

Control Number: 33844



Item Number: 134

Addendum StartPage: 0

SOAH DOCKET NO. 473-07-2304 PUC DOCKET NO. 33844

§ §

\$ \$ \$ \$ \$

8

APPLICATION OF LCRA TRANSMISSION SERVICES CORPORATION TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A 138-KV TRANSMISSION LINE IN KERR COUNTY D. 473-07-2304 NO. 33844 2007 MAY 17 PM 1: 09 BEFORE THE STATE OFFICERY COMMISSION

OF

ADMINISTRATIVE HEARINGS

DIRECT TESTIMONY AND EXHIBITS

OF

ROB R. REID

ON BEHALF OF

APPLICANT LCRA TRANSMISSION SERVICES CORPORATION

May 17, 2007

SOAH DOCKET NO. 473-07-2304 PUC DOCKET NO. 33844

DIRECT TESTIMONY OF ROB R. REID

TABLE OF CONTENTS

I.	Introduction	3
II.	Purpose of Testimony	5
III.	Environmental Assessment and Routing Study	6
IV.	Information Addressing the Commission's CCN Application and Issues of Community Values, Recreational and Park Areas, Historic and Aesthetic Values, and Environmental Integrity	4
V.	Additional Commission Routing Considerations	20
VI.	Summary and Conclusion	2!

EXHIBITS INDEX

Exhibit RRR-1 - Resume of Rob R. Reid

Exhibit RRR-2 - Letter from Texas Parks and Wildlife Department to Brian Almon, P.E. dated April 5, 2007

SOAH DOCKET NO. 473-07-2304 PUC DOCKET NO. 33844

DIRECT TESTIMONY OF ROB R. REID

.

1		I. <u>INTRODUCTION</u>
2		
3	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
4	A.	My name is Rob R. Reid. My business address is: 6504 Bridge Point Parkway, Suite
5		200, Austin, Texas, 78730.
6		
7	Q.	BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?
8	A.	I am employed by PBS&J as Vice President and Senior Project Director.
9		
10	Q.	PLEASE DESCRIBE THE BUSINESS OF PBS&J.
11	A.	PBS&J is a well-established consulting firm that provides engineering, planning, envi-
12		ronmental, and program management services with a staff of approximately 3,800 in 65
13		domestic and international offices. PBS&J employs a staff of more than 700 in Texas,
14		with offices in Austin, Dallas, Houston, San Antonio, and Tyler. Founded in 1960,
15	,	PBS&J has its corporate headquarters in Tampa, Florida. The firm provides extensive
16		services throughout the United States and its staff includes specialists in a wide variety of
17		scientific and engineering disciplines. These disciplines include civil engineering,
18		chemical engineering, environmental engineering, terrestrial and aquatic ecology, air
19		quality, meteorology, climatology, geology, surface and ground water quality, hydrology,
20		socioeconomics, land use, archaeology, and others. PBS&J offers extensive staff experi-
21		ence in the assessment of environmental impacts associated with new electric transmis-
22		sion facilities and major energy development projects. PBS&J has conducted environ-
23		mental assessments for local, state, and federal regulatory agencies, as well as for the
24		electric utility and other energy development industries.
25		

1

2

Q. PLEASE DESCRIBE YOUR EDUCATIONAL/PROFESSIONAL QUALIFICA-TIONS AND BUSINESS EXPERIENCE.

A. I received a Bachelor of Science degree in Wildlife and Fisheries Sciences from Texas
A&M University in 1975, and a Master of Science degree in Wildlife Fisheries Science
from Texas A&M University in 1977. I have worked as a full-time professional ecologist
since 1978 and have authored or co-authored over 150 technical environmental papers
and reports.

8

9 Since joining the firm in 1978 (that ultimately merged into PBS&J), I have managed or 10 participated in numerous multi-disciplinary environmental assessments for development 11 projects, including transmission lines, and have served as Project Manager for over 100 12 environmental impact assessments associated with transmission facilities. My resume is 13 attached to this testimony as Exhibit RRR-1.

14

In my present position, I am responsible for organizing, conducting, and managing various types of environmental assessment projects, and assuring that PBS&J's environmental impact assessments under my direction address the provisions and requirements of applicable regulations, guidelines, and standards of local, state, and federal agencies. I also have administrative and business development responsibilities.

20

21Q.HAVE YOU PREVIOUSLY PERFORMED WORK RELATED TO TRANSMIS-22SION LINE ADMINISTRATIVE PROCEEDINGS?

23 A. Yes, I have.

24

25 26

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS?

A. Yes, I have testified before the Public Utility Commission of Texas ("PUC" or "Commission") and the State Office of Administrative Hearings on numerous occasions.

II. <u>PURPOSE OF TESTIMONY</u>

1 2

3

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

4 Α. The purpose of my testimony is to introduce and support the document entitled "Envi-5 ronmental Assessment and Alternative Route Analysis for the Proposed Rim Rock to 6 Goat Greek 138-kV Transmission Line Project, Kerr County, Texas" (EA) and related 7 material for the proposed 138-kV transmission line between the existing LCRA TSC Rim 8 Rock Substation, the proposed LCRA TSC Goat Creek Substation, and connection to the 9 existing Ingram to Harper Road transmission line. This EA was prepared by PBS&J on 10 behalf of the LCRA Transmission Services Corporation (LCRA TSC). The EA is spon-11 sored by me and is attached as Attachment No. 2 to the Application for a Certificate of 12 Convenience and Necessity for a Proposed Transmission Line in Kerr County that was 13 filed by LCRA TSC in this docket (Application). LCRA TSC is referred to as the "Ap-14 plicant." The Application was filed at the Commission on February 20, 2007. The Ap-15 plication is publicly available at the Commission and will be offered into evidence by 16 LCRA TSC as an exhibit at the hearing on the merits.

17

18 Q. WHAT PORTIONS OF THE APPLICATION IN THIS DOCKET DO YOU 19 SPONSOR?

- A. I am sponsoring the answers to Question Numbers 18, 20, 21, 22, 23, 25, 26, and 27 on
 the Commission's CCN Application, as well as the EA (Question No. 28), Attachment 2
 to the Application. I am co-sponsoring the answer to Question Number 5 with Mr. David
 Turner and Mr. Dennis Palafox and Question Number 19 with Mr. David Turner, and I
 am co-sponsoring the answers to Question Numbers 16 and 17 with Mr. Dennis Palafox.
- 25

Q. WAS YOUR TESTIMONY AND THE INFORMATION YOU HAVE BEEN IDENTIFIED AS SPONSORING AND CO-SPONSORING PREPARED BY YOU OR BY KNOWLEDGEABLE PERSONS UPON WHOSE EXPERTISE, JUDG MENT, AND OPINIONS YOU RELY IN PERFORMING YOUR DUTIES?

30 A. Yes, it was.

IS THE INFORMATION CONTAINED IN YOUR TESTIMONY AND THE IN-1 Q. 2 FORMATION YOU ARE SPONSORING AND CO-SPONSORING TRUE AND 3 **CORRECT TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?** 4 Yes, it is. A. 5 6 III. ENVIRONMENTAL ASSESSMENT AND ROUTING ANALYSIS 7 8 WHY DID PBS&J PREPARE THE DOCUMENT ENTITLED "ENVIRON-Q. MENTAL ASSESSMENT AND ALTERNATIVE ROUTE ANALYSIS FOR THE 9 PROPOSED RIM ROCK TO GOAT CREEK 138-kV TRANSMISSION LINE 10 PROJECT, KERR COUNTY, " HEREINAFTER REFERRED TO AS THE "EN-11 12 VIRONMENTAL ASSESSMENT AND ROUTING STUDY" OR "EA"? LCRA TSC contracted with PBS&J to perform a routing study and prepare the EA for 13 A. this project. As Project Manager, I am responsible for the EA and its findings. I oversaw 14 all elements of the EA from baseline data acquisition and analysis through selection of 15 PBS&J's preferred route. 16 17 PLEASE DESCRIBE THE PURPOSE OF THE EA. 18 Q. 19 A. The objective of the EA was to select and evaluate several alternate transmission line routes and ultimately to recommend a preliminary preferred route to LCRA TSC for the 20 21 proposed project that was feasible from engineering, environmental, land use, and economic standpoints. The environmental planning process completed by PBS&J consisted 22 of a series of tasks to address the requirements of the Texas Utilities Code, the Commis-23 sion's Rules, and LCRA TSC's standard design practices, for the development of an EA 24 25 to address essential elements for a CCN Application. 26 27 Q. WHAT DOES THE EA ADDRESS? The EA provides a detailed description of the procedures and methodology followed, and 28 A. 29 the factors considered in recommending PBS&J's preferred and alternate routes to LCRA TSC. The EA specifically addresses the environmental factors that appear in Section 30 37.056(c)(4) of the Texas Utilities Code, PUC Rules, and the Commission's Application 31

1		Form. LCRA TSC provided the information contained in Section 1 of the EA. LCRA
2		TSC also provided information for sections 6.1.1.2 – Landowner Input, 6.1.1.3 – Internet
3		Web Site, 6.1.3 – LCRA TSC Review, and 6.1.5 – Preferred Route and Substation.
4		
5	Q.	WHAT ENVIRONMENTAL INFORMATION DID THIS REPORT CONTAIN?
6	À.	This report included information on physiography, topography, geology, surface water,
7		ground water, soils, prime farmland, vegetation, wildlife, aquatic ecology, endangered
8		and threatened species, recreationally and commercially important species, sensitive
9		habitats, socioeconomics, land use, habitable structures, recreation facilities/parks, avia-
10		tion facilities, areas with high aesthetic value, radio towers, and cultural resources.
11		
12	Q.	WHO PARTICIPATED IN THE PREPARATION OF THIS EA?
13	А.	A team of professionals under my direction, representing various environmental disci-
14		plines, was assembled from the PBS&J staff and was involved in data acquisition, routing
15		analysis, and environmental impacts assessment of the subject project.
16		
17	Q.	PLEASE DESCRIBE THE STEPS TAKEN IN PREPARING THE EA.
18	A.	The tasks included scoping and study area delineation, agency contact, data collection,
19		constraint mapping, preliminary alternative route identification, review and adjustment of
20		alternative routes following field review, consideration of open house input, alternative
21		route analysis and impact assessment, and the recommendation by PBS&J of preferred
22		and alternate routes to LCRA TSC.
23		
24		Scoping and Study Area Delineation
25		Project scoping and study area delineation required the selection of a study area. This
26		area needed to encompass both project termination points (the existing LCRA TSC Rim
27		Rock Substation and the existing LCRA TSC Harper Road to Ingram 138-kV transmis-
28		sion line) and include a large enough area within which numerous alternative routes
29		could be delineated.

1 Regional Inventory and Data Collection

Data used by PBS&J in the delineation and evaluation of alternative routes were drawn 2 3 from a variety of sources, including published literature (documents, reports, maps, aerial photography, etc.) in house data from prior projects, and information from local, state, 4 and federal agencies. Recent aerial photography, various scale U.S. Geological Survey 5 (USGS) topographic maps, Texas Department of Transportation (TxDOT) county high-6 way maps, and ground reconnaissance surveys were used throughout the selection and 7 evaluation of alternative routes. Ground reconnaissance of the study area was utilized for 8 both refinement and evaluation of alternative routes. Ground reconnaissance was mostly 9 conducted along public roads. No PBS&J staff entered private property. The data collec-10 tion effort, although concentrated in the early stages of the project, was an ongoing proc-11 ess and continued up to the point of final route selection. 12

13

14

Constraint Mapping

15 Since a number of potential routes could be drawn to connect the termination points, a constraints mapping process was used in selecting and refining possible alternative 16 17 routes. The geographic locations of environmentally sensitive and other restrictive areas within the study area were located and considered during transmission line route delinea-18 tion. The overall impact of alternative routes has been greatly reduced by avoiding, to 19 the greatest extent reasonably possible, such existing constraints as individual residences, 20 subdivisions (depending on characteristics), airstrips, mobile irrigation systems, cemeter-21 ies, known historic and archaeological sites, wetlands, parks, churches, schools, and 22 known endangered or threatened species habitat, and by utilizing or paralleling existing 23 24 rights-of-way (ROW) and property lines where reasonable and practical.

