895,267	$2,284,120	$2,584,900

* Totals may not add due to rounding.

Wastewater Revenue Requirement

EXPENSES	Budget 2007	Budget 2008	Budget 2009	Budget 2010
DIRECT O&M				
Salaries	$160,178	$171,391	$176,533	$181,829
Materials & Supplies	$11,200	$11,536	$11,882	$12,016
Chemicals	$19,700	$20,291	$20,900	$21,527
Sludge Disposal	$95,500	$98,365	$101,316	$104,355
Property Acquisition / Lease / Rentals	$90,000	$92,700	$95,481	$98,345
Utilities: Electric Service	$100,000	$99,414	$92,328	$84,969
Utilities: Telephone	$5,500	$5,665	$5,835	$6,010
Other	$24,511	$25,246	$26,024	$26,784
SHARED/INDIRECT O&M				
WTC Operating Center	$57,477	$59,201	$60,977	$62,807
WTC Region	$37,820	$38,955	$40,123	$41,327
W/WW Customer Service	$149,117	$153,591	$158,198	$162,944
W/WW Common	$80,787	$83,211	$85,707	$88,278
Water Services Internal Overhead	$73,673	$75,883	$78,160	$80,504
Water Services New Bus Development	$18,531	$19,087	$19,660	$20,249
Corporate Residual Expense	$18,960	$19,529	$20,115	$20,718
Total Direct O&M	$506,589	$524,608	$530,299	$535,835
Total Shared/Indirect O&M	$436,365	$449,456	$462,940	$476,828
Total Debt Service	$1,844,074	$1,863,873	$1,851,726	$1,845,093
Operations Reserve	$0	$5,185	$3,196	$3,237
Times Coverage @1.25	$461,019	$465,968	$462,932	$461,273
Community Development/Public Service	$84,901	$84,063	$83,913	$84,008
Non-Rate Revenues	-$418,000	-$507,000	-$514,000	-$522,000
TOTAL REVENUE REQUIREMENT *	**$2,914,948**	**$2,886,153**	**$2,881,006**	**$2,884,274**
Residential	$1,862,379	$1,837,823	$1,834,201	$1,836,469
Commercial	$952,873	$952,950	$956,158	$961,261
Multifamily	$99,696	$95,380	$90,646	$86,544

* Totals may not add due to rounding.

SOAH DOCKET NO. 582-08-2863
TCEQ DOCKET NO. 2008-0093-UCR

APPEAL OF THE RETAIL WATER	**§**	**BEFORE THE STATE OFFICE**
AND WASTEWATER RATES OF THE	**§**	**OF**
LOWER COLORADO RIVER AUTHORITY	**§**	**ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY OF KELLY PAYNE, P.E.
ON BEHALF OF LCRA

TABLE OF CONTENTS

EXHIBITS

EXHIBIT 2

SOAH DOCKET NO. 582-08-2863
TCEQ DOCKET NO. 2008-0093-UCR

APPEAL OF THE RETAIL WATER AND WASTEWATER RATES OF THE LOWER COLORADO RIVER AUTHORITY	**§ § §**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY OF KELLY PAYNE, P.E.

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND CONNECTION WITH THIS PROCEEDING.

A. My name is Kelly Payne, I am a Professional Engineer ("P.E.") and I am the Senior Engineer for Lower Colorado River Authority ("LCRA") Water Services Engineering & Planning Department.

Q. HOW LONG HAVE YOU BEEN EMPLOYED BY LCRA?

A. I began working for LCRA in my current position in 2006.

Q. WHAT ARE YOUR AREAS OF RESPONSIBILITY IN YOUR POSITION AS SENIOR ENGINEER FOR THE WATER SERVICES ENGINEERING & PLANNING DEPARTMENT?

A. As a Senior Engineer in the Water Services Business Unit, Engineering and Planning Department of LCRA, my general role and responsibilities include planning and designing water and wastewater engineering projects, design work, field analyses, analyzing engineering data, interpreting engineering drawings and specifications related to O&M projects and Capital Improvement Projects ("CIP"). I also manage engineering planning, evaluations, modeling and design consistent with LCRA Water and Wastewater Utility Services' goals, policies, procedures, and expectations.

In addition to the above responsibilities, I am the primary point of contact for the West Travis County ("WTC") Regional Water and Wastewater Systems (collectively, "WTC Regional Systems") and Operations staff as the technical expert for all projects and systems within the West Travis County Region. I am responsible to monitor flow data, growth projections and planning data and work with the Regional Manager to identify and prioritize projects, provide engineering and technical support for requests for service from non-standard residential or commercial customers, develop and update system master plans, develop and update Impact Fee Studies, develop and maintain water and wastewater system models, and CIP development and implementation.

II. QUALIFICATIONS

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND BUSINESS EXPERIENCE.

A. I graduated from Texas A&M University with a Bachelor of Science Degree in Civil Engineering in 1989. I earned a Master of Science Degree in Civil & Environmental Engineering from Cornell University in 1995. In addition, I have been a licensed Professional Engineer in Texas since February, 1997 (License No. 82053).

Prior to my employment in August of 2006 with LCRA, I was employed by HDR Engineering, Inc., in Austin, Texas between 1992 and 2004. During my tenure at HDR Engineering, Inc. my career and job title progressed in the following order: graduate engineer, engineer, project manager, and management team member. I was employed by Alan Plummer Associates, Inc., Austin Texas as a Senior Engineer between 2004 and 2006.

As a consultant, with HDR Engineering, Inc. and Alan Plummer Associates, Inc., I designed or led design teams for projects that included large diameter sewer lines (30- and 27-inch), water treatment technology assessments (membranes), cross country water and sewer force mains. In addition, I administered construction contracts for two wastewater treatment plants. Work on these projects included ensuring the applicable design standards were followed, developing project budgets and estimates of probable construction cost, reviewing and approving construction materials, and conducting periodic site observations to ensure facilities were constructed in accordance with the design intent.

Q. PLEASE IDENTIFY EXHIBIT KP-1.

A. Exhibit KP-1 is a true and correct copy of my résumé, which I prepared.

Q. TO WHAT PROFESSIONAL ASSOCIATIONS OR AFFILIATIONS DO YOU BELONG, AND WHAT POSITIONS DO YOU HOLD OR HAVE YOU HELD IN THE PAST?

A. I have been a member of the American Society of Civil Engineers ("ASCE") since 1984. ASCE is an organization that represents the profession of Civil Engineering worldwide. I have held a number of leadership positions in ASCE at all levels of the organization. Locally I have served in a number of Austin Branch Board positions including President. At the state level, I have served the Texas Section in a number of committee and board level positions including the Vice President-Education. Nationally I have served on several national committees including serving four years as the Chair of the Educational Activities Committee reporting directly to the ASCE Board of Direction.

I am a member of the Water Environment Association of Texas ("WEAT"), a state organization of water quality professionals. I have been a member since 2007. I have held a number of leadership positions in WEAT at the local level of the organization. I am currently the President of the Central Texas Section of WEAT.

I am a member the Water Environment Federation ("WEF"). I have been a member of this national organization of water quality professionals since 2007. WEF's diverse membership includes scientists, engineers, regulators, academics, plant managers and operators, and other professionals working in the United States and around the world.

I have been a member of the American Water Works Association ("AWWA"), a national organization of water professionals, since 2005. Members represent the full spectrum of the water community: treatment plant operators and managers, scientists, environmentalists, manufacturers, academicians, regulators, and others who hold genuine interest in water supply and public health.

Q. WHAT ARE THE INDUSTRY STANDARDS AND REGULATIONS WITH WHICH YOU MUST BE FAMILIAR IN ORDER TO DESIGN WATER AND WASTEWATER FACILITIES?

A. Water and wastewater design in the State of Texas are generally governed by the Texas Commission on Environmental Quality's ("TCEQ") rules. Water designs are governed by TCEQ, Chapter 290 Rules for public water systems. Wastewater designs are governed by TCEQ, Chapter 217 Rules which enumerate the design criteria for domestic wastewater systems. I have used both these rules and documents in my work as a consultant and as a senior engineer with LCRA. In addition, I am familiar with and have used the TCEQ's Chapter 210 Rules regarding the use of reclaimed water and the TCEQ's Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer.

In addition, many local communities have additional design standards/guidelines (for example the City of Austin, LCRA Water/Wastewater Utility, etc.) that reflect preferences in construction materials used or other design nuances. I have used both the City of Austin and LCRA standards and guidelines extensively.

Lastly, industry standards developed by AWWA through extensive research and development using industry experts across the nation are used extensively by professionals in the water and wastewater industry. I have used many of the AWWA standards in my career including pipe design standards, water meter sizing standards, fire flow testing standards, new pipe disinfection and pressure testing standards and water system modeling guidelines.

Q. ARE YOU FAMILIAR WITH SUCH STANDARDS AND REGULATIONS AND HOW HAVE YOU BECOME FAMILIAR WITH SUCH STANDARDS AND REGULATIONS?