25

26 Preliminary Alternative Route Delineation/Adjustments

Based on a review of January 25, 2005 aerial photographs, Kerr County Appraisal District property boundary maps, environmental and land use constraints, existing transportation and utility ROW, and the location of existing facilities, PBS&J (with review and assistance from LCRA TSC) delineated a network of links for the project, which combined to form numerous preliminary routes, which were examined in the field by driving along

- public roadways. Following additional environmental and engineering review by PBS&J
 and LCRA TSC, adjustments were made in the location and alignment of some links to
 further reduce potential environmental impacts.
- 4

5

Public Open-house meeting Input/Route Revisions

6 These adjusted preliminary alternatives were presented to the public during an LCRA 7 TSC public open-house meeting held May 22, 2006 at the Tally Elementary School in 8 Kerrville. Following this open-house meeting, and over the next several months, addi-9 tional revisions were made to the routes, many responding to landowner input/concerns 10 (see discussion in Application pages 16-17).

11

12

Primary Alternative Route Evaluation/PBS&J Preferred Route Recommendation

As detailed in the EA, ultimately eight alternative routes were selected for detailed analysis. These routes are shown on figures 3-1 and 4-3 (map pocket) of the EA and are the only ones evaluated and ranked in the EA. Each of the alternative routes was examined in detail from publicly accessible locations in the field and from 2005 aerial photography. They were evaluated considering a variety of environmental/land use criteria. The evaluation of each route involved inventorying and tabulating the number or quantity of each criterion along each route.

20

After PBS&J completed the environmental analysis of the primary alternative routes, a summary of the environmental evaluation (the process of which is described below) and a recommendation of a preferred and ranked alternate routes were presented to LCRA TSC. Subsequently, LCRA TSC conducted an independent evaluation of environmental, land use, engineering, construction, maintenance, operation, and cost factors, and community and landowner input, and then discussed, and selected its preferred route.

The EA conducted by PBS&J was a comparison of alternatives from a strictly environmental standpoint, based upon the measurement of 36 separate environmental and land use criteria and the consensus opinion of PBS&J's evaluators. PBS&J professionals with expertise in different environmental disciplines (e.g. wildlife biology, plant ecology, land use/planning, and archaeology) evaluated the alternative routes based upon environ1 mental conditions present along each route (augmented by aerial photo interpretation and 2 field surveys, where possible) and the general routing methodology used by PBS&J and 3 LCRA TSC. Each PBS&J staff person independently analyzed the routes and the envi-4 ronmental data. The evaluators then met as a group and discussed their independent re-5 sults. The relationship and relative sensitivity among the major environmental factors 6 were determined by the group as a whole. The group then selected a recommended pre-7 ferred route and ranked alternate routes based strictly upon the environmental data.

- 8
- 9 10

Q. WHAT DID PBS&J TAKE INTO ACCOUNT TO DETERMINE PRELIMINARY ALTERNATIVE ROUTES FOR THIS PROJECT?

11 A. PBS&J initially prepared a description of the existing environment and an environmental 12 and land use constraints map of the study area. This information was then used in con-13 junction with 2005 aerial photography and property boundary maps to delineate numer-14 ous preliminary alternative routes. These routes were selected by taking into account ex-15 isting and proposed land uses, areas of environmental concern, and the Commission's 16 rules and criteria for the routing of electrical transmission lines.

17

18 Q. WERE THE ENDPOINTS FOR THE PRELIMINARY ALTERNATIVE ROUTES 19 FIXED ENDPOINTS?

20 The southern endpoint was fixed at the existing LCRA TSC Rim Rock Substation. The A. 21 northern endpoint was fixed within a range in the sense that the new line needed to tie 22 into the existing LCRA TSC Harper Road to Ingram 138-kV transmission line between 23 the cities of Kerrville and Ingram. A portion of PBS&J's routing process was to deline-24 ate reasonable, practical alternative routes that tied into the existing Harper Road to In-25 gram transmission line, which ultimately resulted in three alternative tie points. After the preliminary alternative transmission line routes were identified, LCRA TSC identified 26 eight preliminary alternative Goat Creek Substation locations north of State Highway 27 27 28 along the preliminary alternative routes.

29

30Q.WAS LCRA TSC INVOLVED IN REVIEW OF THE PRELIMINARY ALTER-31NATIVE ROUTES?

2

1

A.

- 3
- 4

5

Q. PLEASE DESCRIBE THE STEPS TAKEN BY PBS&J IN FORMULATING THE PRIMARY ALTERNATIVE ROUTES.

Yes, LCRA TSC reviewed the preliminary routes with regard to cost, construction, engi-

neering, and ROW maintenance issues and constraints, and also conducted field reviews.

6 Following the open-house meeting (and additional meetings between landowners and A. 7 LCRA TSC), several revisions were made to the preliminary routes (see EA Section 6.1.3) and Application pages 16-17). These revisions included adding, deleting, and relocating 8 9 links. The revisions were then reviewed by PBS&J and LCRA TSC with regard to potential environmental impacts, engineering constraints, costs, landowner input, land use, and 10 11 environmental constraints. The resulting set of revised preliminary routes, following 12 LCRA TSC's input and approval, was designated as primary alternative routes. This revised collection of alternatives, the eight primary alternative routes, were then evaluated 13 14 and ranked by PBS&J, considering potential impacts to ecological, land use, aesthetics, 15 and archaeological resources.

16

17 18

Q. PLEASE DESCRIBE THE PROCESS UTILIZED IN COMPARING THE PRI-MARY ALTERNATIVES.

19 A. The evaluation of the primary alternative routes involved studying a variety of environmental factors. Each of the primary alternative routes was examined in detail in the field 20 21 at various times during 2006. The analysis of each primary alternative route involved the inventory and tabulation of the number or quantity of each environmental factor located 22 along each route (see factors identified in Table 6-1 of the EA). The number or amount 23 of each factor was determined by studying TxDOT county highway maps, 2005 aerial 24 25 photography, USGS topographic maps, property boundary maps, and field verification (where possible). The environmental advantages and disadvantages of each alternative 26 were then evaluated. A total of 36 environmental criteria were inventoried for each of the 27 28 primary alternative routes.

1Q.PLEASE DESCRIBE THE PUBLIC INPUT PROCESS YOU MENTIONED PRE-2VIOUSLY.

3 As indicated above, LCRA TSC held a public open-house meeting on May 22, 2006. A. This meeting was intended to solicit comments from citizens, landowners, and public of-4 ficials concerning the proposed project. The meeting had the objective of promoting a 5 better understanding of the proposed project, including the purpose, need and potential 6 benefits and impacts; informing and educating the public with regard to LCRA TSC rout-7 8 ing procedures, schedule, and decision-making process; and ensuring that the decisionmaking process accurately identified and considered the values and concerns of the pub-9 10 lic and community leaders.

11

Public involvement contributed both to the evaluation of issues and concerns by LCRA 12 TSC and PBS&J, and to the selection of a preferred route for the project. LCRA TSC in-13 vited landowners along the alternative routes and local elected officials to the meeting. 14 15 LCRA TSC also ran advertisements in the local newspaper stating the time, location, and purpose of the meeting. The format of the meeting followed an information station for-16 17 mat for one-on-one discussion about particular aspects of the project with interested attendees. This format was chosen to encourage more interaction from those citizens who 18 might be more hesitant to participate in a speaker-audience format. In addition, ques-19 tionnaires were collected from attendees to solicit concerns, as well as provide an evalua-20 21 tion of the information presented in the open-house meeting.

22

Q. PLEASE DESCRIBE HOW AND WHEN IN THE PROCESS PBS&J UTILIZED PUBLIC INPUT IN THE FORM OF COMMENTS OR OTHER INFORMATION FROM THE PUBLIC.

A. PBS&J utilized public input following the open-house meeting both to evaluate issues and concerns, as well as in the selection of the primary alternative routes, and ultimately, the preferred route. Public input included discussions with individuals at the open-house meeting, responses to questionnaires received both at the meeting and afterwards by mail or facsimile, and public input relayed by LCRA TSC from its many meetings and discussions with landowners.

1	Q .	DID PBS&J CONSIDER INPUT FROM GOVERNMENTAL AGENCIES?
2	A.	Yes, as discussed in Section 6.1.4 of the EA (Attachment 2 to LCRA TSC's Application
3		for this project), PBS&J solicited information and comments from a variety of state and
4		federal agencies with responsibilities in the areas of natural and cultural resources.
5		
6	Q.	PLEASE DESCRIBE HOW AND WHEN IN THE PROCESS PBS&J UTILIZED
7		THE COMMENTS AND/OR INFORMATION FROM GOVERNMENTAL
8		AGENCIES.
9	A.	PBS&J utilized comments and information from governmental agencies in the prepara-
10		tion of the existing environment sections of the EA, the constraints map, and in the selec-
11		tion and evaluation of alternative routes.
12		
13	Q.	PLEASE BRIEFLY DESCRIBE THE BASIS FOR SELECTING PBS&J'S PRE-
14		FERRED ALTERNATIVE.
15	A.	PBS&J's decision to select Route 5 as its preferred alternative was based on the following
16		advantages among the 36 objective criteria:
17		• shortest alternative route,
18		least length through woodland,
19		• utilizes 3,175 feet (ft) of existing transmission line easement (along with Routes 1, 2,
20		3, and 4),
21		• second least number of habitable structures within 300 ft (tied with Route 4, behind
22		Route 8), and
23		• least length through areas of high archaeological/historic site potential.
24		
25	Q .	WHAT DID LCRA TSC DECIDE IN ITS SELECTION OF ITS PREFERRED
26		ROUTE?
27	A.	LCRA TSC initially reviewed PBS&J's recommendations in the draft EA and Alternative
28		Route Study, followed by an individual review of each of the primary alternative routes.
29		This review was based on potential environmental impacts, land use in the area, engineer-
30		ing constraints, maintenance and construction considerations, public input/community
31		values, estimated costs, system planning, and landowner/agency concerns and prefer-

ences. Based on this review and evaluation, LCRA TSC determined that each of the primary alternative routes was a feasible and acceptable alternative from an engineering and
cost perspective. Following consideration of each of the above factors, LCRA TSC selected Route 8 as its preferred route to be filed with the Commission for this project.
Please see the testimony of LCRA TSC witness Dennis Palafox for additional information concerning LCRA TSC's selection of its preferred route.

8 Q. AMONG THE 36 OBJECTIVE ENVIRONMENTAL AND LAND USE CRITE-9 RIA, WHAT WERE THE ADVANTAGES OF LCRA TSC'S PREFERRED 10 ROUTE 8?

11 A. The advantages were:

- intermediate length and cost,
- fewest habitable structures within 300 ft of the centerline,
 - next to lowest length within upland woodlands, and
 - lowest estimated lengths within foreground visual zone of U.S. and state highways, and second lowest within foreground visual zone of park or recreational areas.

18 Q. IS LCRA TSC'S PREFERRED ROUTE ACCEPTABLE FROM AN ENVIRON 19 MENTAL PERSPECTIVE?

20 A. Yes, it is. Route 8 was ranked second overall by PBS&J's consensus evaluation.

22 23 24

7

14

15

16

17

21

25 26

IV. <u>INFORMATION ADDRESSING THE COMMISSION'S CCN</u> <u>APPLICATION AND ISSUES OF COMMUNITY VALUES,</u> <u>RECREATIONAL AND PARK AREAS, HISTORIC AND AESTHETIC</u> <u>VALUES, AND ENVIRONMENTAL INTEGRITY</u>

Q. HOW WAS THE INFORMATION COMPILED BY PBS&J USED FOR PURPOSES OF THE APPLICATION?

- A. PBS&J provided environmental and land use information for the preferred and alternative
 routes, which was used to complete several specific questions in the Application, as discussed above.
- 32

1 Q. WHERE WILL THE PROPOSED PROJECT BE LOCATED?

2 A. The preferred transmission line is located in Kerr County and extends from the existing 3 Rim Rock Substation located south of Kerrville, northwest through the proposed Goat 4 Creek Substation to the existing Harper Road to Ingram 138-kV transmission line. The 5 area traversed by the approximately eight-mile long route is in transition from rural 6 ranchland/pastureland to suburban development surrounding Kerrville. The topography 7 is generally hilly south of the Guadalupe River and generally flat to gently sloping north of the river. Land use consists mainly of residential subdivisions, rural homes, pasture-8 9 land, undeveloped woodlands, rangeland, and ranchettes. Some commercial area is lo-10 cated along and near State Highway 27 (see Application pages 5-6 for additional descrip-11 tion).

12

13 WHAT ARE PBS&J'S FINDINGS REGARDING PROXIMITY TO HABITABLE 0. 14 **STRUCTURES IN THE VICINITY OF THE PREFERRED ROUTE?**

- There are 31 habitable structures within 300 ft of the centerline of the preferred route. 15 A. 16 These structures are listed and described in Table 6-3 and shown on Figure 6-1 of the EA 17 (Attachment 2 to the Application).
- 18

19

20

Q.

ARE SOME OF THE HABITABLE STRUCTURES INCLUDED ON FIGURE 6-1 SHOWN IN GROUPS?

- 21 A. Yes. As allowed for in the instructions for Question No. 20 on the PUC CCN Applica-22 tion form, PBS&J grouped some habitable structures shown on Figure 6-1 and listed the 23 distance from the centerline to the closest habitable structure in the group in tables 6-3 through 6-10 in the EA. A number of the structures in the groups are much farther than 24 25 the distance to the closest structure in the group, but within 300 ft of the centerline.
- 26

WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO AM RADIO TRANS-27 Q. 28 **MITTERS WITHIN 10,000 FT OF THE CENTERLINE AND OTHER TYPES OF ELECTRONIC INSTALLATIONS WITHIN 2,000 FT OF THE PREFERRED** 29 30 **ROUTE?**

1	A.	No commercial AM radio transmitters are located within 10,000 ft of the centerline. One
2		electronic communication tower is located within 2,000 ft of the proposed centerline.
3		This structure is listed in Table 6-3 and shown on Figure 6-1 of the EA (Attachment 2 to
4		the Application).
5		
6	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO FEDERAL AVIATION
7		ADMINISTRATION (FAA) REGISTERED AIRSTRIPS OR AIRPORTS WITHIN
8		20,000 FT OF THE CENTERLINE OF THE PREFERRED ROUTE?
9	A.	No FAA-registered airports are located within 20,000 ft of the centerline.
10		
11	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO PRIVATE AIRSTRIPS
12		WITHIN 10,000 FT, AND HELIPORTS WITHIN 5,000 FT, OF THE CENTER-
13		LINE OF THE PREFERRED ROUTE?
14	A.	No private airstrips are located within 10,000 ft of the proposed centerline. One private
15		heliport is located within 5,000 ft of the centerline and it is listed as feature No. 45 and
16		shown on Figure 6-1 of the EA (Attachment 2 to the Application). It was inadvertently
17		omitted from Table 6-3 for the preferred route (Route 8), as well as Table 6-7 (Route 3),
18		Table 6-8 (Route 4), and Table 6-10 (Route 7) of the EA (Attachment 2 to the Applica-
19		tion). The heliport (map feature No. 45) is approximately 4,700 ft southwest of routes 8,
20		3, 4, and 7, and should be shown as such on tables 6-3, 6-7, 6-8 and 6-10.
21		
22	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO AREAS IRRIGATED BY
23		TRAVELING IRRIGATION SYSTEMS IN THE VICINITY OF THE PRE-
24		FERRED ROUTE?
25	A.	The preferred route crosses no pasture or cropland known to be irrigated by traveling irri-
26		gation systems (either rolling or center-pivot types).
27		
28	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO COASTAL MANAGE-
29		MENT ZONE IMPACTS IN THE VICINITY OF THE PROPOSED PROJECT?
30	A.	The proposed project is not located within, either in whole or in part, the Coastal Man-
31		agement Program boundary as defined in 31 T.A.C. §503.1.

1

PLEASE DESCRIBE THE PERMITS OR APPROVALS REQUIRED TO CON-**Q**. 2 STRUCT THE PROPOSED PROJECT.

Permits/approvals required include: 3 A.

4 5 6 7		• A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and a Notice of Intent (NOI) will be submitted to the Texas Commission on Environmental Quality (TCEQ) under the TPDES program. The SWPPP will be monitored in the field.
8 9 10		• Nationwide Permits under Section 404 of the Clean Water Act may be required from the U.S. Army Corps of Engineers, if wetlands or waters of the U.S are disturbed.
12 13 14		• LCRA TSC will obtain clearance from the Texas Historical Commission (THC) with regard to potential impacts to cultural resources, prior to construction.
15 16 17		• If necessary, prior to construction LCRA TSC will coordinate with the U.S. Fish and Wildlife Service (FWS) with regard to potential impacts to federally listed threatened and endangered species.
19 20 21		• Permits will be obtained from the Texas Department of Transportation (TxDOT) for crossing any state-maintained roadways.
22		These permits/approvals will be obtained following Commission approval of a transmis-
23		sion line route and prior to initiating construction.
24		
- ·		
25	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF
25 26	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER-
25 26 27	Q.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE?
25 26 27 28	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway
25 26 27 28 29	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory,"
25 26 27 28 29 30	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park
25 26 27 28 29 30 31	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre
25 26 27 28 29 30 31 32	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre El Coto de los Rincones Preserve owned by the Natural Area Preservation Association is
25 26 27 28 29 30 31 32 33	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre El Coto de los Rincones Preserve owned by the Natural Area Preservation Association is located approximately 935 ft north of the preferred route. It is shown on Figures 3-1 and
25 26 27 28 29 30 31 32 33 34	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre El Coto de los Rincones Preserve owned by the Natural Area Preservation Association is located approximately 935 ft north of the preferred route. It is shown on Figures 3-1 and 6-1, and in Table 6-3 of the EA (Attachment 2 to the Application). The Guadalupe River,
25 26 27 28 29 30 31 32 33 34 35	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre El Coto de los Rincones Preserve owned by the Natural Area Preservation Association is located approximately 935 ft north of the preferred route. It is shown on Figures 3-1 and 6-1, and in Table 6-3 of the EA (Attachment 2 to the Application). The Guadalupe River, portions of which are used for recreational purposes, would also be spanned by the pre-
25 26 27 28 29 30 31 32 33 34 35 36	Q. A.	WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO THE NUMBER OF PARKS AND RECREATIONAL AREAS WITHIN 1,000 FT OF THE CENTER- LINE OF THE PREFERRED ROUTE? Based on a review of U.S. Geological Survey topographic maps, TxDOT county highway maps, the Texas Parks and Wildlife Department's "Texas Outdoor Recreation Inventory," recent aerial photography, and a limited field reconnaissance, PBS&J identified one park or recreation area located within 1,000 ft of the preferred route centerline. The 138-acre El Coto de los Rincones Preserve owned by the Natural Area Preservation Association is located approximately 935 ft north of the preferred route. It is shown on Figures 3-1 and 6-1, and in Table 6-3 of the EA (Attachment 2 to the Application). The Guadalupe River, portions of which are used for recreational purposes, would also be spanned by the pre- ferred route (see page 26 of the Application for additional description). The language in

only be considered as one because in my opinion, the Guadalupe River does not meet the PUC definition of a park/recreation area.

3

1

2

4

Q.

- 5
- 6
- 7

ON HISTORICAL AND AESTHETIC VALUES FROM THE PROPOSED PRO-JECT, INCLUDING HISTORICAL AND ARCHAEOLOGICAL SITES WITHIN 1,000 FT FROM THE CENTERLINE OF LCRA TSC'S PREFERRED ROUTE?

WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO POTENTIAL IMPACTS

- A. There are no known or recorded historical or archaeological sites located within 1,000 ft
 of the preferred route centerline. This information was determined by a literature review
 and records search at the Texas Historical Commission and the Texas Archeological Research Laboratory at the University of Texas at Austin.
- 12

13 The study area exhibits a moderate to high level of aesthetic quality. Construction of the 14 proposed transmission line could have both temporary and permanent aesthetic effects. 15 Temporary effects would include views of the actual construction (assembly and erection of the structures) and any clearing of the ROW. Where clearing is required in wooded 16 17 areas, the brush and wood debris could have a temporary negative impact on the local 18 visual environment. Permanent impacts from the project would be the views of the struc-19 tures and lines themselves as well as views of cleared ROW (see EA Section 5.2.5 for 20 additional discussion of aesthetic impacts considering a visual foreground analysis). 21 PBS&J determined that the proposed line along the preferred route (Route 8), along with 22 Route 4, would have the least length within the foreground visual zone of state highways.

23

24Q.WHAT ARE PBS&J'S FINDINGS WITH RESPECT TO IMPACTS ON ENVI-25RONMENTAL INTEGRITY FROM THE PROPOSED PROJECT?

A. The project will cause only short-term impacts to soil, water, and ecological resources. The project is not expected to adversely impact populations of any federally-listed endangered or threatened plant or animal species, although there is some possibility of affecting potential habitat of the federally endangered golden-cheeked warbler and blackcapped vireo. The study area is within the breeding range of the endangered goldencheeked warbler and black-capped vireo. Potential habitat for these species exists within the study area. Potential habitat for the golden-cheeked warbler in the study area was observed during field trips conducted by PBS&J. Prior to constructing the project, LCRA TSC will coordinate with the USFWS to determine the need to conduct surveys to identify potential black-capped vireo and golden-cheeked warbler habitat along the approved route. The federally endangered Tobusch fishhook cactus is documented from the study area. Prior to construction, a ground survey will be necessary to verify if any individuals of this species are present along the approved route.

- 8
- 9 10

11

Q. FOLLOWING COMPLETION OF PBS&J'S EA IN FEBRUARY 2007, DID THE PROPOSED PROJECT RECEIVE ANY ADDITIONAL CORRESPONDENCE FROM ANY AGENCIES?

- A. Yes. Upon filing the Application with the PUC, LCRA TSC forwarded a copy of
 PBS&J's EA to the Texas Parks and Wildlife Department (TPWD). TPWD provided a
 comment letter to Mr. Brian Almon, P.E., with the PUC dated April 5, 2007. This letter
 is attached as Exhibit RRR-2 to my testimony.
- 16

Q. ON PAGE 5 OF ITS APRIL 5, 2007 LETTER (ATTACHED AS EXHIBIT RRR-2) TPWD DISCUSSES THE FEDERALLY ENDANGERED TOBUSCH FISHHOOK CACTUS. WHAT ARE YOUR COMMENTS CONCERNING THIS SPECIES?

- A. As I stated above, because this plant species is known from the study area, I believe a
 survey for the species should be conducted along the approved route prior to construction. If any individuals of the species are discovered, coordination with the U.S. Fish and
 Wildlife Service (USFWS) should occur.
- 24

Q. DO YOU HAVE PRIOR EXPERIENCE WITH THIS SPECIES RELATED TO ELECTRIC TRANSMISSION LINE CONSTRUCTION?

A. Yes. An individual Tobusch fishhook cactus was discovered in the prior Turtle Creek to
Rim Rock Project. In consultation with the USFWS, the plant was fenced off from construction equipment to avoid impacts.

1	Q.	ON THE BOTTOM OF PAGE 5 AND TOP OF PAGE 6 OF ITS APRIL 5, 2007
2		LETTER, TPWD ADDRESSES ITS RECOMMENDATIONS CONCERNING
3		THE ENDANGERED GOLDEN-CHEEKED WARBLER AND BLACK-CAPPED
4		VIREO. HOW DO YOU RESPOND?
5	A.	I agree that LCRA TSC should coordinate with the USFWS concerning the necessity for
6		any surveys and/or construction limitations.
7		
8	Q.	DO YOU HAVE ANY GENERAL COMMENTS CONCERNING TPWD'S COM-
9		MENT LETTER FOR THE PROPOSED PROJECT?
10	A.	Yes. TPWD's comments focus on a single issue - fish and wildlife resources. While all
11		of the considerations stated in the letter are reasonable concerns, none constitute either a
12		fatal flaw or limiting condition to construction of the project along any of the alternative
13		routes. Fish and wildlife resources are one of a number of issues LCRA TSC and PBS&J
14		have considered in alternative route delineation, and balanced in the selection of the pre-
15		ferred route.
16		
17		V. ADDITIONAL COMMISSION ROUTING CONSIDERATIONS
18		
19	Q.	HOW HAS THE PBS&J ANALYSIS CONSIDERED SUCH FACTORS AS 1) USE
20		AND PARALLELING OF EXISTING COMPATIBLE RIGHTS OF WAY, 2) USE
21		OF VACANT POSITIONS ON EXISTING MULTIPLE CIRCUIT TRANSMIS-
22		SION LINES, AND 3) PROPERTY BOUNDARIES OR OTHER NATURAL OR
23		CULTURAL FEATURES?
24	А.	In consideration of PUC Rule §25.101(b)(3)(B), PBS&J's route delineation and route
25		evaluation process that resulted in the selection of the preferred route considered utilizing
26		and paralleling existing compatible ROW and property boundaries where practical and
27		reasonable. Approximately 24% of LCRA TSC's preferred route parallels existing com-
28		patible ROW and approximately 33% parallels property lines not already adjacent to ex-
29		isting ROW. Areas of high topographic relief, existing residential development, wet-
30		lands, floodplains, recorded cultural resource sites, and riparian areas were avoided where

reasonable and possible. The use of vacant positions on existing multiple circuit transmission lines was not an option for this project.