A. I am familiar with these standards and have gained experience using these standards through designing and implementing projects over the length of my twenty year career in the water and wastewater industry. As shown in my resume (see KP-1), I have extensive experience designing and reviewing designs of water and wastewater projects.

In addition, I have attended Texas Water, sponsored by Texas AWWA and WEAT, which is the largest regional engineering and technical water conference in the state, four of the last five years. This conference includes technical presentations on projects and technologies across the state. I also attended the WEAT 217 Implementation Workshop in 2009, where the latest TCEQ rules regarding design criteria for domestic wastewater systems were presented.

III. PURPOSE OF DIRECT TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS MATTER?

A. The purpose of my testimony is to describe the historical and existing facilities of the WTC Regional Systems since LCRA first acquired the Systems, including a discussion of regionalization as it pertains to the WTC Regional Systems. My testimony will also describe and explain the operations of the WTC Regional Systems, specifically discussing the quality and reliability of the WTC Regional Systems. I will also discuss the improvements made to the WTC Regional Systems since LCRA acquired them and LCRA's process for determining and budgeting for needed improvements.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony is organized into three major categories: Historical and Existing Facilities of the Systems, Growth of and Improvements to the Systems, and Challenges Operating and Expanding the Existing Systems. Discussions of the historical and existing facilities include two subcategories, one dedicated to water and one dedicated to wastewater.

In my testimony, I will:

- Explain the existing WTC Regional Systems facilities and state why they are necessary for service to the customers of the WTC Regional Systems;
- Explain the regional nature of the water and wastewater facilities in the WTC Regional Systems and how the regional nature of the facilities results in efficiencies in operation, reduced risk, and the benefits to the customers of a regional utility in lieu of multiple small systems;
- Explain, generally, the major improvements made to the WTC Regional Systems since LCRA acquired and began operating the Systems and the necessity for such improvements;

- Discuss the challenges in operating and developing the WTC Regional Systems;
- Discuss recent failures or TCEQ violations in the WTC Regional Systems;
- Discuss the Quality, Reliability and Growth of the WTC Regional Systems;
- Explain LCRA's process for determining needed improvements, budgeting and oversight of same (LCRA's Capital Improvements Planning ("CIP") planning process); and
- Explain the challenges of meeting the peak water demands for high volume water use customers.

Unless otherwise indicated, my testimony relates to items as they existed on or before August 22, 2007.

IV. FACILITIES OF WEST TRAVIS COUNTY REGIONAL WATER AND WASTEWATER SYSTEMS

A. WEST TRAVIS COUNTY REGIONAL WATER FACILITIES

Q. WHAT EXISTING WATER SYSTEMS WERE ACQUIRED BY LCRA WHICH COMPRISE THE WTC REGIONAL WATER SYSTEM?

A. Exhibit KP-2 accurately describes a general timeline of activities beginning with LCRA's acquisition of the Uplands Water Treatment Plant ("Upland WTP") in 1994, which was the beginning of the water system in WTC. With the acquisition of the Plant, LCRA assumed responsibility to provide water service to the customers of the previous owner. Development of the system in the Bee Cave area has generally been accomplished through agreements with developers who install distribution system expansions and convey the facilities to LCRA once they have been constructed.

In about 2000, LCRA entered into agreements with the Village of Bee Cave ("Bee Cave") through which LCRA would provide retail water and wastewater service in Bee Cave's corporate limits and extraterritorial jurisdictional area ("ETJ"). As part of this agreement, Bee Cave conveyed the portions of the former District 14 system and facilities that were under their control. It is my understanding that the City of Austin acquired the District 14 system and transferred portions to Bee Cave, which elected to convey that portion to LCRA.

The last major acquisition in the WTC Regional Water System was the Hill Country Water Supply Corporation ("HCWSC") which was acquired by LCRA in about 2004. The HCWSC service area includes portions of the area along US Highway 290 between the Cities of Austin and Dripping Springs. Prior to acquisition by LCRA, the HCWSC purchased wholesale water from the City of Austin. Once acquired, City of Austin supply terminated and LCRA added the system to the water supply provided by the LCRA 290 Pipeline.

Q. DO YOU HAVE AN EXHIBIT THAT SHOWS THE GEOGRAPHIC AREA SERVED BY THE WEST TRAVIS COUNTY REGIONAL WATER SYSTEM AND ITS FACILITIES AT THE END OF FY 2007?

A. Yes. Exhibit KP-3 is a map of the WTC Regional Water System and the surrounding area, which was prepared at my direction. The WTC water service area encompasses approximately 200 square miles and includes portions of southwest Travis and northwest Hays Counties in developments primarily along State Highway 71, Farm to Market Road ("FM") 2244 ("Bee Cave Road)", Ranch Road 620, FM 3238 ("Hamilton Pool Road"), U.S. Highway 290, Sawyer Ranch Road and FM 1826.

As shown on the map, the WTC Regional Water System serves major portions of western Travis County and northern Hays County. The colored polygons represent the eight pressure planes served by the WTC Regional Water System. A pressure plane is a sub-regional service area where the local topography defines the static pressures necessary to provide service at levels appropriate to maintain public safety. The names of the pressure planes represent the static level of pressure for the pressure plane in feet-mean-sea-level. This is significant in the operations of the WTC Regional Water System because the water is treated at the lowest pressure plane and must be pumped to each of the other seven pressure planes. LCRA currently has no customers in the 1500 pressure plane.

The WTC Regional Water System serves retail water customers in each of the colored pressure planes (with the exception of 1500 pressure plane), with the majority of the customers located in the eastern portions of the service area. The major subdivisions and areas where the WTC Regional Water System provides retail water service are:

- The Uplands;
- Lake Pointe;
- Seven Oaks;
- Spanish Oaks;
- Homestead;
- Falconhead;
- Sunset Canyon;
- Highpointe;
- City of Bee Cave area; and
- Hill Country WSC area.

On the map, the facilities in royal blue are the major water system facilities that were in place and operating in FY 2007. This map shows the location of the Uplands WTP and Raw Water Intake from Lake Austin, as well as the major water transmission pipelines, pump stations and tanks

(shown as circles). All facilities in royal blue were in place and operating in FY 2007, the facilities shown in red were planned expansions in FY 2007.

In addition to the facilities, this map shows the geographic breadth of the WTC Regional Water System.

Lastly, this map shows where LCRA provides wholesale water service. The areas hatched in a green, diagonal pattern are areas where the WTC Regional Water System supplies wholesale water. In these areas, a retail provider such as a Municipal Utility District ("MUD"), Water Supply Corporation ("WSC"), Home Owners Association ("HOA") or Water Control and Improvement District ("WCID") is responsible for delivering water to their retail customers.

Q. PLEASE DESCRIBE THE FACILITIES WHICH COMPRISE THE LCRA'S WTC REGIONAL WATER SYSTEM AT THE END OF FY 2007.

A. LCRA's WTC Regional Water System, in FY 2007, was made up of the following major facilities:

- A raw water intake ("RWI") structure and pump station on Lake Austin;
- A 30-inch raw water transmission main from intake on Lake Austin to the Uplands WTP;
- An 11.1 million gallon per day ("mgd") Water Treatment Plant (Uplands WTP);
- Approximately 2.25 million gallons of elevated/hydro tank storage capacity;
  - Elevated Storage – 3 sites with a total volume of 2,229,000 gallons;
  - Hydro Tanks – 2 sites with a total of 25,000 gallons;
- Approximately 2.2 million gallons of ground storage capacity;
- Approximately 39 miles of transmission main pipelines; and
- Approximately 170 miles of water distribution pipelines.

In his testimony, Jim Travis presents a detailed list of the facility assets and other components that comprise the WTC Regional Water System. (Exhibit JT-20) This list includes a table of Construction Work in Progress that details assets that were being constructed or just completed at the end of FY 2006. Several of these projects, such as the Uplands WTP Chemical Building, Uplands WTP High Service Pump ("Station") and Uplands WTP Water Intake Expan(sion) were projects that enhanced the reliability of potable water treatment facilities for existing customers (as well as future customers). The Chemical Building project was a regulatory mandated project aimed at protecting the neighbors of the Uplands WTP against the risk of an upset of the chemicals used in the treatment process and most directly enhanced public safety for the neighborhoods in the direct vicinity of the WTP (namely Uplands and Lake Pointe subdivisions).

Q. WHAT ARE THE CONSTRUCTION AND OPERATIONAL CHALLENGES ASSOCIATED WITH THE WTC REGIONAL WATER SYSTEM?

A. There are geographic and demographic challenges associated with providing regional water service to the WTC Regional Water System service area. These challenges include: 1) high peak demands created by high water use per connection, 2) challenging environment for construction including rocky soils and large changes in elevation, 3) extensive areas of endangered species habitat, and 4) large geographic area served with wide variability in population densities served. All of these factors lead to higher costs for construction and operation compared to areas with soft soils and relatively flat, compact service areas.