2 3

1

4

5

Q. HAVE AN ADEQUATE NUMBER OF ALTERNATIVE ROUTES BEEN FOR-MULATED TO CONDUCT A PROPER EVALUATION?

6 A. Yes. Given the distance between the project endpoints and the nature of the study area, I 7 believe that eight alternative routes provide an adequate number of alternative routes for 8 evaluation. There are 25 generally forward progressing routes possible from the set of links or segments established for the proposed project. Data for the environmental/land 9 use criteria were collected for each link and all of the links were used to develop the al-10 ternative routes filed in the LCRA TSC CCN Application. I believe the eight primary 11 routes filed in the Application represent an adequate number of reasonable, viable, geo-12 graphically-varied alternative routes for an approximately seven to nine-mile long trans-13 mission line. Additionally, potentially affected landowners along all of the links have 14 been notified of the proposed project. 15

16

Q. DOES PBS&J BELIEVE THAT ALTERNATIVE ROUTE CONFIGURATIONS EXIST THAT WOULD HAVE LESS IMPACT ON AFFECTED LANDOWNERS AND INTERVENORS?

20 A. The routing process involved the delineation of several primary alternative routes, as depicted in figures 4-2 and 4-3 of the EA. Information of the same general type on com-21 munity values, parks and recreation areas, archaeological and historic sites, aesthetics, 22 23 and environmental integrity is presented for the alternative routes in the EA. Some of these routes would have less or no impact on the land owned by some of the present in-24 tervenors because the routes do not cross that land. The selection of another alternative 25 over the preferred route could affect other landowners or intervenors. In the broader 26 27 sense, any number of alternatives could be formulated that might not impact presently affected landowners or present intervenors. However, it is unreasonable to conduct a Rout-28 ing Study in that manner. I believe that, on balance, the preferred and alternate routes 29 minimize adverse impacts on affected landowners. 30

1	Q.	PLEASE DESCRIBE THE COMMISSION'S POLICY OF "PRUDENT AVOID-
2		ANCE"?
3	A.	The Commission's Substantive Rule §25.101(a)(4) defines the term "prudent avoidance"
4.		to mean "the limiting of exposures to electronic and magnetic fields that can be avoided
5		with reasonable investments of money and effort."
6		
7	Q.	DOES PBS&J BELIEVE THAT LCRA TSC'S PREFERRED ROUTE COMPLIES
8		WITH WHAT YOU UNDERSTAND TO BE THE COMMISSION'S POLICY OF
9		PRUDENT AVOIDANCE?
10	A.	Yes. The routes considered in the EA conform to the Commission's policy of prudent
11		avoidance in that they reflect reasonable investments of money and effort in order to limit
12		exposure to electric and magnetic fields.
13		
14	Q.	HAS PBS&J REVIEWED AND CONSIDERED MITIGATION MEASURES
15		PROPOSED BY LCRA TSC FOR THIS PROJECT TO DECREASE POTENTIAL
16		IMPACTS FROM THE PROPOSED LINES?
17	A.	Yes, it has. Mitigation measures are set forth in Sections 1.4.4, 1.5, 1.5.1, 1.5.2, 1.5.4,
18		1.6 and 5.0 of the EA.
19		
20	Q.	WHAT ARE PBS&J'S CONCLUSIONS REGARDING THESE MITIGATION
21		MEASURES?
22	A.	The proposed mitigation measures should serve to reduce and mitigate the potential ad-
23		verse effects of construction and operation of the proposed transmission line to an appro-
24		priate extent.
25		
26		VI. SUMMARY AND CONCLUSION
27		
28	Q.	PLEASE SUMMARIZE YOUR TESTIMONY.
29	A.	In my opinion, the preferred transmission line route is environmentally acceptable, has
30		been routed in a prudent manner, and complies with the Texas Utilities Code and the
31		Commission's policies and procedures for transmission line siting. However, it is impor-

tant to note that all of the alternative routes proposed by LCRA TSC in this docket are viable, feasible, and environmentally acceptable. The preferred route has simply been deemed better than the other alternative routes based on the criteria discussed above and for reasons discussed in the direct testimony of LCRA TSC witness Mr. Dennis Palafox.

5

1

2

3

4

6 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

7 A. Yes, it does.

.

Rob R. Reid Vice President, Senior Project Director

EDUCATION

M.S., Wildlife & Fisheries Sciences, Texas A&M University, 1977 B.S., Wildlife & Fisheries Sciences, Texas A&M University, 1975

CERTIFICATIONS TxDOT Precertified, TxDOT ESN #1059

PROFESSIONAL DEVELOPMENT

Fourth Annual Short Course on Vegetation, Wildlife Measurements for Pre- & Post-Mining, Colorado State University, April 1981

PROFESSIONAL AFFILIATIONS

Phi Sigma Honorary Society, Beta Rho Chapter Travis County, Texas Environmental Task Force Member, 1988-1990

Since joining the staff of PBS&J, Mr. Reid has managed or participated in baseline studies and environmental assessments on surface and underground mines, flood control projects, electrical and microwave transmission facilities, airports, highways, pipelines, land developments, water resource management projects, and other industrial development projects. These studies have been conducted in several states including Texas, Arizona, Colorado, Arkansas, Louisiana, New Mexico, Alabama, North Carolina, Virginia, and Wisconsin. Mr. Reid's emphasis continues to be on the assessment of environmental impacts associated with industrial and urban development. Mr. Reid is very familiar with the permitting and licensing processes for utility facilities and surface and underground mines, and he regularly provides expert witness testimony for such projects.

Mr. Reid's teaching and research experience is principally in the field of wildlife biology. He has taught courses in ornithology, animal ecology, and wildlife management. Mr. Reid's research dealt primarily with the development of procedures for analyzing and evaluating game bird breeding habitat. These studies were carried out in conjunction with the Texas Parks and Wildlife Department and the U.S. Fish and Wildlife Service.

In his current position with PBS&J, Mr. Reid serves as a Vice President and Senior Project Director.

PUBLICATIONS

"Environmental Impact Statement for the Proposed Chambers Spring to Tontitown 345-kV Transmission Line Project, Benton and Washington Counties, Arkansas," prepared for Southwestern Electric Power Company, Shreveport, Louisiana. Document No. 060250, September 2006.

"Environmental Assessment and Alternative Route Analysis for the Proposed Medina Lake-CPS 138-kV Transmission Line Project, Bandera, Medina, and Bexar Counties, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas. Document No. 060125, July 2006. "Environmental Assessment and Alternative Route Analysis for the Proposed RCEC 138-kV Interconnect Project, Henderson and Van Zandt Counties, Texas," prepared for Rayburn County Electric Cooperative, Inc., Rockwall, Texas. Document No. 060040, July 2006.

"Environmental Assessment and Alternative Route Analysis for the Proposed Hidalgo/Rio Rico to Stewart Road Transmission Line Project, Hidalgo, County, Texas," prepared for AEP Texas Central Company, Corpus Christi, Texas. Document No. 060038, June 2006.

"Environmental Assessment and Alternative Route Analysis for the San Miguel to Lobo 345-kV Transmission Line Project in Atascosa, McMullen, LaSalle and Webb Counties, Texas," prepared for AEP Texas Central Company, Corpus Christi, Texas. Document No. 040374, June 2006.

"Routing Analysis Siloam Springs to Chambers Spring 161-kV Transmission Line, Benton County, Arkansas," prepared for Southwestern Electric Power Company, Shreveport, Louisiana. Document No. 060039, May 2006.

"Environmental Assessment and Alternative Route Analysis for the Proposed Sand Springs 138-kV Transmission Line Project, Wood County, Texas," prepared for Wood County Electric Cooperative, Inc., Quitman, Texas. Document No. 050274, April 2006.

"Environmental Assessment and Alternative Route Analysis for the Proposed Cagnon to Lytle 138-kV Transmission Line Project, Bexar, Medina and Atascosa Counties, Texas," prepared for City Public Service of San Antonio, San Antonio, Texas. Document No. 050041, January 2006.

"Environmental Assessment and Alternative Route Analysis for the Proposed Amite South Phase 2 230-kV Transmission Line Project, Ascension, St. James, and St. John the Baptist Parishes, Louisiana," prepared for Entergy Services, Inc., as agent for Entergy Louisiana, Inc., New Orleans, Louisiana. Document No. 050093, December 2005.

"Environmental Assessment and Alternative Route Analysis for the 345-kV Hillje Project, Fort Bend, Wharton, Matagorda and Brazoria Counties, Texas," prepared for CenterPoint Energy Houston Electric, LLC, Houston, Texas. Document No. 040366, September 2005.

"Environmental Assessment and Alternative Route Analysis for the Proposed Merlin to L-17 138-kV Transmission Line Project, Orange County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas. Document No. 050119, August 2005.

"Environmental Assessment and Alternative Route Analysis for the Proposed Port Acres to Keith Lake 230-kV Transmission Line Project, Jefferson County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas. Document No. 050105, July 2005.



"Énvironmental Assessment and Alternative Route Analysis for the Winnsboro to North Mineola 138-kV Transmission Line Project in Wood, Franklin and Hopkins Counties, Texas," prepared for Southwestern Electric Power Co., Shreveport, Louisiana. Document No. 040165, September 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Sandy Creek to Sunrise Beach 138-kV Transmission Line Project, Llano County, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 030109, June 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Cagnon Road to LCRA Tie 345-kV Transmission Line Project, Bexar and Medina Counties, Texas," prepared for City Public Service of San Antonio, San Antonio, Texas, Document No. 030151, June 2004.

"Environmental Assessment and Alternative Route Analysis for TXU Electric Delivery Company's Proposed Jacksboro-West Denton 345-kV Transmission Line Project in Jack, Wise, and Denton Counties, Texas," prepared for TXU Electric Delivery Company, Fort Worth, Texas, Document No. 030302, June 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Hill Country 138-kV Transmission Line Project, Kendall County, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 030327, May 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Staley to Point Blank 138-kV Transmission Line Project, San Jacinto County, Texas," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 030128, April 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Johnstown to Porter 230-kV Transmission Line Project, Montgomery County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 040061, March 2004.

"Environmental Assessment for Entergy Gulf States, Inc.'s Proposed Line 457 to Carroll Street Park Switching Station 138-kV Transmission Line Project, Jefferson County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 030264, January 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Cagnon-Kendall 345-kV Transmission Line Project, Kendall County, Texas," prepared for Lower Colorado River Authority, Austin, Texas, Document No. 020396, January 2004.

"Environmental Assessment and Alternative Route Analysis for the Proposed Dayton to Gordon 138-kV Transmission Line Project, Liberty County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 030322, December 2003. "Environmental Assessment and Alternative Route Analysis for Farmers Electric Cooperative, Inc.'s (dba FEC Electric) Proposed Forney -NW Terrell 138-kV Transmission Line Project, Kaufman County, Texas," prepared for Farmers Electric Cooperative, Inc., Greenville, Texas, Document No. 030261, December 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed Glasscock to Andice 138-kV Transmission Line Project, Williamson County, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 000226, November 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed Sharyland Utilities Mexico Tie 138-kV Transmission Line Project, Hidalgo County, Texas," prepared for Sutherland, Asbill & Brennan, LLP, Austin, Texas, Document No. 030127, October 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed Pittsburg to Winnsboro 138-kV Transmission Line Project in Camp, Franklin, and Wood Counties, Texas," prepared for Southwestern Electric Power Co., Shreveport, Louisiana, Document No. 020203, August 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed Southwest Research Institute 138-kV Transmission Line Project, Bexar County, Texas," prepared for City Public Service of San Antonio, San Antonio, Texas, Document No. 020354, July 2003.

"Environmental Assessment of the Proposed North McCamey to Rio Pecos 138-kV Transmission Line, Upton, Crane, And Crockett Counties, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 030009, May 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed Hamilton Wolfe 138-kV Transmission Line Project, Bexar County, Texas," prepared for City Public Service of San Antonio, San Antonio, Texas, Document No. 030101, May 2003.

"Environmental Assessment and Alternative Route Analysis for the Proposed NGPL (Kinder Morgan) to Devers 138-kV Transmission Line Project, Liberty County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 030034, April 2003.

"Environmental Assessment for the Proposed China to Porter 230-kV Transmission Line Project Jefferson, Hardin, Liberty, Harris, and Montgomery Counties, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 020119, December 2002.

"Environmental Assessment and Alternative Route Analysis for the Proposed Twin Buttes to Big Lake/SAPS Cut-In 138-kV Transmission Line Project Tom Green County, Texas," prepared for I.CRA Transmission Services Corporation, Austin, Texas, Document No. 010141, December 2002.



"Environmental Assessment and Alternative Route Analysis for the Proposed Fort Lancaster to Friend Ranch 138-kV Transmission Line Crockett, Pecos, and Terrell Counties, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 020029, November 2002.