Q. HOW DO WATER USAGE PATTERNS BY THE BEE CAVE AREA CUSTOMERS OF THE WTC REGIONAL WATER SYSTEM AFFECT THE DESIGN OF THAT SYSTEM?

A. As shown on Exhibit SZ-5 (Comparison Chart) the Bee Cave area customers of the WTC Regional Water System, on average use considerably more water per capita than customers in LCRA's Hill Country Regional Systems. In the summer month's (July through September), water use by the Bee Cave customers in WTC Regional Water System is over three times as large as the monthly water use of customers in the Hill Country Regional Water Systems, for the same summer months. Each one of these curves represents the average customer bill by month for their respective water system customers. This graph demonstrates that the water demands of Bee Cave customers of the WTC Regional Water System are much higher than those of other LCRA operated water systems.

This difference is significant because water treatment facilities have to be sized such that they can treat and deliver the volume of water demanded by their customers during the peak day of the year. Review of the West Travis County curve in Exhibit SZ-5 reveals that the difference between average water use in the lowest seven months of the year (January through May and November through December) is approximately 10,000 gallons per month less than the average water use in the five highest water use months (June through October). This means that over half of the year (seven months), the system's primary components are only about sixty percent utilized. This represents a large capital cost invested in the WTC Regional Water System to deliver water during less than half of the year. This dramatic difference is primarily driven by the large irrigation demand placed on the WTC Regional Water System by its customers in the summer months.

Q. DO YOU CONSIDER THE WTC REGIONAL WATER SYSTEM A REGIONAL FACILITY?

A. Yes, based upon my experience with the TCEQ and the Texas Water Development Board ("TWDB"). I believe this because the WTC Regional Water System serves numerous residential subdivisions located in a number of unique political subdivisions, including the City of Bee Cave, several MUDs and Water Control and Improvement Districts ("WCID"), along with providing wholesale water supply to other customers. Regional water systems provide economies of scale because they centralize water treatment and minimize the number of raw water intakes in reservoirs and bear the construction and operation and maintenance of these facilities over a larger customer base.

In addition, regional facilities minimize the number of water treatment facilities that regulatory agencies have to monitor and inspect. In fact, the TCEQ's guidelines for approving a new water treatment facility require the applicant to ensure that there is not an existing potable water source within a cost effective distance for the new system to regionalize with, prior to the creation of a new public water system. Also, the TWDB considers systems to be regional when they include more than one service area or more than one political subdivision. *[(http://www.twdb.state tx.us/assistance/financial/fin_regionalfacilityplan/RegionalPlanning.asp]*

Q. HOW MANY METERS DID THE WEST TRAVIS COUNTY REGIONAL WATER SYSTEM SERVE AT THE END OF FY 2007?

A. At the end of FY 2007, the WTC Regional Water System served approximately 4,200 retail water meters and seven wholesale metered water customers. However, I would note that meter counts are not the best measure of service demands in the WTC Regional Water System, because of the variability in meter sizes which equates to variability in the volume of water that can be delivered through different size meters.

Q. WHAT DO YOU USE, OTHER THAN METER COUNTS, TO CHARACTERIZE THE WTC REGIONAL WATER SYSTEM DEMAND?

A. LCRA measures the use and capacity of the water system by means of the industry standard, Living Unit Equivalent ("LUE"). An LUE is defined as the water demand for a typical single family residential unit. For planning in the WTC Regional Water System, one LUE represents approximately 1.0 gallon per minute ("gpm") of demand during the maximum water use day of the year. Historic data shows that the peak day demand in suburban areas of the WTC Regional Water System was 1.3 gpm per LUE. Similarly, analysis of historical data of the rural parts of the WTC Regional Water System found the peak day demand to be 0.8 gpm per LUE for the rural

areas. For planning purposes for the entire system, a peak day water use demand of 1.0 gpm per LUE is appropriate. The Texas Commission on Environmental Quality ("TCEQ") rules state that surface water treatment systems must be able to provide 0.6 gpm per connection of treated water at all times. The use in WTC Regional Water System is larger because the water users historically have demanded more water than the state mandated minimum. At the end of FY 2007, the WTC Regional Water System served approximately 7,600 LUEs, consisting of about 2,200 wholesale LUEs and about 5,400 retail LUEs.

Q. AT THE TIME THE LCRA BOARD VOTED TO INCREASE WATER RATES IN 2007, WAS THE WTC REGIONAL WATER SYSTEM ADEQUATELY AND PROPERLY SIZED TO SERVE THE EXISTING CUSTOMER NEEDS AND SOME EXPECTED GROWTH?

A. Yes. At the time the LCRA Board voted to increase the water rates for the customers of the WTC Regional Water System, the system was adequately and properly sized to meet the demands of the system, and some expected growth. As discussed in previous answers, the capacity of the water treatment plant was 11.1 mgd and the number of customers ("LUEs") was approximately 7,600. Water treatment plants must be sized to meet the peak day demand on the system. The TCEQ requires that at least 0.6 gpm of potable water supply capacity per connection must be available to meet peak day demand. The following calculation shows that the WTC Regional Water System had sufficient capacity to meet this standard:

7,600 LUEs x 0.6 gpm/LUE x 1,440 minutes per day = 6.57 mgd

This 6.57 mgd minimum capacity is much less than the capacity LCRA had available in FY 2007, which at the time was 11.1 mgd.

The reason for the additional capacity is because the customers in the WTC Regional Water System use significantly more water than the state minimum peak day demands would supply. Using the historical peak day demand placed on the WTC Regional Water System customers of approximately 1.0 gpm/LUE (as noted in a previous answer),the following calculation shows that the WTC Regional Water System had barely sufficient capacity to meet the demands placed on the System by its customers:

7,600 LUE x 1.0 gpm/LUE x 1,440 minutes per day = 10.9 mgd

Based on this theoretical, calculated historical peak day use by WTC customers, the water plant was sufficiently sized, just barely, to provide peak day demand to the WTC Regional Water System at the time the LCRA Board approved the rate increase. Given the slim margin of extra capacity, in 2007 LCRA had already begun to plan for the expansion of the Uplands WTP.

Q. OTHER THAN PEAK DEMANDS, ARE THERE OTHER DESIGN PARAMETERS WHICH ARE RELEVANT TO ENSURING THE WTC REGIONAL WATER SYSTEM WAS ADEQUATELY AND PROPERLY SIZED AT THE TIME OF THE RATE INCREASE?

A. Yes. In addition to requirements for peak day demand production at the water treatment plant, the TCEQ regulations require minimum volumes of storage for a water system. The TCEQ rules require a minimum elevated storage capacity of 100 gallons per connection ("LUE"). This requirement allows for hydropneumatic tanks (hydro tanks) to be used in lieu of elevated storage tanks. A hydro tank is a small pressure vessel that acts like an elevated storage tank but has a smaller gallon per LUE requirement. TCEQ rules state that a pressure tank (hydro tank) must have a minimum capacity of 20 gallons per connection. In addition to pressure tank and elevated storage tank capacity minimum requirements, the TCEQ regulations require a minimum of 200 gallons per connection of total storage. Total storage is a combination of elevated, pressure tank, and ground storage.

At the time the LCRA Board approved the rate increase for the WTC Regional Water System, the total volume of elevated storage was approximately 2.3 million gallons, or capacity for approximately 23,000 LUEs, using TCEQ's minimum standard of 100 gallons per connection. However, this volume is insufficient, based on historical usage patterns, to meet the needs of the customers of the WTC Regional Water System. As was discussed with the water treatment plant capacity, the customers of the WTC Regional Water System use water at a rate and volume much higher than the TCEQ minimum guidelines. Analyses of historical use patterns indicate that water use during peak times requires a design guideline of 250 gallons of elevated storage per LUE is more appropriate for this System. Therefore, using this WTC Regional Water System's customer demand-based design criteria, the System actually only had elevated storage capacity for 9,200 LUEs at the time the rate increase was approved by the LCRA Board.

Q. WAS ANY OTHER STORAGE NECESSARY TO ENSURE THE WTC REGIONAL WATER SYSTEM WAS ADEQUATELY AND PROPERLY SIZED AT THE TIME OF THE RATE INCREASE?

A. Yes. Similar to my previous answer, at the time of the approval of the rate increase, the total system storage (elevated and ground storage combined) was approximately 4.45 million gallons, or theoretical capacity for approximately 22,250 LUEs, using TCEQ's minimum standard of 200 gallons per connection. As discussed previously, LCRA customers of the WTC Regional Water System use water at a rate much higher than the TCEQ minimum guidelines, and therefore the minimum standard is insufficient to meet the demands by the System customers. Analysis of historical use indicates a design guideline of 370 gallons of storage per LUE is more appropriate

for this system. Using this design guideline, the System had total storage capacity to support approximately 12,000 LUEs at the time the rate increase was approved by the LCRA Board. Given the number of pressure planes required for the proper operation of this System, this amount of total system storage is appropriate and necessary to meet customer demands and expected growth. In that regard, I would point out that each pressure plane in the WTC Regional Water System has at least one pump station feeding the pressure plane. Each of these pump stations necessarily includes ground storage tanks and the size of the ground storage tank is a part of the design of the pump station.

Q. DOES THE TCEQ HAVE ANY RULE WHICH ADDRESSES WHEN A PUBLIC DRINKING WATER SYSTEM, SUCH AS THE WTC REGIONAL WATER SYSTEM, IS TO BEGIN PLANNING AND CONSTRUCTING FACILITY EXPANSIONS?

A. Yes. Pursuant to rule § 291.93(3), a public drinking water system is required to plan for facility expansion when the facility reaches 85% of its capacity, including reporting to TCEQ what the plan is to address the need for additional capacity.

Q. AT THE TIME OF THE RATE INCREASE, WAS THE WTC REGIONAL WATER SYSTEM IN COMPLIANCE WITH THIS RULE?

A. Yes.

Q. ARE THE WTC CUSTOMERS BEING CHARGED FOR THE ENTIRE CAPACITY OF THE WTC REGIONAL WATER SYSTEM?

A. No. I am aware that the Cost of Service Study incorporates something called the "excess capacity reserve" for financial and rate setting purposes. I understand this was done for the purpose of lessening the rate burden on existing customers and that LCRA is funding this cost from the Public Service Fund as described in Steve Kellicker's Direct Testimony.

Q. IS THE TCEQ INVOLVED IN AN OVERSIGHT ROLE REGARDING IMPROVEMENTS IN THE WTC REGIONAL WATER SYSTEM?

A. Yes. The TCEQ reviews and approves the plans and design specifications for major treatment plant expansions and tankage projects prior to construction. LCRA has historically complied with this requirement by seeking and obtaining approval from TCEQ for such projects.

Q. DOES TCEQ INSPECT THE FACILITIES WHICH COMPRISE THE WTC REGIONAL WATER SYSTEM?

A. Yes. The TCEQ periodically visits systems to review the facilities and confirm compliance with public water system regulations. In fact, the WTC Regional Water System is recognized by the TCEQ as a "Superior Public Water System". This recognition is granted to public water systems which have qualified operations staff, a sound history of quality operation, and well maintained facilities that are not only functional but are pleasing in appearance.

Q. ARE PORTIONS OF THE SYSTEM CAPABLE OF PROVIDING FIRE FLOW?

A. Yes. LCRA has developed a set of specifications, the Water & Wastewater Utilities Design Criteria ("LCRA Design Criteria"), which details the design criteria for spacing and recommended design flow rates and durations for designing fire flow capacity into the system. In most parts of the WTC Regional Water System, local fire departments review plans for new development and perform flow tests in the existing system to determine if the appropriate level of fire flow can be provided. In most cases, new development must receive approval from the local fire department prior to getting approval of their plat by the appropriate governing authority (i.e. City of Bee Cave, City of Austin, City of Dripping Springs, etc.) Where fire department approval is required, LCRA recognizes the expertise of the fire department regarding the appropriate level of fire flow that needs to be provided. In areas where a fire department does not engage in the development process (mostly rural systems outside the WTC service area), LCRA's Design Criteria has guidelines for recommended minimum levels of fire flow to be incorporated into the design. In the West Travis County area, there are multiple local fire departments such as emergency service districts or other local governmental entities.

It should be noted that there are portions of the WTC Regional Water System that do not have full fire flow capacity. There are portions of the System that LCRA acquired from the HCWSC that have small, 2-inch and 4-inch, water lines throughout the system. As a general rule, these lines cannot provide full fire flow capacity due to the size of the pipe. The TCEQ regulations regarding public water systems do not require sizing of all the parts of the system to provide sufficient fire flow capacity. The HCWSC founders did not construct all of their system in a manner in which full fire flow capacity can be provided. I assume this was done because of HCWSC and their customers could not afford to put in the size infrastructure necessary to provide complete fire flow capacity. As LCRA adds new customers to this portion of the WTC Regional Water System, it always looks for ways to improve the fire flow capacity.

In the areas where fire flow capacity is available, this capacity benefits the customers because it provides for additional public safety in the area.

Q. WHAT ARE THE COSTS ASSOCIATED WITH PROVIDING FIRE FLOW CAPABILITIES AS PART OF NEW FACILITY INSTALLATIONS?

A. As previously discussed, TCEQ standards do not require fire flow capacity as part of the water system design. The costs associated with providing fire flow as part of new facility installations is generally small compared to the cost of the development as a whole in areas where sufficient elevated storage capacity exists and pipe size is the primary driver of fire flow capacity. Therefore, in these situations, fire flow capacity is included in the design. LCRA's Water & Wastewater Utilities Design Criteria call for a minimum pipe size of 8-inches in diameter to provide for fire flow capacity. In areas without sufficient elevated storage to provide fire flow capacity, both pipe size and additional elevated storage capacities must be taken into account and factored into the design. This is the more costly situation. In either case, the customers of the system benefit from the public safety aspect of fire flow capacity as it leads to lower homeowners/business insurance rates.

Retrofitting areas with inadequate capacities for effective fire flow is expensive and disruptive to the customers in the area. As an example, LCRA has performed planning level analyses to determine the magnitude of the costs that would be necessary to upgrade the former HCWSC portion of the WTC Regional Water System to provide fire flow. The analysis showed that the cost to retrofit this area is estimated to be as much as $24 million. The analysis also showed that this would equate to approximately $100 per customer per month added to each customer's monthly water bill. Due to the cost, LCRA has no plans to make these upgrades.

Q. IF THE WATER FACILITIES WERE PROPERLY DESIGNED AND SIZED IN 2007, WAS THERE A NEED FOR ANY SUBSEQUENT SYSTEM CONSTRUCTION OR CAPITAL IMPROVEMENTS?

A. Yes. As an example, the improvements made to the Chemical Building at the Uplands WTP were constructed to increase the health and safety of the neighborhoods in the direct vicinity of the WTP. After completion of this project the public safety in the areas near the WTP was enhanced as a direct result of the safety features installed to contain and dilute any chemical upsets at the facility.

Additionally, as you can tell from the map of the system and service area (Exhibit KP-3), there are large portions of the service area that will require new waterlines and facilities to provide service to future customers and subdivisions, many of which have not yet been planned. I will discuss the details of certain planned improvements in a subsequent section of my testimony.

Q. PLEASE SUMMARIZE YOUR OPINION OF LCRA'S WTC REGIONAL WATER FACILITIES AT THE TIME THE BOARD APPROVED THE RATE INCREASE IN 2007.

A. In my opinion, the WTC Regional Water System was properly sized to meet the needs and demands of its then existing customers and some expected growth. As shown previously, the System's facilities are in compliance with TCEQ minimum size regulations and in fact are larger than the TCEQ's minimum requirements because the water supply demands imposed by the customers on the System dictate the need for a larger and more robust system. Additionally, portions of the System have been sized to provide fire flow capacity, which is required by certain jurisdictions in the service area and provides public safety benefits. As such, the System as sized was reasonable and necessary to reliably serve its customers.

B. WEST TRAVIS COUNTY REGIONAL WASTEWATER FACILITIES

Q. WHEN DID LCRA ACQUIRE THE WEST TRAVIS COUNTY REGIONAL WASTEWATER SYSTEM?

A. LCRA acquired the Lake Pointe Wastewater Treatment Plant ("LP WWTP"), the Lake Pointe subdivision collection system, and the effluent disposal system in 2000 from the developers and municipal utility district ("MUD") associated with the Lake Pointe subdivision. At the time of acquisition, LCRA assumed operations of the WWTP as well as the service commitments to the residents of Lake Pointe subdivision and other out of district customers the developers had contracted with.

After LCRA acquired the LP WWTP, planning began to further regionalize the wastewater system to serve the City of Bee Cave and its ETJ, where feasible. The primary reasons for regionalization were to provide economies of scale in providing wastewater service to new subdivisions developing in the City of Bee Cave and its ETJ (which includes Spanish Oaks, Falconhead, and commercial development along Hwy 71, FM 2244, and RR 620) and to take advantage of the existing capacity at the existing WWTP rather than have to construct other potentially duplicative treatment facilities elsewhere in the Bee Cave area.

Q. PLEASE DESCRIBE LCRA'S WEST TRAVIS COUNTY REGIONAL WASTEWATER SYSTEM IN FY 2007.

A. The WTC Regional Wastewater System's service area consists of approximately 8,830 acres of land which roughly coincides with the Extra-Territorial Jurisdiction of the City of Bee Cave, Texas.