"Environmental Assessment and Alternative Route Analysis for the North McCamey to Southwest Mesa Tap 138-kV Transmission Line Project Upton County, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 020129, October 2002.

"Environmental Assessment for the Proposed Crane to McElroy/ N. McCamey Cut-In 138-kV Transmission Line Crane and Upton Counties, Texas," prepared for LCRA Transmission Services Corporation, Austin, Texas, Document No. 020130, September 2002.

"Environmental Assessment and Alternative Route Analysis for the Proposed Northeast Water Plant 138-kV Transmission Line Project Harris County, Texas," prepared for Reliant Energy HL&P, Houston, Texas, Document No. 010403, July 2002.

"Environmental Assessment and Alternative Route Study for the Proposed Hickory Forest to New Berlin 138-kV Transmission Line Project Guadalupe County, Texas," prepared for Guadalupe Valley Electric Cooperative, Gonzales, Texas, Document No. 010314, June 2002.

"Environmental Assessment for the Nueces Bay to Portland 138-kV Transmission Line Project Nueces County, Texas," prepared for American Electric Power, Dallas Texas, Document No. 020048, March 2002.

"Environmental Assessment for the Nueces Bay to Dupont Switch 138-kV Transmission Line Project Nueces County, Texas," prepared for American Electric Power, Dallas Texas, Document No. 020047, March 2002.

"Environmental Assessment for the Nueces Bay to Lon Hill and Nueces Bay to Up River Road 138-kV Transmission Line Project Nueces County, Texas," prepared for American Electric Power, Dallas Texas, Document No. 010426, March 2002.

"Environmental Assessment and Alternative Route Analysis for the Lower Colorado River Authority's Proposed Macedonia to Hockley 138-kV Transmission Line Project Harris, Montgomery, and Waller Counties, Texas," prepared for Lower Colorado River Authority, Austin, Texas, Document No. 981789, July 2001.

"Environmental Assessment and Alternative Route Analysis for the Proposed Graham-Jacksboro 345-kV Transmission Line Project Young and Jack Counties, Texas," prepared for TXU Electric Company, Fort Worth, Texas, Document No. 990513, May 2001.

"State Highway 130 from I-35 North of Georgetown to I-10 Near Seguin - Environmental Impact Statement," Draft December, 1999/Final March 2001. (PBS&J Project Manager) "Environmental Assessment and Alternative Route Analysis for the Proposed Conroe to Forest 138-kV Transmission Line Project Montgomery County, Texas," prepared for Entergy Gulf States, Inc., Beaumont, Texas, Document No. 000338, December 2000.

"Environmental Assessment and Alternative Route Analysis for the Proposed Capote to Hickory Forest 138-kV Transmission Line Project Guadalupe County, Texas," prepared for Guadalupe Valley Electric Cooperative, Gonzales, Texas, Document No.991436, November 2000.

"Environmental Assessment and Alternative Route Analysis for the Proposed Van Raub 138-kV Transmission Line Project, Bexar, Kendall, Bandera, and Comal Counties, Texas," prepared for City Public Service of San Antonio, San Antonio, Texas, Document No. 991488, September 2000.

"Environmental Assessment for the Proposed Kunitz to Wink 138-kV Transmission Line, Culberson, Reeves, Loving, and Winkler Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 000006, May 2000.

"Environmental Assessment for the Proposed Lockhart to Dump Hill 138/69-kV Transmission Line, Caldwell County, Texas," prepared the Lower Colorado River Authority, Austin, Texas, Document No. 991383, March 2000.

"Environmental Assessment and Alternative Route Analysis for the Proposed Morgan Creek-Twin Buttes-Red Creek-Comanche 345-kV Transmission Line Project, Mitchell, Coke, Sterling, Tom Green, Runnels, Concho, Coleman, McCulloch, Brown, Mills, and Comanche Counties, Texas," prepared for TXU Electric, Fort Worth, Texas, and West Texas Utilities Company, Abilene, Texas, Document No. 990514, February 2000.

"Environmental Assessment and Alternative Route Analysis for the Proposed Entergy Gulf States, Inc. Spring Creek 138-kV Transmission Line Project, Montgomery and Harris Counties, Texas," prepared for Entergy/Gulf States Utilities Company, Beaumont, Texas, Document No. 991143, December 1999.

"Environmental Assessment for the Proposed Fayette Power Project -Lytton Springs 345-kV Transmission Line, Caldwell, Bastrop, and Fayette Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 990818, July 1999.

"Environmental Assessment for the Proposed Hays Energy 345kV Transmission Line, Hays and Guadalupe Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 990086, April 1999.

"Environmental Assessment - Frontera Generation Limited Partnership - Rio Bravo Electrical Interconnection Project, Hidalgo County, Texas," prepared for Frontera Generation Limited Partnership, Dallas, Texas/U.S. Department of Energy, Washington, D.C., DOE/EA-1297, April 1999.



"Environmental Assessment for the Proposed Buda-Rohr 138-kV Transmission Line, Hays County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 990085, March 1999.

"Environmental Assessment and Alternative Route Analysis for the Jasper-Newton Electric Cooperative's McGee 138-kV Transmission Line and Substation Project, Jasper County, Texas," prepared for Jasper-Newton Electric Cooperative, Inc., Kirbyville, Texas, Document No. 980285, December 1998.

"Environmental Assessment and Alternative Route Analysis for the Proposed Mustang Island Transmission Line Project, Nueces County, Texas," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 980884, November 1998.

"Environmental Assessment and Alternative Route Analysis for the Lower Colorado River Authority's Proposed Segovia Transmission Line Project, Kimble County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 971620, October 1998.

"Environmental Assessment for the Proposed Coldspring to Wolf Creek to Dorrell 138-kV Transmission Line Project, San Jacinto, Walker, and Montgomery Counties, Texas," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 970128, August 1998.

"Environmental Assessment and Alternative Route Analysis for the Proposed Big Lake-Ozona-Sonora 138-kV Transmission Line Project, Reagan, Crockett, Schleicher, and Sutton Counties, Texas," prepared for West Texas Utilities Company, Abilene, Texas, Document No. 971225, April 1998.

"Environmental Assessment for the Proposed Hill Country to Stonegate 138-kV Transmission Line Project at Camp Bullis, Texas," prepared for City Public Service Company of San Antonio, San Antonio, Texas, Document No. 960210, February 1998.

"Environmental Assessment and Alternative Route Analysis for the Proposed Friendship to Circle C to Manchaca 138-kV Transmission Line Project, Travis and Hays Counties, Texas," prepared for Pedernales Electric Cooperative, Inc., Johnson City, Texas, Document No. 970276, September 1997.

"Environmental Assessment for the Proposed Upgrading of the Alum Creek to Smithville 69-kV Transmission Line, Bastrop County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 970860, August 1997.

"Environmental Assessment and Alternative Route Analysis for the Proposed Wirtz to Granite Mountain 138-kV Transmission Line Project, Burnet County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 970133, June 1997.

"Environmental Assessment and Alternative Route Study for the Proposed Taylor Bayou 69-kV Transmission Line Project," prepared for Entergy/Gulf States, New Orleans, Louisiana, Document No. 961534, January 1997.

"Borrower's Environmental Report for the Proposed SN TX to Plainview 69-kV Transmission Line Project," prepared for Midwest Electric Cooperative, Inc., Roby, Texas, Document No. 961379, November 1996.

"Environmental Assessment and Alternative Route Study for the Proposed Longworth 69-kV Transmission Line Project," prepared for West Texas Utilities Company, Abilene, Texas, Document No. 961378, November 1996.

"Environmental Assessment and Alternative Route Study for the Proposed Snyder to Roby 69-kV Transmission Line Project," prepared for West Texas Utilities Company, Abilene, Texas, Document No. 960748, November 1996.

"Draft Environmental Impact Statement, U.S. 71 B Texarkana, Arkansas, to DeQueen, Arkansas B Little River, Miller, and Sevier Counties, Arkansas and Bowie County, Texas," prepared for the Arkansas State Highway and Transportation Department and the Federal Highway Administration, State Project No. 30108, Document No. 930500, November 1996.

"Environmental Assessment and Alternative Route Study for the Proposed Buttercup to Jollyville 138-kV Transmission Line Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 960328, September 1996.

"Environmental Assessment for the Proposed University Substation Project," prepared for Central and South West Services, Inc., Dallas, Texas, Document No. 960749, July 1996.

"Borrowers Environmental Report for the South Palestine 138-kV Transmission Line Project, Anderson County, Texas," prepared for New Era Electric Cooperative, Inc., Athens, Texas, Document No. 960079, June 1996.

"Environmental Assessment and Alternative Route Study for the Proposed Gateway 138-kV Transmission Line/Substation Project," prepared for Central and South West Services, Inc., Dallas, Texas, Document No. 960447, May 1996.

"Environmental Assessment for the Proposed D.O. Aldridge-Hill/ Wilson 69-kV Transmission Line Project, Franklin and Hopkins Counties, Texas," prepared for Wood County Electric Cooperative, Inc., Quitman, Texas, Document No. 930602, May 1996.

"Environmental Assessment for the Proposed Central Heights-Martinsville 69/Future 138-kV Transmission Line Project, Nacogdoches County, Texas," prepared for Deep East Texas Electric Cooperative, Inc., San Augustine, Texas, Document No. 950760, November 1995.

"Environmental Assessment and Alternative Routing Analysis for the Proposed Schertz to Parkway 138-kV Transmission Line Project, Volumes I and II," prepared for the Lower Colorado River Authority, Austin, Texas, Document Nos. 950694 and 951020, November 1995.



"Environmental Assessment and Alternative Routing Analysis for the Proposed Conroe to Oak Ridge 138-kV Transmission Line Project," prepared for Entergy/Gulf States Utilities, Beaumont, Texas, Document No. 950757, October 1995.

"Comprehensive Routing, Environmental, and Engineering Studies for the Onion Creek to Bergstrom 138-kV Transmission Line Project (subconsultant to R.W. Beck for Environmental Assessment)," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 950265, September 1995.

"Borrowers Environmental Report for the Proposed Reno 138-kV Transmission Line Project, Lamar County, Texas," prepared for Lamar County Electric Cooperative Association, Paris, Texas, Document No. 940512, June 1995.

"Environmental Assessment and Alternative Route Analysis for the Proposed Bo 138-kV Transmission Line Project," prepared for Gulf Coast Power Connect, Inc., Austin, Texas, Document No. 941206, February 1995.

"Environmental Assessment for the Temco-Evergreen 138-kV Transmission Line Project Walker County, Texas," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 940669, November, 1994.

"Environmental Assessment and Alternative Routing Analysis for the Proposed Mexico Tie 230-kV Transmission Line Project (Preliminary Draft)," prepared for Central and South West Services, Inc., Dallas, Texas, Document No. 930240, November 1994.

"Volume II Environmental Assessment of Alternative Routes for LCRA's Proposed Schumansville Project, Comal and Guadalupe Counties, Texas." prepared for The Lower Colorado River Authority, Austin, Texas, Document No. 930774, October 1994.

"Environmental Assessment and Alternative Route Analysis for LCRA's Proposed Texas Wind Power Project 138-kV Transmission Line Culberson County, Texas," prepared for The Lower Colorado River Authority, Austin, Texas, Document No. 940135, June 1994.

"Borrowers Environmental Report Sam Houston Electric Cooperative, Inc. Proposed Two-Year Work Plan 1994-1995," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas 77351, Document No. 940034, March 1994.

"Environmental Assessment and Alternative Route Analysis for Central Power and Light Company's Proposed Roma 138-kV Transmission Line Project," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 930514, November 1993.

"Environmental Assessment for the Proposed Berea-Jacksonville 138-kV Transmission Line Project, Anderson, Cherokee and Houston Counties, Texas," prepared for East Texas Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 930066, October 1993. "Environmental Assessment for the Proposed Swinneytown Tap-Swinneytown 138-kV Transmission Line Project, Smith County, Texas," prepared for East Texas Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 930069, October 1993.

"Environmental Assessment for the Proposed Troup Tap-New Summerfield 138-kV Transmission Line Project, Smith and Cherokee Counties, Texas," prepared for East Texas Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 930068, October 1993.

"Environmental Assessment for the Proposed Jacksonville-Teaselville 138-kV Transmission Line Project, Smith and Cherokee Counties, Texas," prepared for East Texas Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 930067, October 1993.

"Environmental Assessment for the Proposed Clyde Brady-E. Burges 138-kV Transmission Line Project, Van Zandt and Smith Counties, Texas," prepared for East Texas Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 930070, October 1993.

"Environmental Assessment and Alternative Route Analysis for the Proposed Fredericksburg North Project-Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890251, June 1989 (Revised August 1993).