In FY 2007, LCRA's WTC Regional Wastewater System was made up of the following major facilities:

- A 0.525 mgd wastewater treatment plant ("LP WWTP"), with a permit to expand the plant to a maximum capacity of 0.675 mgd;
- A 12-inch, 4.5 mile effluent force main;
- A 77 acre-foot (approximately) effluent storage pond;
- 4 regional wastewater lift stations;
- 13 local wastewater lift station within internal collection systems;
- Approximately 14 miles of wastewater force mains; and
- Approximately 30 miles of wastewater interceptors and internal collection system pipelines and 756 manholes.

In his testimony, Jim Travis presents a detailed list of the facility assets and other components which comprise the WTC Regional Wastewater System. (Exhibit JT-21). As with the WTC Regional Water System asset list, the Wastewater System list includes a table of Construction Work in Progress that details assets that were being constructed or just completed at the end of FY 2006. The Lake Pointe Noise & Odor Abatement project was a project directed at mitigating noise and odor concerns in the immediate vicinity of the LP WWTP (namely the Lake Pointe subdivision).

Q. IS THE WTC WASTEWATER SYSTEM A REGIONAL FACILITY?

A. Yes. I consider it to be a regional facility because it not only serves the Lake Pointe Subdivision but also serves Falconhead and Spanish Oaks subdivisions as well as commercial development in the City of Bee Cave and its ETJ along FM 2244, RM 620, and Highway 71. In addition, at the time the LCRA Board approved the rate increase, plans were in place to provide wholesale service to WCID 17 in the Falconhead West subdivision.

Q. PLEASE DESCRIBE HOW TREATED WASTEWATER FROM THE WTC REGIONAL WASTEWATER SYSTEM IS DISCHARGED AND MANAGED.

A. In accordance with TCEQ Rules at Chapter 311, Subchapter A, treated wastewater from the WTC Regional Wastewater System must be discharged via controlled irrigation of the effluent. The LP WWTP's treated effluent is pumped from the WWTP site to an effluent storage pond in the Falconhead subdivision. From the storage pond, effluent is delivered to and land-applied on golf courses in the Falconhead and Spanish Oaks subdivisions and common areas in the Falconhead subdivision. This land application via surface irrigation is authorized in the LP WWTP discharge permit and by Chapter 210 authorization. The water is sold to the golf courses and Falconhead subdivision at a rate less than that for potable water. This generates a revenue source for the

WTC System and also decreases the need for oversizing of the potable water system to meet the high volume irrigation needs of the golf courses during hot, dry weather.

Q. HOW MANY CONNECTIONS DID THE WTC REGIONAL WASTEWATER SYSTEM SERVE IN FY 2007?

A. Wastewater connections are typically not metered; therefore, meter counts are not a good measure of service in the WTC Regional Wastewater System. LCRA measures the use and capacity of the wastewater system by means of the industry standard, Living Unit Equivalents ("LUE"). At year end FY 2007, the WTC Regional Wastewater System served approximately 1,700 total LUEs.

Q. IN YOUR OPINION, WAS THE WASTEWATER SYSTEM PROPERLY DESIGNED AND SIZED, AT THE TIME OF THE BOARD'S DECISION TO RAISE THE RATES?

A. Yes. The existing WTC Regional Wastewater System and LP WWTP were adequately sized to serve the customers and some growth at the time the LCRA Board approved wastewater rate increase for the System.

Q. DOES THE TCEQ HAVE ANY RULES WHICH ADDRESSES WHEN A DOMESTIC WASTEWATER SYSTEM, SUCH AS THE WTC REGIONAL WASTEWATER SYSTEM, IS TO BEGIN PLANNING AND CONSTRUCTING FACILITY EXPANSIONS?

A. Yes. Pursuant to the Standard Provisions of the permit for wastewater discharge issued to LCRA by TCEQ for the LP WWTP, whenever flow measurements for the sewage treatment facility reach 75% of the of the permitted average daily flow for three consecutive months, LCRA must initiate engineering and financial planning for expansion of the WWTP. Further, when flow measurements for the plant reach 90% of the permitted average daily flow for three consecutive months, the LCRA shall obtain necessary authorization from the TCEQ to begin construction of additional treatment capacity.

Q. AT THE TIME OF THE RATE INCREASE, WAS THE WTC REGIONAL WASTEWATER SYSTEM IN COMPLIANCE WITH THIS RULE?

A. Yes.

Q. IF THE WASTEWATER FACILITIES WERE PROPERLY DESIGNED AND SIZED IN 2007, WAS THERE A NEED FOR ANY SUBSEQUENT SYSTEM CONSTRUCTION OR CAPITAL IMPROVEMENTS?

A. Yes. As wastewater loads at the LP WWTP increased, equipment ran more frequently and at higher capacities. This led to an increase in potentially nuisance noise levels in the vicinity of the WWTP. Additionally, increased flows allowed for more frequent opportunities for odor problems. The Lake Pointe Noise & Abatement project directly targeted these potential nuisance

problems with facilities aimed at reducing, to acceptable levels, these issues and to enhance the quality of life for the residents of the Lake Pointe subdivision.

Since LCRA acquired the wastewater system, there has been a need to provide service to meet the demands within the defined service area. Master plans for the WTC Regional Wastewater System have included service to much of the City of Bee Cave and its ETJ. Since much of the System has been built from the LP WWTP out toward development, many of the force mains and gravity interceptors have been sized to accommodate growth in the system. In addition, regional lift stations have been designed and constructed to meet the needs at the time of their construction and to be easily expandable to meet future needs when they develop. Therefore, as the System grows, there will be additional treatment plant capacity expansions and potentially a new WWTP in the Region as the existing WWTP has a maximum capacity that can be built on the site. I discuss the details of certain planned improvements in a subsequent section of my testimony.

Q. PLEASE SUMMARIZE YOUR OPINION OF LCRA'S EXISTING WTC REGIONAL WASTEWATER FACILITIES.

A. In my opinion, LCRA's existing WTC Regional Wastewater System's facilities existing at the time of the rate increase were necessary and beneficial for the customers of the WTC Regional Wastewater System and were in compliance with the TCEQ regulations.

V. GROWTH OF AND IMPROVEMENTS TO WTC REGIONAL WATER AND WASTEWATER SYSTEMS

Q. PLEASE DESCRIBE, GENERALLY, THE SYSTEM IMPROVEMENTS SINCE THE ACQUISITION OF THE WTC REGIONAL WATER SYSTEM UNTIL FY 2007.

A. When LCRA acquired the WTC Regional Water System in 1994, the System was serving approximately 400 LUEs with a treatment capacity of 1.8 mgd. Over the next several years, LCRA expanded the WTC Regional Water System to meet the growing needs of the service area by constructing numerous transmission mains along FM 2244 and Highway 71 and additional system storage to support the system. By 1999, the customer base had grown to a level that required an expansion of the treatment plant capacity. In this year, the Uplands WTP was expanded to 5.8 mgd.

In about 2000, the LCRA entered into agreement with the Village of Bee Cave ("Bee Cave") through which LCRA provides retail water and wastewater service in Bee Cave's corporate limits and ETJ. In addition, around this time, LCRA began to construct the facilities necessary to convey potable surface water to the historically groundwater dependent areas along US Highway 290 and in and around Dripping Springs (through a wholesale agreement with the Dripping

Springs Water Supply Corporation). This expansion was completed in 2002 with the completion of the 290 Pipeline and another expansion to the Uplands WTP (up to 7.8 mgd).

Between 2002 and 2005, the WTC Regional Water System completed two elevated storage projects (one in the Bee Cave area and one in the Dripping Springs area) to increase the dependability of the system and provide for required elevated storage capacity. It was during this time that the LCRA acquired the Hill Country Water Supply Corporation. This era of the System culminated with the expansion of the Uplands WTP to 9.8 mgd.

The last era of expansion prior to FY 2007 included projects extending transmission mains down Hamilton Pool Road in the Bee Cave area and Sawyer Ranch Road in the Dripping Springs area. These projects extended surface water supplies to areas that were historically supplied by dwindling groundwater sources that had not been very drought tolerant. In addition, work was begun during this time to extend transmission mains out Highway 71 beyond the territorial limits of Bee Cave. With these expansions to the System, the Uplands WTP was expanded in an interim step to a capacity of 11.1 mgd. This was considered an interim expansion because an additional major expansion was in the planning and design phase while this expansion was constructed.

Exhibit KP-2 shows a summary of this history of the expansion of the WTC Regional Water System from the initial acquisition through what was planned for FY 2008 as of the LCRA Board approval of the rate increase.

Q. WERE ANY ADDITIONAL IMPROVEMENTS PLANNED FOR THE UPLANDS WTP?

A. Yes. At the time of the rate increase, there was a plan to further expand the Uplands WTP to increase its capacity to 20 mgd by early summer 2009, to serve additional customer growth. At this capacity, the Uplands WTP will be able to serve approximately 13,900 LUEs on the maximum water demand day. The expansion was projected to be of a size sufficient to meet maximum day demands on the System until 2014, if growth patterns followed the expected projections.