"Volume I Existing Environment of the Region of Interest for the LCRA's Proposed Schumansville Project," prepared for The Lower Colorado River Authority, Austin, Texas, Document No. 930016, May 1993.

"Existing Environment of the Region of Interest for the Proposed Fredericksburg North Project-Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 880069, April 1989 (Revised January 1993).

"Environmental Assessment for the Proposed Eden Project, Conch County, Texas," prepared for West Texas Utilities Company, Abilene, Texas, Document No. 910575, November 1992.

"Comprehensive Routing and Environmental Studies for the Seaholm to Salem Walk 138-kV Transmission Line Project (CKT 976)," prepared for The City of Austin Electric Utility Department, Austin, Texas, Document No. 900194, September 1992.

"Environmental Assessment and Alternative Route Analysis for the Proposed Kerr County Project-Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890178, May 1989 (Revised September 1992).

"Borrowers Environmental Report for the Proposed Jackson-Canton 138-kV Transmission Line Project, Van Zandt County, Texas," prepared for Rayburn Country Electric Cooperative, Inc., Rockwall, Texas, Document No. 910604, July 1992.

"Environmental Assessment and Alternative Routing Analysis for the Proposed Cross Valley Tie 345/138-kV Project," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 900784, July 1992.

"Draft Environmental Impact Statement-Proposed Construction of Winston-Salem Outer Beltway on New Location," prepared for North Carolina Dept. of Transportation, FHWA-NC-EIS-92-06-D, Document No. 910124, June 1992.

"Environmental Assessment and Alternative Route Analysis for the Proposed Military Highway-CFE Tie 138/69-kV Transmission Line Project, Brownsville, Cameron County, Texas," prepared for Central Power and Light Company, Corpus Christi, Texas/ U.S. Dept. of Energy, Document No. 910377, DOE/EA-0702. April 1992.

"Environmental Assessment for Central Power and Light Company's Proposed Koch Refining Company 69/138-kV Transmission Line Relocation Project," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 910439, January 1992.

"Environmental Assessment and Alternative Routing Analysis for the Proposed Alamogordo to Ruidoso 115-kV Transmission Line Project," prepared for Texas-New Mexico Power Company, Fort Worth, Texas, Document No. 900551, January 1992.

"Environmental Assessment for the Proposed Rebuilding and Relocation of a Portion of the Hicross-Buda Split 138-kV Transmission Line, Travis and Hays Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 900302, September 1991.

"Comprehensive Siting, Routing & Environmental Studies for the Oak Hill 138-kV Substation and Related Transmission Line Relocation Project," prepared for the City of Austin, Austin, Texas, Document No. 910044, September 1991.

"Phase I Preacquisition Site Assessment-55-Acre Tract Southwest of the Intersection of FM 1599 and Searcy Ranch Road, Harlingen, Texas," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 910411, August 1991.

"Draft Environmental Impact Statement - Proposed Construction of U.S. 220 to a Four-Lane Divided Facility on New Location that Extends Approximately 15.3 Miles from Emery to south of Ellerbe in Montgomery and Richmond Counties, North Carolina," prepared for the North Carolina Department of Transportation, Raleigh, North Carolina, FHWA-NC-EIS-91-02-D, July 1991.

"Environmental Assessment and Alternative Route Analysis for the Proposed North Pole-Oilville-Short Pump 230-kV Transmission Line Project," prepared for Virginia Power, Richmond, Virginia, Document No. 890327, July 1991.

"Existing Environment of the Region of Interest for the Proposed Kerr County Project-Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890196, April 1989 (Revised June 1991).

"Environmental Assessment for the Proposed Hilbig 13.8-kV In-Field Line Addition Near Rockne, Bastrop County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 910179, May 1991.

"Borrowers Environmental Report/Environmental Assessment for the Proposed Canton Tap - Mineola 138-kV Transmission Line Project, Van Zandt, Smith and Wood Counties, Texas," prepared for Southwestern Electric Power Company, Shreveport, Louisiana and Rayburn Country Electric Cooperative, Inc., Rockwall, Texas, Document No. 900607, March 1991.

"Environmental Evaluation of the Proposed 138-kV Transmission Line Between the Glenn Pine Substation and the Proposed Explorer Switching Station in Van Zandt County, Texas," prepared for Kaufman County Electric Cooperative, Inc., Kaufman, Texas and Rayburn Country Electric Cooperative, Inc., Rockwall, Texas, Document No. 910041, March 1991.

"Environmental Assessment and Alternative Route Analysis for the Proposed Explorer-Overton 138-kV Transmission Line Project-Kaufman, Van Zandt, Henderson, Smith, Anderson, Cherokee and Rusk Counties, Texas," prepared for Rayburn Country Electric Cooperative, Inc., Rockwall, Texas, Document No. 900556, February 1991.

"A Review of Available Information on Black-capped Vireo Occurrence in Relation to the Lower Colorado River Authority's Electric Transmission Facilities," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 900700, January 1991 (with staff).

"Comprehensive Routing and Environmental Studies for the Sprinkle to Howard Lane 138-kV Project (CKT 974/975)," prepared for the City of Austin, Austin, Texas, Document No. 900021, January 1991.

"Borrowers Environmental Report-Sam Houston Electric Cooperative, Inc. - Proposed Two-Year Work Plan-1991-1992," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 910015, January 1991.

"Alternative Routing Analysis and Environmental Report for the Proposed Dripping Springs to Wimberley 138-kV Transmission Line and Substation," prepared for Pedernales Electric Cooperative, Inc., Johnson City, Texas, Document No. 900614, November 1990.

"Environmental Analysis of South Padre Island - Port Isabel 138-kV Underground Transmission Cable," prepared for Central Power and Light Co., Corpus Christi, Texas, Document No. 890699, October 1990.

"Supplemental Biological Assessment of the Endangered Attwater's Prairie Chicken and Bald Eagle Along CPL's Proposed Lon C. Hill-Coleto Creek 345-kV Transmission Line," prepared for the U.S. Army Corps of Engineers, Galveston, Texas, Document No. 900619, October 1990.

"Borrowers Environmental Report - Six Mile - Leach 138-kV Transmission Line Project, Sabine & Newton

7

Counties, Texas," prepared for Tex-La Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 890651, September 1990.

"Environmental Assessment and Alternative Route Analysis for the Lytton Springs-Slaughter Lane Project," prepared for the City of Austin, Austin, Texas, Document No. 890501, September 1990.

"Environmental Assessment and Alternative Route Analysis for Central Power and Light Company's Proposed Santo Nino 138kV Transmission Line and Substation," Webb County, Texas, prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 900034, August 1990.

"Environmental Assessment & Alternative Route Analysis - Pineland - Rayburn Switchyard 138-kV Transmission Line Project, Sabine and Jasper Counties, Texas," prepared for Tex-La Electric Cooperative, Inc., Nacogdoches, Texas, Document No. 890650, August 1990.

"Environmental Assessment of the Proposed Pisek Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890377, March 1990.

"Borrowers Environmental Report - Center-Holly 138-kV Transmission Line Project, Shelby & San Augustine Counties, Texas," prepared for Tex-La Electric Cooperative of Texas, Inc., Nacogdoches, Texas, Document No. 890649, February 1990.

"Environmental Assessment for the Winchester to Salem 138-kV Transmission Line Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890384, December 1989.

"Alternative Route Analysis and Environmental Assessment for the Lon C. Hill-Coleto Creek 345-kV Transmission Line (Volumes I and II)," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 890149, December 1989.

"Environmental Information Document for the Proposed Aristech Cumene/Phenol Complex, Mount Airy, Louisiana," prepared for Aristech Chemical Corp., Pittsburgh, Pennsylvania, Document No. 890115, October 1989.

"Borrowers Environmental Report for the Proposed Tenaha-Timpson 138-kV Transmission Line/30-Megawatt Load Shift Project," prepared for Tex-La Electric Cooperative of Texas, Inc., Nacogdoches, Texas, Document No. 880728, September 1989.

"Environmental Assessment and Alternative Route Analysis for Central Power and Light Company's Proposed Javelina 138-kV Transmission Line and Substation," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 890135, September 1989.

"Alternative Route Analysis and Environmental Assessment for the Proposed Gill 138-kV Transmission Line Project, Harrison County, Texas," prepared for Panola-Harrison Electric Cooperative, Inc., Marshall, Texas, Document No. 890070, June 1989. "Environmental Assessment and Alternative Route Analysis-Chesterfield to Chickahominy 230-kV Project," prepared for Virginia Power, Richmond, Virginia, Document No. 880720, June 1989.

"Environmental Assessment for a Proposed 138-kV Transmission Line Relocation Near Kyle, Hays County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890241, June 1989.

"A Review of Available Information on Black-capped Vireo Occurrence in Relation to the Lower Colorado River Authority's Electric Transmission Facilities," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 890020, February 1989 (with staff).

"Environmental Assessment - Lampasas-Goldthwaite 69-kV Transmission Line Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 880505, February 1989.

"Environmental Information Document," prepared for the El Paso County Lower Valley Water District Authority, Socorro, Texas, Document No. 880679, December 1988 (with Jones and Neuse, Inc. and Conde Engineering, Inc.).

"Environmental Report for the Proposed Childress to Paducah 138-kV Transmission Line Project," prepared for West Texas Utilities Company, Abilene, Texas, Document No. 880628, November 1988.

"Borrowers Environmental Report for the Proposed West Munson-Quinlan-Wieland 138-kV Transmission Line and Substations," prepared for Farmers Electric Cooperative, Inc., Greenville, Texas, Document No. 880563, November 1988.

"Environmental Assessment and Alternative Route Analysis for the Proposed Mill Creek Project - Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 880292, September 1988.

"Environmental Assessment and Alternative Route Analysis for Central Power and Light Company's Proposed Homeport 138-kV Transmission Line and Substation," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 880363, September 1988.

"Environmental Information Document for a Proposed Wood Products Manufacturing Facility in Beauregard Parish, Louisiana," prepared for Temple-Eastex, Inc., Diboll, Texas, Document No. 880422, August 1988.

"Environmental Assessment and Alternative Route Analysis for the Proposed Colorado County Project - Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 880406, August 1988.

"Borrowers Environmental Report for the Proposed Moss Hill 230-kV Transmission Line and Substation," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 880202, June 1988.



"Environmental Assessment of the Proposed Loudoun to Clark 230-kV Project," prepared for Virginia Power, Glen Allen, Virginia, Document No. 880065, June 1988.

"Existing Environment of the Region of Interest for the Proposed Colorado County Project - Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 880068, April 1988.

"Existing Environment of the Region of Interest for the Proposed Mill Creek Project - Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 870888, February 1988.

"Environmental Assessment of the Proposed North Anna to Mitchell 230-kV Project," prepared for Virginia Power, Glen Allen, Virginia, Document No. 870598, January 1988.

"Environmental Assessment and Alternative Route Analysis for the Proposed Kerrville South Project - Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 870784, December 1987.

"Environmental Assessment for the Ferguson-Buchanan 138-kV Transmission Line Project, Burnet and Llano Counties, Texas," prepared for the Lower Colorado Authority, Austin, Texas, Document No. 870518, July 1987.

"Environmental Assessment for the Buchanan-Mormon Mill 138-kV Transmission Line Project, Burnet and Llano Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 870517, July 1987.

"Environmental Assessment of the City of Austin's Proposed CKT 968 138-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 870600, June 1987.

"Environmental Assessment of the City of Austin's Proposed CKT 966 138-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 870126, June 1987.

"Part A: Environmental Assessment of Mid-Term and Long-Term Development Options at Robert Mueller Municipal Airport," prepared for the City of Austin Department of Aviation; prepared by the Greiner Austin Team - Joint Venture, Document No. 860722, April 1987.

"Environmental Assessment of Alternative Routes for LCRA's Proposed Deanville Project - Volume II," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 861322, March 1987.

"Alternative Route Analysis and Environmental Assessment for the Lon C. Hill - Coleto Creek 345-kV Transmission Line," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 860548, February 1987. "Environmental Assessment of the City of Austin's Proposed CKT 961 138-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 861316, December 1986.

"Environmental Assessment of the City of Austin's Proposed CKT 3125 345-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 860579, September 1986.

"Alternative Route Analysis and Environmental Assessment of the City of Austin's Proposed CKT 912 Transmission Line Project within the City of West Lake Hills, Texas," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 851130, August 1986.

"Osuna Road Improvements (From Second Street to the North Diversion Channel) Project No. M-4052(2) Environmental Assessment," prepared for the County of Bernalillo, New Mexico, Document No. 86078, August 1986.