Q. PLEASE DISCUSS, GENERALLY, THE SYSTEM IMPROVEMENTS SINCE THE ACQUISITION OF THE WTC REGIONAL WASTEWATER SYSTEM UNTIL FY 2007.

A. Between the acquisition of the LP WWTP in 2001 and the time the LCRA Board authorized rate increases, the WTC Regional Wastewater System expanded to serve the Spanish Oaks and Falconhead subdivisions as well as commercial development in the City of Bee Cave and its ETJ. Major improvements included the construction of three regional lift stations and associated force

mains, regional gravity interceptors to deliver water from local collection systems to the lift stations, and expansion of the effluent disposal system to include delivery to the Spanish Oaks Golf Course.

Q. WHY WERE THESE IMPROVEMENTS MADE TO THE WTC WASTEWATER SYSTEM?

A. These improvements were made to the WTC Regional Wastewater System to expand the area served and further regionalize the system. With the expansion, the WTC Regional Wastewater System allowed for development to occur without the construction of additional on-site sewerage system including small "neighborhood" wastewater treatment plants or on-site septic systems. The regionalization of the System has allowed development in the area to occur in a way that protects the environment, specifically portions of the watersheds of Little Barton Creek and Barton Creek, and minimizes the number of opportunities for environmental upsets. This includes commercial and multi-family developments in the region, such as the Hill Country Galleria and Shops of the Galleria.

Q. WERE ANY ADDITIONAL IMPROVEMENTS PLANNED FOR THE LAKE POINTE WWTP?

A. LCRA plans to increase the capacity of the LP WWTP in the future as required by TCEQ and necessitated by growth. The current wastewater discharge permit issued to LCRA includes three phases of wastewater treatment capacity. The first phase, the phase in existence at the time the LCRA Board approved a wastewater rate increase and referred to as Interim Phase I in the permit, allows for a WWTP that may dispose of treated domestic effluent at a daily average flow rate not to exceed 0.525 mgd. As more of the service area is developed, the WWTP capacity for the WTC Regional Wastewater System will need to be expanded in two phases. The first phase of the expansion, referred to as Interim Phase II in the wastewater discharge permit, will include the improvements to the existing LP WWTP to increase the treatment capacity to a daily average flow rate not to exceed 0.675 mgd. In the second expansion phase, referred to as the Final Phase in the wastewater discharge permit, LCRA will construct a new WWTP. It is anticipated that this new plant will be constructed on land LCRA currently owns in the City of Bee Cave that has been set aside for the second WWTP. The permit allows for a new wastewater treatment plant capable of treating a flow not to exceed a daily average flow of 0.325 mgd. At the time the LCRA Board approved the wastewater rate increase, growth projections indicated that the new WWTP would need to be constructed and operational by 2012.

Q. DOES THE LCRA HAVE A PROCESS TO PLAN FOR FUTURE WATER AND WASTEWATER SYSTEM IMPROVEMENTS?

A. Yes. Each year the LCRA Water Services prepares a Capital Improvement Plan ("CIP") for the LCRA Board's consideration and approval. The Water and Wastewater Utility prepares a 10-year plan of projects needed to support their systems. While these plans are presented to the LCRA Board in one comprehensive package, the plans are developed at the individual system level.

Q. ARE YOU FAMILIAR WITH THE FY 2007 CAPITAL IMPROVEMENT PLAN FOR THE WTC REGIONAL WATER AND WASTEWATER SYSTEMS?

A. Yes. I am involved in the development of the LCRA CIP for the WTC Regional Water and Wastewater Systems. One of my primary responsibilities is to assist in the development of the CIP each year.

Q. HOW ARE PROJECTS IDENTIFIED FOR INCLUSION IN THE LCRA CAPITAL IMPROVEMENT PLAN, AS RELATED TO WTC REGIONAL WATER AND WASTEWATER SYSTEMS?

A. Every five years, or earlier if needed, LCRA reviews and updates master plans for the WTC Regional Water and/or Wastewater Systems. These master plans are typically updated prior to the commencement of a new impact fee study. The purpose of the master plans is to review the current and anticipated growth in the System, determine the facilities needed to provide service to the existing and future customers of the System, and to determine when the proposed facilities need to be constructed. This process leads to the development of a capital improvements plan which includes potential projects, capacities for these projects and estimates of probable cost to construct these projects. In addition to the projects identified in these master plans, I consult with operations staff and the WTC Regional Manager, and other LCRA engineering staff to determine if there are improvements that need to be made to the existing facilities to improve the quality of service to LCRA's customers. As the WTC Regional Engineer, I manage the process to develop projects, with estimates of probable cost, to provide the improvements identified for others involved in the management and operation of the WTC Regional Water and Wastewater Systems.

Q. HOW OFTEN ARE THE LCRA CAPITAL IMPROVEMENT PLANS FOR THE WTC REGIONAL WATER AND WASTEWATER SYSTEMS UPDATED?

A. LCRA re-evaluates the CIP each year and makes adjustments to reflect additional information gained since the last CIP was developed. At LCRA, the CIP calendar coincides with the Fiscal Year. At the beginning of a new Fiscal Year, in July, the Water Services' Project Management

Office ("PMO") begins implementation of that year's LCRA CIP. I serve as a technical resource to the Project Managers who manage LCRA CIP projects in the WTC Region.

Shortly after the implementation of the current year's LCRA CIP, the engineering and planning staff in Water Services, in coordination with the PMO, begin reviewing and preparing the LCRA CIP for the following Fiscal Year. This preparation includes revising and updating customer growth forecasts and using this information to establish a list of projects that will need to be completed in the next five years. Once an updated plan is prepared, the financial departments at LCRA analyze the impact of the proposed LCRA CIP on the anticipated budget. Once this has been completed the proposed LCRA CIP is heavily scrutinized and evaluated by senior management in the Water Services Business Unit as well as Corporate Finance. After this significant review and revision by multiple parties at LCRA, the LCRA CIP for all of LCRA is compiled and presented to the LCRA Board for review and approval.

The LCRA CIP Development process is a robust process that involves all levels of staff in Water Services and Corporate.

Q. WAS THE FY 2007 CAPITAL IMPROVEMENT PLAN, SUBSEQUENTLY UPDATED BY ANOTHER STUDY?

A. Yes, LCRA retained PBS&J to prepare an updated Capital Improvements Plan and Impact Fee Calculation Study.

Q. CAN YOU IDENTIFY WHAT HAS BEEN MARKED AS EXHIBIT KP-4?

A. Yes, that is a true and correct copy of the WTC Regional Water System: Capital Improvements Plan and Impact Fee Calculation for Development Between 2006 and 2015, dated June 2006 ("2006 Impact Fee Study") and prepared by PBS&J for LCRA. This 2006 Impact Fee Study provided the latest project information and projected costs for regional water improvements in the WTC Regional Water System during FY 2007.

Q. WERE THE PROJECTS AND PROJECT COSTS IDENTIFIED IN THE 2006 IMPACT FEE STUDY USED TO UPDATE THE LCRA CIP FORECAST FOR PURPOSES OF DEVELOPMENT OF THE COST OF SERVICE STUDY?

A. Yes, I understand that the 2006 Impact Fee Study was used in the development of the debt service information that was used to develop the rates that were ultimately approved by the LCRA Board.

Q. ARE YOU FAMILIAR WITH THE PROJECTS LISTED IN EXHIBIT SK-24?

A. Yes, those were generally the water system upgrade projects that were identified in the 2006 Impact Fee Study as well as anticipated projects that would be constructed outside the period

analyzed in this study (i.e. after 2015). They were generally categorized by: 1) Raw Water and Treatment Projects, 2) Distribution and Storage Projects – Bee Cave, 3) Distribution and Storage Projects – Dripping Springs, 4) Treatment and Distribution – Pedernales (though, I would note there were no projects planned for construction during the subject fiscal years), and 5) Internal Retail Facilities.

Q. CAN YOU BRIEFLY DESCRIBE THE *RAW WATER AND TREATMENT PROJECTS* THAT WERE PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010?

A. The Raw Water and Treatment Project called the Uplands Interim Improvements on Exhibit SK-24, was needed to reconfigure the clarifier to increase the hydraulic capacity. It was under construction at the time of the rate increase and deemed necessary to accommodate the immediate growth on the System to meet peak day demands.

Next was a major expansion of the Uplands WTP to 20.0 mgd (Item WTC-W3), which was necessary to meet expected growth on the System for approximately four years.

Q. PLEASE ELABORATE ON THE NEED FOR EXPANSION OF THE UPLANDS WTP TO 20.0 MGD?

A. As shown on Exhibit KP-2, prior expansions of the Uplands WTP were occurring approximately every three years to meet required growth and customer demands. These incremental expansions were disruptive to the neighborhood and challenging to operations staff, due to ongoing construction activities.