"Borrower's Environmental Report: Port Lavaca-Vanderbilt 138-kV Transmission Line and Substation-Jackson, Victoria, and Calhoun Counties, Texas," prepared for South Texas Electric Cooperative, Inc., Nursery, Texas, Document No. 860208, March 1986.

"Borrower's Environmental Report: Orange Grove - Driscoll 138-kV Transmission Line and Substation-Jim Wells and Nueces Counties, Texas," prepared for South Texas Electric Cooperative, Inc., Nursery, Texas, Document No. 860199, March 1986.

"Water Availability Study for the Guadalupe and San Antonio River Basins," prepared for the San Antonio River Authority, Guadalupe-Blanco River Authority, and City of San Antonio, Document No. 85580 (wildlife section), February 1986.

"Environmental Assessment of the City of Austin's Proposed CKT 972 138-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 85896, October 1985.

"Environmental Assessment of the Giddings to Lexington 138kV Transmission Line Project, Lee County, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 85733, August 1985.

"Environmental Assessment of the Mormon Mills 138-kV Transmission Line Project, Travis and Burnet Counties, Texas," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 85611, July 1985.

"Environmental Assessment of the City of Austin's Proposed CKT 3126 345-kV Transmission Line Project," prepared for the City of Austin Electric Utility Department, Austin, Texas, Document No. 85652, July 1985.

"Environmental Assessment of Alternative Routes for LCRA's Proposed Round Top Project - Volume II,"



prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 85558, June 1985.

"Existing Environment of the Region of Interest for LCRA's Proposed Deanville Project - Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 841024, March 1985 (Revised November 1986).

"Existing Environmental of the Region of Interest for LCRA's Proposed Round Top Project - Volume I," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 861023, February 1985.

"Calvert Project-Ecology Baseline Report - 1985 Update," prepared for Phillips Coal Company, Richardson, Texas, Document No. 85614, July 1985.

"Final Report on Pre-Construction Monitoring of Brown Pelican and Migratory Waterfowl Movements Near CP&L's Proposed Laguna Madre Transmission Line," prepared for Central Power and Light Company, Corpus Christi, Texas, Document No. 85431, June 1985.

"Environmental Review of Pedernales Electric Cooperative's Proposed Service Center - FM 1431, Williamson County, Texas," prepared for Pedernales Electric Cooperative, Inc., Johnson City, Texas, Job No. 7519, Letter Report, December 1985.

"Alternative Route Analysis and Environmental Assessment for the Proposed Coldspring 138-kV Transmission Line," prepared for Sam Houston Electric Cooperative, Inc., Livingston, Texas, Document No. 84889, December 1984.

"Environmental Evaluation Relating to Petitions to Designate 178 Square Miles in Bastrop and Lee Counties as Unsuitable for Surface Coal Mining," prepared for Aluminum Company of America, City Public Service of San Antonio, Shell Mining Company, and Texas Mining and Reclamation Association, Document No. 84387, July 1984.

"Existing Environment of the Region of Interest for LCRA's Proposed Kerrville South Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 84314, June 1984. (Revised November 1987)

"Environmental Assessment and Alternative Route Analysis for the Proposed China to Porter 500-kV Transmission Line," prepared for Gulf States Utilities Company, Beaumont, Texas, Document No. 83566, January 1984.

"Environmental Impact Statement - Flint Creek to Oklahoma 345-kV Transmission Line," prepared for Southwestern Electric Power Company, Shreveport, Louisiana, Document No. 83479, October 1983.

"An Environmental Assessment of Alternative Lignite Conveyor Routes Between the Cummins Creek Mine and Fayette Power Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 83437, August 1983. "An Environmental Assessment of Alternative Lignite Transportation Methods Between the Cummins Creek Mine and the Fayette Power Project," prepared for the Lower Colorado River Authority, Austin, Texas, Document No. 83385, July 1983.

"Environmental Assessment of the Proposed Turtle Creek to Hunt 138-kV Transmission Line, Kerr County, Texas," prepared for Lower Colorado River Authority, Austin, Texas, Document No. 83072, March 1983.

"Environmental Assessment for the Hunter to Sattler 138-kV Transmission Line, Hays and Comal Counties, Texas," prepared for Pedernales Electric Cooperative, Inc., Johnson City, Texas, Document No. 83138, March 1983.

"Draft Environmental Impact Statement, Malakoff Electric Generating Station and Trinity Mine, Henderson and Anderson Counties, Texas" (Wildlife Sections), Third-Party EIS prepared for U.S. EPA, Dallas, Texas, EPA 906/9-83-002, February 1983.

"Alternative Route Analysis and Environmental Assessment for the Fayetteville-Salem 345-kV Transmission Line," prepared for Lower Colorado River Authority, Austin, Texas, Document No. 82522, December 1982.

"Review and Comparison of Three Lignite Mine Reserve Fatal Flaw Reports," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 82430, September 1982.

"Final Environmental Impact Statement, Henry W. Pirkey Power Plant Unit 1/South Hallsville Surface Lignite Mine Project, Harrison County, Texas," Third-Party EIS prepared for U.S. EPA, Dallas, Texas, EPA 906/9-82-011, Document No. 82241, September 1982.

"Fatal Flaw Analysis of the Proposed Morgan Hill Lignite Project, Limestone and Freestone Counties, Texas," Client Confidential, Document No. 82393, September 1982.

"Prepared Testimony of Rob R. Reid for the Proposed Temco to Evergreen 138-kV Transmission Line, Walker County, Texas," prepared for Sam Houston Electric Cooperative, Livingston, Texas, June 1982; testimony given before Public Utility Commission of Texas in Public Hearing on August 12, 1982.

"Draft Environmental Impact Statement, Henry W. Pirkey Power Plant Unit 1/South Hallsville Surface Lignite Mine Project, Harrison County, Texas," Third-Party EIS prepared for U.S. EPA, Dallas, Texas, EPA 906/9-82-004, Document No. 81451, March 1982.

"Environmental/Regulatory Fatal Flaw Analysis for the Malvern Lignite Prospect in Hot Spring County, Arkansas," Client Confidential, Document No. 81515, January 1982.

"Environmental/Regulatory Fatal Flaw Analysis for the Benton Lignite Prospect in Grant and Saline Counties, Arkansas," Client Confidential, Document No. 81514, January 1982. "Upper Guadalupe River Basin Water Supply Project - Final Report," prepared for Upper Guadalupe River Authority, Kerrville, Texas, and Guadalupe-Blanco River Authority, Seguin, Texas, Document No. 81137-R1, October 1981. (Wildlife Sections)

"Fish and Wildlife Resources of the Blue Ribbon Mine Site, Delta County, Colorado," prepared for Western Associated Coal Corp., Denver, Colorado, Document No. 81405, August 1981. (with J. Koblitz)

"Aransas Pass Hunting & Fishing Club - Proposed Project Plan, McCampbell Slough, San Patricio County, Texas," prepared for Aransas Pass Hunting & Fishing Club, Corpus Christi, Texas, Document No. 81292, August 1981.

"Baseline Environmental Studies of the Proposed Dolet Hills Power Plant Transportive Systems Corridors," prepared for Southwestern Electric Power Company, Shreveport Louisiana, Document No. 81415, August 1981.

"Baseline Survey of the Terrestrial Ecology of the Site X Project Area," Henderson County, Texas, Document No. 81253, Client Confidential, July 1981. (with C.H. Perino)

"Borrower's Environmental Report - San Miguel Electric Cooperative, Inc.'s, Lignite Fired Power Plant, Unit No. 1, Atascosa County, Texas," prepared for San Miguel Electric Cooperative, Inc., Jourdanton, Texas, Document No. 81114, March 1981.

"Fatal Flaw Analysis of the Added Area to the Sparta Mine, Calhoun County, Arkansas," Document No. 80392, Client Confidential, March 1981.

"Environmental Analysis - Elm Mott/Whitney 345-kV Transmission Line and Substation," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 80104, March 1981.

"Borrower's Environmental Report: Magic Valley Electric Cooperative, Inc.'s Two Year Work Plan," prepared for Magic Valley Electric Cooperative, Inc., Mercedes, Texas, Document No. 81061, February 1981.

"Baseline Ecological Studies of the Richland-Chambers Reservoir Site," prepared for Tarrant County Water Control and Improvement District Number One, Document No. 80340, January 1981.

"Vegetation and Wildlife Resources of the Black Mesa and Kayenta Mine Site," prepared for Peabody Coal Company, Flagstaff, Arizona, Document No. 8071, December 1980.

"Baseline Ecological Survey - Jewett Mine Project," prepared for Northwestern Resources Company, Huntsville, Texas, Document No. 79260, July 1980.

"Transmission Facility Alternatives Evaluation and Siting Report - Elm Mott/Whitney 345-kV," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 80175, July 1980. "Permit Application for Meeker Area Mines and Associated Facilities - Rio Blanco County, Colorado," Eight Volumes, prepared for Northern Coal Company, Denver, Colorado, Document No. 8070, June 1980.

"Biological Assessment of the Impact of a Proposed 138-kV Transmission Line on Threatened and Endangered Species in Bell County, Texas," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 8013, January 1980.

"Borrower's Environmental Report: Youngsport Tap Line, Bell County, Texas," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 8014, January 1980.

"Environmental Impact Statement - Flint Creek-Neosho 161kV Transmission Line and Decatur-South Substation," Wildlife Sections, prepared for Empire District Electric Company, Joplin, Missouri, Document No. 79155, November 1979.

"Supplement to Appendix S - Monitoring Program, Proposed Multipurpose Deepwater Port and Crude Oil Distribution System, Galveston, Texas," Document No. 78160-S1, September 1979.

"Studies of the Effects of Alterations of Freshwater Inflows into Matagorda Bay Area, Texas, Phase I, Final Report," Appendix E, Fish & Wildlife Resources, September 1979. (with T.D. Hayes)

"Biological Assessment of the Impact of a Proposed Multipurpose Deepwater Port at Galveston, Texas on Threatened and Endangered Species," Document No. 79108, July 1979.

"Biological Assessment of the Impact of a Proposed 345-kV Transmission Line on Threatened and Endangered Species in Wilson and Guadalupe Counties, Texas," prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 79114, July 1979.

"Preliminary Ecological Evaluation of the Barton Creek Watershed - Appendix A," In: "A Study of Some Effects of Urbanization on the Barton Creek Watershed," Document No. 7995, June 1979. (with J.R. MacRae and D.B. Adams)

"Environmental Analysis: Youngsport Tap Line" (draft), prepared for Brazos Electric Power Cooperative, Inc., Waco, Texas, Document No. 7965, April 1979. (with J.R. Schenck and P.J. Grubb)

"Ecological Considerations Associated with the Disposal of Produced Water into Mound Lake, Terry and Lynn Counties, Texas," Document No. 7922, February 1979. (with J.M. Wiersema)

"Environmental Overview of a Proposed Surface Lignite Coal Mine in West-Central Alabama," Wildlife Section, Document No. 78149, November 1978.

"Baseline Survey of the Terrestrial Ecology of the Malakoff-Cayuga Mining Prospect," prepared for North American Coal Corporation, Dallas, Texas, Document No. 78165, November 1978. (with D.B. Adams)

"Environmental Impact Assessment and Evaluation of Alternatives for Lake Travis," Land Use and Ecology Section, prepared for U.S. Army Corps of Engineers, Fort Worth District, Document No. 7890, November 1978. (with D.B. Adams)

"Environmental Assessment Report - Proposed Multipurpose Deep-Water Port and Crude Oil Distribution System," Galveston, Texas, Vol. III, Appendix I - Wildlife, Document No. 7834, November 1978.

"Environmental Assessment Report - Proposed Multipurpose Deep-Water Port and Crude Oil Distribution System," Galveston, Texas, Wildlife Section, Document No. 7825, November 1978.

"Baseline Ecology Studies, Calvert Lignite Prospect," Wildlife Section, Document No. 78157, October 1978.

"Appendix to Volume II - Plan Summary Report, Lower Colorado Basin, Water Quality Management Plan," Biology Section, prepared for the Lower Colorado River Authority by and Turner, Collie, and Braden, Inc., Document No. 7880, June 1978.