The expansion to 20.0 mgd was intended to get ahead of the growth curve and maximize the capacity that could be built on this site while reducing the investment (in terms of capital and long term operations and maintenance costs) on a per million gallons of treatment basis. Additionally, early studies of this plant site had indicated that the maximum capacity that could be located here was only about 12.0 mgd, hence this 20.0 mgd expansion was uniquely designed to meet the challenges of the site layout and maximize the ultimate capacity of the WTP.

Expanding this WTP site to 20.0 mgd was more cost effective than building infrastructure to site a completely new water treatment plant at a different location. This was due to the existing location of the raw water intake, existing capacity in the raw water transmission main, ownership rights-of-way from Lake Austin to the site, existing land area at the site for the expansion, and connection at the WTP site to major transmission mains conveying water from the WTP to the various distribution systems.

Q. CAN YOU BRIEFLY DESCRIBE THE NEXT *RAW WATER AND TREATMENT PROJECT*?

A. Yes. The next project (WTC-W10) on Exhibit SK-24 was a plan to acquire a plant site near Lake Travis along with a raw water intake site location. This project was planned and necessary due to site layout constraints at the Uplands WTP site and continued growth in water demand from WTC Regional water customers. At the time, our team was evaluating locations on Lake Travis to site a new deep raw water intake and a nearby parcel of land of up to 40 acres to construct the new WTP. This WTP will provide increased supply reliability, as it will operate in conjunction with the existing Uplands WTP. These estimated costs are reasonable, given the price of land and rights-of-way in this area at the time the costs were developed.

Q. CAN YOU BRIEFLY DESCRIBE THE *DISTRIBUTION AND STORAGE PROJECTS – BEE CAVE* THAT WERE PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010?

A. Yes. The first project in this section that was anticipated during the time frame in question is the 1280 Elevated Storage Tank ("EST") on Highway 71 (WTC-W22 on Exhibit SK-24). This project was necessary to provide reliable water supply to the high growth corridors along Highway 71 in the Bee Cave area as well as provide more reliable elevated storage for existing customers on the 1280 N pressure plane.

The next two projects, (WCT-W23 and WCT-W24) on Exhibit SK-24 both involve facilities to convey water into and out of the 1280 EST. In addition these two projects provide water conveyance to customers along Highway 71 west of the City of Bee Cave. The project called Upgrade BCW PS (WCT-W23) includes upgrades to the Bee Cave Pump Station ("BCPS") to pump water from the 1080 pressure plane into the new 1280 EST and to customers out Highway 71. The second project 20/24-in TM to Hwy 71 EST (WTC-W24) is a transmission main project to convey water from the BCPS to new customers out Highway 71. LCRA participated in upsizing this line to ensure that it would have enough capacity to convey water to the future 1280 EST, new customers adjacent to Highway 71, and to convey water back to the System from a proposed future new WTP (as described in the previous question, project WTC-W10).

Q. CAN YOU BRIEFLY DESCRIBE THE *DISTRIBUTION AND STORAGE PROJECTS – DRIPPING SPRINGS* THAT WERE PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010?

A. The first project in this category that was anticipated between FY 2007 and FY 2010 was the 1308 EST at the County Line (WTC-W27 on Exhibit SK-24). This project anticipated the construction of a new EST to replace the existing 1308 Standpipe. The new EST was sized to

meet the growing needs of this pressure plane which at the time this plan was developed were quickly overwhelming the standpipes ability to serve.

The next three projects, WTC-W28 and two labeled "added" in Exhibit SK-24 involve distribution piping improvements in the old HCWSC portions of the WTC Regional Water System to improve reliability to existing customers and provide for some future growth in the area along FM 1826.

The projects Upgrade 1308 CLPS (WTC-W31) and Upgrade CPLS – 1800 to 3600 gpm (WTC-W33) are pumping expansion projects at the LCRA County Line Pump Station ("CLPS") site. This site houses two pump stations to convey water to two pressure planes in the southern portion of the WTC Regional Water System's service area to provide for growth in this region of the System.

The next project is the completion of the Hamilton Pool Road pipeline and associated facilities (Hamilton Pool Line, Tank & BCW PS, WTC-W34).

The remaining projects in the Distribution and Storage Projects – Dripping Springs category all involve reimbursements to developers for distribution facilities they constructed and conveyed to LCRA. In most cases, the developers construct the facilities to bring WTC Regional Water System service to their development and, by contract, LCRA reimburses the developers for all or part of the facilities as the development adds customers to the System. The costs forecast in the CIP are related to the anticipated growth of the specific development.

Q. CAN YOU BRIEFLY DESCRIBE THE *INTERNAL RETAIL FACILITIES* THAT WERE PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010?

A. It is my understanding that this was an estimate of costs related to the expansion of the distribution system to serve projected new retail customers.

Q. ARE YOU ALSO FAMILIAR WITH THE PROJECTS LISTED IN EXHIBIT SK-27?

A. Yes, these were the wastewater system upgrade projects that were identified in LCRA's FY 2007 CIP. Most of these projects were originally identified during the development of the June 2001 Capital Improvements Plan and Impact Fee Calculation for the WTC Regional Wastewater System.

Q. CAN YOU BRIEFLY DESCRIBE THE *WASTEWATER PROJECTS* THAT WERE PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010?

A. Yes. The first two projects, Lake Pointe WWTP Blower/Aeration Improvements, 525k gpd to 675k gpd and Lake Pointe Noise and Odor Abatement are related to expansions and

improvements to the Lake Pointe WWTP. The first project is the final expansion of the WWTP at this site (as discussed previously in my testimony and referred to in the wastewater discharge permit as the "Interim Phase II"). The second project involved implementation of noise and odor abatement projects at the WWTP site and in the collection system.

The next two projects involve upgrading the Bee Cave Regional Lift Station ("BCRLS") located behind the Shops at the Galleria commercial development. The first project, Bee Cave Regional Lift Station, Ph. II Expansion, involves upgrading the pumping capacity at the BCRLS. The second, Bee Cave Regional Force Main under Bee Cave Rd, involves improvement to the conveyance facilities from the BCRLS to the Lake Pointe WWTP.

The next three projects, all anticipated to begin in FY 2010, are regional wastewater gravity interceptors to bring regional wastewater service to areas within LCRA's WTC Regional Wastewater System's service area that currently do not have access to the System. Future WW Interceptors "C", "D", and "E" generally expand the wastewater system from west of the Spanish Oaks subdivision to areas on Hamilton Pool Road within the City of Bee Cave's ETJ.

The last project on the list, 100-ac-ft Effluent Holding Bohl's Pond at Reg WWTP involved preparation of the site where the next WWTP to serve the WTC Regional Wastewater System will be located. As discussed previously in my testimony, the LCRA has a site for a new WWTP to provide wastewater service to the System in conjunction with the existing LP WWTP. This project in the CIP included some preliminary site preparation work for the future WWTP site.

Q. IN YOUR OPINION, WAS THERE SUFFICIENT DATA AVAILABLE DURING THE PLANNING FOR THESE PROJECTS TO ALLOW FOR A REASONABLE ESTIMATE OF THE COST OF THE PROSPECTIVE WATER AND WASTEWATER SYSTEM IMPROVEMENTS AND THEIR TIMING?

A. Yes. The projects in LCRA's CIP were based on planning studies performed over the years. As part of each of these planning studies, LCRA and its consultants prepared estimates of probable cost for the projects based on engineering judgment and actual costs from contractor bids on similar historical projects. Estimates of Probable Cost have a time factor associated with them (i.e. the estimates in the wastewater impact fee study are based on costs in 2001). Common practice in engineering, in the absence of more recent cost data, is to update project costs using cost indexes like the ENR Construction Cost Index. These indexes are based on costs of construction industry and nationwide and are a good tool for updating costs taking into account the state of the construction industry.

Timing of the improvements was based on the need for the expansion or enhancement. At the time the planning studies were performed, a "current state" of the customer base is known and forecasts were made regarding future growth. As previously discussed, the LCRA CIP process includes re-evaluation of system needs each year as part of the planning for the next year's LCRA CIP. Therefore, the planning studies provide an expected growth path (in terms of costs and timing of facilities) at a given point in time and each year the assessments are made as to the actual growth of the system and rate of growth of the system and the "point in time" plan developed previously is updated to reflect actual growth, actual needs and updated costs.

Q. IN SUMMARY, IS IT YOUR OPINION THAT THE WATER AND WASTEWATER CAPITAL IMPROVEMENT PROJECTS, LISTED IN EXHIBITS SK-24 AND SK-27, AND PLANNED FOR CONSTRUCTION DURING FY 2007 THROUGH FY 2010 WERE AT THE TIME OF THE RATE INCREASE REASONABLY PLANNED AND NECESSARY TO IMPROVE THE WTC REGIONAL SYSTEMS FOR THE BENEFIT OF THE CUSTOMERS AND EXPECTED FUTURE GROWTH?