"Environmental Analysis - CEPCO Microwave Relay System," Cajun Electric Power Cooperative, Inc., Document No. 7859, June 1978. (with D.B. Adams)

"Wildlife Baseline Report - Carter Oil Company Prospect," prepared for Dames & Moore, Houston, Texas, Document No. 7874, May 1978. (with J.R. Schenck and G.G. Raun) "A Windshield and Multivariate Approach to the Classification, Inventory, and Evaluation of Wildlife Habitat: An Exploratory Study," Presented at: A Workshop - The Use of Multivariate Statistics in Studies of Wildlife Habitat, 23-24 April 1980, Burlington, Vermont. Sponsored by: School of Natural Resources, University of Vermont; U.S. Fish and Wildlife Service; USDA Forest Service. USDA Forest Service Gen. Tech. Report RM-87, August 1981. (with C.E. Grue and N.J. Silvy)

"Competition Between Bobwhite and Scaled Quail for Breeding Habitat in Texas," Proc. Ann. Conf. S.E. Fish and Wildlife Agencies. 33: (146-153), 1979. (with N.J. Silvy and C.E. Grue)

"Correlation of Habitat Parameters with Whistle-Count Densities of Bobwhite (Colinus virginianus) and Scaled Quail (Callipepla squamata) in Texas," M.S. thesis, 1977.

"Breeding Habitat of the Bobwhite in Texas," Proc. Ann. Conf. S.E. Fish and Wildlife Agencies, 31: (62-71), 1977. (with C.E. Grue and N.J. Silvy)

"A Technique for Evaluating the Breeding Habitat of Mourning Doves Using Callcount Transects," Proc. Ann. Conf. S.E. Game and Fish Comm. 30: (667-673), 1976. (with C.E. Grue and N.J. Silvy)



Exhibit RRR-2

EXHIBIT RRR-2 Page 1 of 7

RECEIVED 2007 APR -9 AM 10: 26 PUBLIC UTILITY COMMISSION FILING CLERK

TEXAS PARKS & WILDLIFE

COMMISSIONERS

JOSEPH B.C., FITZSIMONS CHAIRMAN SAN ANTONIO

> DONATO D. RAMOS VICE-CHAIRMAN LAREDO

> > MARK E. BIVINS

J. ROBERT BROWN EL PASO

T. DAN FRIEDKIN HOUSTON

NED 5. HOLMES HOUSTON

PETER M. HOLT SAN ANTONIO

PHILIP MONTGOMERY DALLAS

> JOHN D. PARKER LUFKIN

LEE M BASS CHAIRMAN-EMERITUS FORT WORTH

ROBERT L. COOK



Take a kid hunting or fishing • • •

Visit a state park or historic site P.O. Box 13326 Austin, TX 78711-3326

RE: Proposed Rim Rock to Goat Creek 138-kV Transmission Line Project (PUC Docket No. 33844), Kerr County

Dear Mr. Almon:

April 5, 2007

Mr. Brian Almon, P.E. Public Utilities Commission

Texas Parks and Wildlife Department (TPWD) received the Environmental Assessment (EA) regarding the proposed transmission line referenced above located west of Kerrville. TPWD staff has reviewed the document and offers the following comments concerning this project.

Project Description

The proposed project entails the construction of a new 138-kV transmission line by LCRA Transmission Services Corporation (LCRA TSC) to connect the existing LCRA TSC Rim Rock Substation with the proposed LCRA TSC Goat Creek Substation and the existing Ingram to Harper Road transmission line. The proposed substation would be constructed near the existing Ingram to Harper Road line. The new transmission facilities would be constructed in new or existing 60- to 130-foot wide easements. Wider easements may be required in areas where terrain dictates. Temporary construction easements of varying width and length would also be required.

Vegetation

Vegetation impacts would primarily result from the removal of existing woody vegetation along the transmission line right of way (ROW). Areas without woody vegetation such as pasturelands would require little to no removal of vegetation. The EA states that efforts would be made during the clearing process to retain native ground cover where possible and to minimize impacts to local vegetation. If necessary, the ROW would be seeded as soon

4200 SMITH SCHOOL ROAD AUSTIN, TEXAS 76744-3291 512.389.4800 www.tpwd.stato.b.us To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

Mr. Brian Almon Page Two

as possible after construction for erosion control. During cleanup and restoration of the construction area, consideration would be given to the establishment of native vegetation to provide habitat for wildlife.

Recommendation: Due to the sensitivity of the surrounding habitat and the potential presence of rare species, TPWD recommends that only native vegetation be used in revegetation plans. The use of Bermuda grass (*Cynodon dactylon*) and other introduced species should be avoided. Please see the attached list of grasses and forbs native to the project area that would provide benefits for wildlife and erosion control. The use of native species in revegetation efforts will also reduce the need for maintenance and herbicide application.

Sites cleared and graded for storage and staging areas, temporary access roads, and the new substation site should be located in previously disturbed areas to the extent feasible. Temporary construction easements that will not require maintenance after construction should be revegetated with native species similar to what existed in that location prior to clearing.

The EA states that all of the proposed routes would require the removal of some bottomland/riparian woodland. Many wildlife species use riparian habitats as travel corridors. Loss and fragmentation of these travel corridors can inhibit the movement of these species between food, cover, and breeding locations.

Recommendation: TPWD recommends avoiding the removal of vegetation in riparian communities to the extent possible. Unavoidable impacts to riparian vegetation should be mitigated by the replacement of site specific native trees in the project area. TPWD recommends a replacement ratio of three trees for each tree lost. Any mitigation should include a maintenance plan to ensure 80% survival for the first two years. In addition, TPWD recommends placing woody debris into brush piles to provide habitat for wildlife along the riparian corridor. The brush piles should be located within the riparian corridors and be comprised of small logs, 4 to 6 inches in diameter by 6 to 8 feet long. The logs should be criss-crossed and topped with smaller branches and brush to provide a 6-to 8-foot tall brush pile. The brush piles will allow vegetation to reestablish and provide shelter and cover for wildlife.

Mr. Brian Almon Page Three

Water Resources

The EA states that LCRA TSC would avoid or minimize placement of supporting structures in streambeds. The transportation of machinery and equipment across streams spanned by the transmission line would be accomplished via existing roads at waterways with streamflow present, such as the Guadalupe River. However, temporary culverts or rock placed in stream bottoms may be used to cross intermittent or ephemeral creeks and tributaries. Bank and stream bed alterations may be necessary at these direct crossings.

Recommendation: TPWD recommends using existing bridges and culverts whenever possible to avoid disturbing stream substrates and riparian vegetation. If the installation of culverts or other crossings is unavoidable, crossings should be designed to avoid altering the width, depth, or velocity of streams and drainages in the project area. Changes in stream morphology can alter the sediment loading properties of the waterway and can lead to increased siltation, streambank erosion, and degradation of fish and wildlife habitat downstream of the project area. If alterations of the stream channel occur during construction, the original contours of the streambed should be restored once construction is complete.

Disturbance of State-owned streambeds and removal of streambed materials may require a permit from this Department under Chapter 86 of the Parks and Wildlife Code. Application forms and additional information on the requirements of this permit for impacts to the streambed can be obtained by contacting Rollin MacRae at the letterhead address or by phone at (512) 389-4639.

The EA states that hydric and aquatic habitats in the study area may meet the U.S. Army Corps of Engineers (COE) criteria for classification of jurisdictional wetlands and impacts to these areas may be subject to regulation. Although jurisdictional wetlands are protected by COE regulations, the protection of isolated wetlands has been removed from the COE permitting process. However, isolated wetlands provide valuable aquatic and terrestrial wildlife habitat and should be protected to the same extent as jurisdictional wetlands.

Recommendation: TPWD recommends that the proposed transmission line avoid isolated and jurisdictional wetlands to minimize direct impacts to these ecosystems. These areas should also be avoided in the placement Mr. Brian Almon Page Four

of storage and staging areas and the new substation. Unavoidable impacts to isolated and jurisdictional wetland areas should be mitigated by compensating for the loss of this sensitive habitat.

Rare and Protected Species

Because detailed ground surveys for the presence of rare and protected species or their habitats will not be performed before a route is chosen, TPWD cannot determine a preferred route that would minimize impacts to rare species and occupied habitat if present. Based on the project description and when suitable habitat is present, the following species could potentially be impacted by project activities:

Federal and State Listed Endangered

Black-capped Vireo (Vireo atricapilla) Golden-cheeked Warbler (Dendroica chrysoparia) Tobusch fishhook cactus (Sclerocactus brevihamatus var. tobuschii)

State Listed Threatened

Zone-tailed Hawk (Buteo albonotatus) Cagle's map turtle (Graptemys caglei)

Species of Concern

Valdina Farms sinkhole salamander (Eurycea troglogdytes complex) Guadalupe bass (Micropterus treculii) Guadalupe darter (Percina sciera apristis) Cave myotis bat (Myotis velifer) Golden orb (Quadrula aurea) Texas fatmucket (Lampsilis bracteata) Big red sage (Salvia pentstemonoides)

Natural Communities

Texas Oak (Quercus buckleyi) Series

According to records in the TPWD Natural Diversity Database (NDD), an occurrence of the Tobusch fishhook cactus has been documented on Link E, and an additional occurrence of this species has been documented possibly within 1.5 miles the project area. An occurrence of the Guadalupe bass has been documented in the Guadalupe River adjacent to Link R, and occurrences of the Big red sage and the Texas Oak Series have been documented possibly within 1.5 miles of the project area. Printouts for these occurrence records are included for your planning reference. Please do not include NDD

Mr. Brian Almon Page Five

occurrence printouts in your draft or final documents. Because some species are especially sensitive to collection or harassment, these records are for your reference only.

Given the small proportion of public versus private land in Texas, NDD does not include a representative inventory of rare resources in the state. The data in the NDD do not provide a definitive statement as to the presence, absence, or condition of rare resources and cannot substitute for an on-site evaluation by your qualified biologists. Determination of the actual presence of a species in a given area depends on a number of variables such as daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency, and population density (both wildlife and human). Absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, taking into account all of the variable factors contributing to the lack of observability.

The EA states that no documented records of Tobusch fishhook cactus occur on any of the proposed alternative routes. Please note that, as stated above, a record of this species has been documented adjacent to the fenceline on Link E which is part of Route 1. Although no records of the Black-capped Vireo (BCV), Golden-cheeked Warbler (GCW), or other rare species listed above have been documented directly on the project routes, due to the limitations in NDD data described above and based on the habitat descriptions provided in the EA, these species may be present on or adjacent to the project routes.

Recommendation: Suitable habitat for the Tobusch fishhook cactus should be surveyed during the flowering season for this species, February through April. In addition to the transmission line ROW, survey locations should include the substation area, access roads, storage and staging areas, and other project related sites where vegetation disturbance could occur and potential habitat for this species is present. This cactus should be avoided during construction activities including the movement of heavy equipment between structure locations and during maintenance activities such as herbicide application. TPWD strongly recommends LCRA TSC coordinate with the US Fish and Wildlife Service (FWS) for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for this federally listed species.

Suitable habitat for the BCV and GCW within and adjacent to the transmission line ROW and project related sites should be surveyed for these species during the season specified in the FWS survey protocols. Even in areas where habitat for these species would not be directly

Mr. Brian Almon Page Six

> impacted by vegetation removal, if nesting pairs of these species are present in the surrounding vegetation they could be disrupted by noise and activity during construction. Because the definition of take in the Endangered Species Act (ESA) includes harming or harassing a listed species, this disturbance could constitute a violation of the ESA. If nesting pairs of these species are discovered in the project area, or if surveying outside of the ROW is not feasible, TPWD recommends LCRA TSC conduct project activities outside of the nesting season of the BCV and GCW. TPWD strongly recommends LCRA TSC coordinate with the FWS for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for these federally listed species.

> TPWD recommends that the project route and project related sites be surveyed for springs and spring-fed creeks. Because these features may provide habitat for rare salamander species, impacts to these habitats and their surrounding buffer vegetation should be avoided during construction. Efforts to protect water quality described in the EA such as erosion control and prevention of silt deposition and other pollution in waterways would help minimize impacts to aquatic species, including rare fish and mussels. Best management practices to protect water quality should be inspected and maintained regularly to ensure their effectiveness.

> TPWD recommends mitigation for impacts to the rare species listed above and their respective habitats. Mitigation plans should take into account cumulative and secondary impacts to fish and wildlife resources from this project combined with previous development in the area and resulting from the possible encroachment of housing developments that may be enabled by the promise of electrical service from the new transmission line. Attached is a list of rare, threatened, and endangered species that may occur in Kerr County. Please review this list, as other rare species could also be present depending upon habitat availability. If during construction, the project area is found to contain rare species, natural plant communities, or special features, TPWD recommends that precautions be taken to avoid impacts to them.

Mr. Brian Almon Page Seven

• 4

I appreciate the opportunity to review and comment on this project. Please call me at (512) 389-4579 if we may be of further assistance.

Sincerely, Ulin C. Wicher

Julie C. Wicker Wildlife Habitat Assessment Program Wildlife Division

Attachments

cc: Fernando Rodriguez, LCRA (w/attachments)

JCW:gg.12323