A. Yes. At the time of the rate increase in August 2007, these projects were necessary to provide reliable water and wastewater service to the customers of the WTC Regional Water and Wastewater Systems consistent with regulatory requirements and industry standards. They were based on sound engineering planning studies that had been updated when necessary to account for actual growth in the system and more up to date information regarding growth rate and construction cost environment.

VI. CHALLENGES IN OPERATING AND EXPANDING THE WTC REGIONAL WATER AND WASTEWATER SYSTEMS

Q. ARE YOU FAMILIAR WITH TCEQ'S RULES REGARDING WATER AND WASTEWATER FACILITIES AND THEIR OPERATIONS?

A. Yes.

Q. PLEASE DISCUSS ANY RECENT FAILURES OR VIOLATIONS OF SIGNIFICANCE OF TCEQ RULES BY THE SYSTEMS.

A. The LCRA WTC Regional Water and Wastewater Systems are reliable, well operated systems that improve the quality of life for their customers through the delivery of clean water and the treatment and safe disposal of wastewater. That being said, there are time that the system fails and LCRA must take immediate steps to correct the failures.

The following incidents with regards to WTC Regional Water and/or Wastewater System operations were reported to the TCEQ.

On January 11, 2005, the maximum level for total coliform in the samples taken from the water distribution system was exceeded in two samples. TCEQ rules allow for no more than one positive total coliform sample per month. LCRA believes this was due to a sampling error, but as required we posted public notice of the violation. It should be noted that a positive total coliform sample does not necessarily mean that disease causing pathogens are in the water system and all repeat samples were found to be negative for total coliform.

The WTC Regional Water System has had two occasions to issue boil water notices in recent history: June 13, 2006 and June 17, 2006. Boil water notices are issued as a precaution whenever parts of a water system lose pressure (such as when a line breaks) but they do not necessarily mean that a violation has occurred.

The notice on June 17, 2006, was due to a broken pipe that caused dewatering of localized portions of the water system. This failure was immediately corrected and the boil water notice lasted less than one day.

The June 13, 2006 boil water notice resulted from a failure of the large electrical transformer at the raw water intake that provides raw water to the Uplands WTP. Due to the location of the transformer and the size of the transformer, it took two days to complete the repairs at the intake. Much of the time it took to repair facility involved locating an appropriate transformer, transporting it across the state to the site and getting it down the steep, narrow, winding access road to the intake site. Repairs were completed on June 15th and the WTP was put back into service providing water to the System. After flushing the system and sampling throughout the System, the System was found to be back in compliance and the boil water notice was lifted on June 16th.

Two water quality noncompliance notifications were reported to TCEQ as a result of a failure at one of the LCRA wastewater lift stations in Lake Pointe subdivision. The overflows were due to an electrical problem at the lift station. It is LCRA's belief that a lightning strike at or in the vicinity of the lift station damaged components of the electrical system. The first occurrence was April 22, 2006. Upon learning of the overflow, LCRA restored power to the lift station and remediated the spill. After the second occurrence on April 27, 2006, it was determined that the electrical system had some unforeseen electrical shorts and the components were replaced. This appears to have solved the unforeseen deficiencies that lead to the second overflow.

Lastly, LCRA has experienced a number of breaks in our wastewater effluent piping system. The system began experience periodic failures of the pipe delivering treated effluent to the Spanish

Oaks Golf Course for use in watering the golf course. The line breaks began to occur in 2004 and were small and few in number. In recent years, the frequencies of the failures of this pipe have increased to a point where LCRA and the Spanish Oaks Golf Course are evaluating options to alleviate this condition. These breaks result in a small amount of unauthorized discharge of high quality treated effluent (5/5/2 permit limits) and must be reported to the TCEQ. However, none of the line breaks resulted in discharges that negatively impacted the environment or led to human health issues

Q. HAS LCRA INSTITUTED MEASUSURES TO PROTECT AGAINST THESE TYPES OF FAILURES OR VIOLATIONS IN THE FUTURE?

A. Yes, LCRA has instituted measures to protect against these types of failures or violations in the future where possible. With respect to line breaks, equipment failures, and treatment process breakdowns, LCRA continues its diligent work to maintain facilities and look for signs of impending failure of components which can lead to treatment breakdowns. However, these types of system failures can never fully be eradicated because water and wastewater systems and their components occasionally fail. This is no different for LCRA or any other water and/or wastewater provider. All we can do is remain diligent in our maintenance and mindful of signs of impending failure of a facility component (i.e. valve, pipe, etc.)

With respect to the transformer failure at the Upland WTP's raw water intake that caused the extended outage in 2006, LCRA has take steps to minimize the potential for this occurring again. As part of the 20.0 mgd expansion at the WTP, a second raw water intake was sited next to the existing intake. In addition, redundant transformer capacity was incorporated into the design of the electrical power distribution at the raw water intake site.

As for the increased breaks in the effluent water delivery system near Spanish Oaks Golf Course, the LCRA has evaluated the problems and prepared a Capital Improvements Project to alleviate the pressure/pipe failure problems in this part of our effluent disposal system.

Q. ARE THERE ANY SPECIAL CHALLENGES IN BUILDING NEW FACILITIES IN SUBURBAN ENVIRONMENTS, SUCH AS PORTIONS OF THE WTC REGION SERVICE AREA?

A. As previously discussed in my testimony, the WTC Regional Water System service area has several distinct challenges in related to construction and operation of the water system. These same challenges impact wastewater system construction and operation as well. Challenges previously enumerated include: 1) high peak demands created by high water use per connection, 2) challenging environment for construction including rocky soils and large changes in elevation,

3) extensive areas of endangered species habitat, and 4) large geographic area served with wide variability in population densities served.

In addition to these factors, the fact that many of the existing facilities that LCRA operates to serve the WTC Regional Water and Wastewater Systems are in suburban environments makes it challenging to operate and expand these facilities. For example, the numerous expansions at the Uplands WTP impact the neighborhoods in the area of the WTP and raw water intake (namely Lake Pointe and Uplands subdivisions) as well as traffic in the area. Likewise, expansion work at the LP WWTP involves heavy construction in the middle of a built-out neighborhood which includes an elementary school in close proximity. These factors lead to challenging construction projects that have to be mindful of the health, safety and comfort of the local facility neighbors.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

KP-1

Education

M.S., Civil and Environmental Engineering, Cornell University, 1995
B.S., Civil Engineering, Texas A&M University, 1989

Registration

Professional Engineer, 1997 (Texas)

Experience

Mr. Payne is a Senior Engineer for Water and Wastewater Engineering and Planning at the Lower Colorado River Authority (LCRA). Prior to joining the LCRA, Mr. Payne worked as a consulting engineer in Austin for fourteen years. Mr. Payne's background is in water resources and systems analysis, water and wastewater infrastructure planning and design, and stormwater management. His expertise includes water/wastewater system analysis, planning, permitting and design; water distribution system analysis; computer modeling and analysis of large river and reservoir systems; water rights evaluation; computer modeling of groundwater/surface water interaction; hydraulic and hydrologic systems modeling; stormwater management; and analysis of raw water transmission facilities.

Mr. Payne's primary duties at LCRA are as the senior engineer for the West Travis County Regional Water and Wastewater System (WTC Region). As the engineer for WTC Region, he oversees the capital improvements plan development in the region, provides oversight for development in the region, and assists the LCRA WTC Regional Manager in long- and short-range planning and development in the WTC Region.

LCRA Water/Wastewater Systems Engineering

West Travis County Regional Water and Wastewater System. Regional Engineer. General engineering support of the LCRA West Travis County Regional Water and Wastewater System including: oversight of all development activities in the region, support of LCRA water and wastewater operations staff in trouble shooting system performance issues, development of the LCRA Board approved Capital Improvements Plan (CIP) (annually reviewed and updated) for the region, engineering support to the LCRA Project Management Office on CIP projects constructed in the region, and support of the LCRA WTC Region Manager in long- and short-range planning and development in the WTC Region.

LCRA Capital Improvements Planning (CIP). Regional Engineer. On going planning activities that support the long-term operation of the WTC Regional Water and Wastewater Systems include:

(1) Review and update of predicted future service needs within the WTC water and wastewater systems.
(2) Evaluation of existing system component capacities (i.e. wastewater lift stations, wastewater collection systems, wastewater treatment plants, water transmission mains, water storage, water treatment plants, and water booster pump stations) and comparison of capacities to expected growth projections. These evaluations forecast the need for expansion of existing facilities and/or needs for additional facilities. These evaluations are performed using water modeling programs and other analysis tools.
(3) Development of future projects needed to ensure reliable water and wastewater service for the existing and future customers of the WTC Regional System.

This planning is used by LCRA to develop long-range master plans for specific utility systems and to develop and update impact fee studies per Chapter 395 of the Texas Local Government Code. In