Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
258	Out Building	294	N	59	BK
259	House	295	N	254	BK
260	House	296	N	185	BK
261	House	297	N	143	BK
262	Out Building	298	S	195	BK
263	House	299	N	202	BK
264	House	300	N	104	BK
265	House	301	N	80	BK
266	House	302	N	83	BK
267	House	303	N	80	BK
268	House	304	N	162	BK
269	House	305	NNE	139	R1
270	House	306	N	65	BK
271	House	307	N	132	BK
272	House	308	N	152	BK
273	House	309	SSW	294	R1
274	House	310	SSW	263	R1
275	Out Building	311	S	124	BK
276	Out Building	312	NNE	125	R1
277	Out Building	313	S	108	BK
278	House	314	N	114	BK
279	House	315	N	98	BK
280	Out Building	316	N	147	BK
281	Out Building	317	S	197	BK
282	House	318	SSW	223	R1
283	Out Building	319	NNE	121	R1
284	House	320	S	81	BK
285	Out Building	321	SSW	158	R1
286	Out Building	322	S	238	BK
287	House	323	S	203	BK
288	House	324	S	235	BK
289	House	325	S	103	BK
290	House	326	S	93	BK
291	House	327	SSW	218	R1
292	House	328	S	162	BK
293	House	329	S	166	BK
294	House	330	SSW	135	R1
295	House	331	S	211	BK
296	House	332	S	300	BK
297	House	333	S	210	BK
298	House	334	S	245	BK
299	House	335	S	248	BK
300	House	336	S	120	BK

Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
301	House	337	S	108	BK
302	House	338	S	181	BK
303	Out Building	339	S	129	BK
304	House	340	S	185	BK
305	House	341	E	220	O
306	House	342	S	216	BK
307	House	343	S	240	BK
308	House	344	S	237	BK
309	Out Building	345	S	254	BK
310	House	346	S	297	BK
311	Out Building	347	SSW	222	R1
312	Out Building	348	SSW	287	R1
313	Out Building	349	SSW	288	R1
314	House	350	SSW	213	R1
315	Out Building	351	NNE	244	R1
316	House	352	NNE	242	R1
317	House	353	NNE	187	R1
318	House	354	NNE	178	R1
319	Out Building	355	SSW	217	R1
320	House	356	NNE	292	R1
321	House	357	SSW	269	R1
322	Out Building	358	SSW	184	R1
323	Out Building	359	SSW	247	R1
324	Out Building	360	SSW	285	R1
325	Out Building	361	SW	278	O
326	Out Building	362	N	253	L2
327	Out Building	363	N	236	L2
328	House	364	N	164	L2
329	House	365	E	81	O
330	Out Building	366	N	128	L2
331	Out Building	367	N	117	L2
332	Out Building	368	N	121	L2
333	Out Building	369	E	276	O
334	House	370	N	160	L2
335	Out Building	371	S	76	L2
336	Out Building	372	S	200	L2
337	House	373	S	26	BB
338	House	375	S	153	U2
339	House	377	S	168	U2
340	House	378	S	293	U2
341	House	379	N	178	Q
342	House	380	S	296	U1
343	House	381	N	244	U2

Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
344	House	382	N	278	U2
345	House	383	S	294	U2
346	House	384	S	181	Z
347	House	385	S	245	Z
348	House	386	N	274	Z
349	House	387	S	298	Z
350	House	388	W	215	Y1
351	House	389	N	269	Z
352	House	390	N	173	Z
353	House	391	S	275	Z
354	House	392	S	300	Z
355	House	393	W	231	P2
356	House	394	N	148	Z
357	House	395	E	279	Y1
358	House	396	ENE	157	AZ
359	House	397	W	282	Y1
360	House	398	W	212	Y1
361	House	399	N	212	BC
362	House	400	N	212	BC
363	House	401	N	218	BC
364	House	402	N	221	BC
365	House	403	N	221	BF
366	House	404	W	199	Y1
367	House	405	S	257	BC
368	House	406	S	257	BF
369	House	407	WSW	145	Y1
370	House	408	SSW	170	BC
371	House	409	SSW	288	BC
372	House	410	E	274	BF
373	House	411	WSW	235	Y1
374	House	412	NNE	223	BC
375	House	413	NNE	290	BC
376	House	414	NNE	255	BC
377	House	415	NNE	141	BC
378	House	416	SSW	273	BC
379	House	417	SSW	289	BC
380	House	418	SSW	244	BC
381	House	419	E	298	BF
382	House	420	WSW	275	Y1
383	House	421	W	204	BF
384	House	422	NE	292	Y1
385	House	423	WSW	199	Z
386	House	424	W	256	P4

Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
387	House	425	SW	128	Y1
388	House	426	SW	128	BC
389	House	427	NE	259	Y1
390	House	428	E	220	P4
391	House	429	NE	254	Y2
392	House	430	NE	295	Y2
393	House	431	NE	289	Y2
394	House	432	SW	285	Y2
395	House	433	E	217	P4
396	House	434	ENE	239	P4
397	House	435	SW	114	Y2
398	House	436	SW	282	Y2
399	House	437	W	201	Z
400	House	438	WSW	224	Y2
401	House	439	WSW	175	Y2
402	House	440	WSW	202	Y2
403	House	441	E	78	Z
404	House	442	N	281	T
405	House	443	N	284	T
406	House	444	NNW	267	T
407	House	445	S	241	T
408	House	446	SSE	83	T
409	House	447	N	255	T
410	House	448	N	218	T
411	House	449	N	217	T
412	House	450	N	214	T
413	House	451	SSE	260	T
414	House	452	SSE	291	T
415	House	453	S	130	T
416	House	454	S	170	T
417	House	455	S	258	T
418	House	456	W	241	Z
419	House	457	ENE	204	S1
420	House	458	S	86	AB
421	House	459	S	163	AB
422	House	460	S	173	AB
423	House	461	S	230	AB
424	House	462	W	184	S1
425	House	463	NE	296	S1
426	House	464	NE	177	S1
427	House	465	E	135	BG
428	House	466	E	208	BG
429	House	468	W	117	AB

Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
430	House	469	W	187	AB
431	House	470	W	103	AB
432	House	471	NNE	265	S3
433	House	472	W	82	AB
434	House	473	NE	288	AB
435	House	474	WSW	162	W
436	House	475	WSW	154	W
437	House	476	N	271	V
438	House	477	N	213	V
439	House	478	N	233	V
440	House	479	N	210	V
441	House	480	N	175	V
442	House	481	S	76	S3
443	House	482	N	205	S3
444	House	483	S	204	S3
445	House	484	WSW	172	AC
446	House	485	WSW	138	AC
447	House	486	ENE	282	AB
448	House	487	ENE	223	AB
449	House	488	WSW	300	AB
450	House	489	WSW	127	AB
451	House	490	ENE	272	AB
452	House	491	ENE	284	AB
453	House	492	WNW	179	AB
454	House	493	W	268	AD
455	House	494	W	218	AD
456	House	495	W	184	AD
457	House	496	W	200	AD
458	House	497	SW	255	AC
459	House	500	NNW	171	AI
460	House	501	ENE	272	AH
461	House	503	NE	282	AI
462	House	504	NE	248	AI
463	House	505	NE	218	AI
464	House	506	NE	203	AI
465	House	507	NNW	124	AL
466	House	508	ENE	236	AO
467	House	509	WSW	106	AQ
468	House	510	WSW	269	AO
469	House	511	ENE	148	AR
470	House	512	NNW	68	AT
471	House	514	S	148	BL
472	House	515	E	147	BL

Number	Type	ID	Direction From House to Line	Distance (ft)	Segment
473	House	516	WSW	322	BL
474	House	517	WSW	313	BL
475	House	518	WSW	272	BL
476	House	519	N	150	BI
477	House	520	N	182	BI
478	House	521	N	170	BI
479	House	522	N	96	BI

Routes 10 and 11 have the fewest habitable structures within 300 ft. However, the Woodforest development has approximately 145 undeveloped lots within 300 ft of link BL that are under contract for development within the next year. With the potential addition of these habitable structures Routes 10 and 11 would not be the preferred routes from a habitable structures perspective. Routes 5 and 12, which do not include link BL, would then have the least amount of habitable structures, and therefore, would be preferred from an urban/residential perspective.

7.3.1.4 Park and Recreational Areas

The evaluation of potential impacts to park and recreational areas considered the disruption or preemption of recreational activities.

Routes 6, 10, 11, and 12 do not cross or have any park or recreational areas within 1,000 ft of their proposed centerline. Routes 1, 2, 4, and 5 do not cross any park or recreational areas, but do have one neighborhood park within 1,000 ft of the route centerline Routes 3, 7, 8, 9, 13, and 14 are the least preferred because they are within 1,000 ft of the neighborhood park, and they cross a park/recreation area, the privately operated YMCA Camp Owen (approximately 3,038 ft).

The routes that cross YMCA Camp Owen could result in temporary impacts during various phases of construction. Construction activities would potentially limit access to the portion of the camp crossed by the proposed transmission line. In addition to these temporary impacts, there would likely be visual impacts caused by the addition of transmission line structures into the view shed. YMCA Camp Owen is too large to span. Should a route across the camp be chosen, efforts will be made to increase span length in order to reduce physical and visual impacts.

Routes 3, 7, 8, 9, 13, and 14, which are within 1,000 ft of neighborhood park and YMCA Camp Owen, will potentially be visible from these recreational facilities, for approximately 8,928 ft of their total length. No other routes are expected to impact the visual environment of a park or recreational area.

7.3.1.5 Transportation and Aviation

No long term impacts are anticipated to the transportation system of the project area due to the construction of the proposed project. Short term impacts may occur during construction which would result in a temporary disruption of traffic service.

Routes 5, 10, 11 and 12 cross the least number of roads, (three state or U.S. highways and between 14 to 22 FM and county roads). Routes 3, 8, and 9 cross only three state or U.S. highways and between 23 and 25 and FM or county roads. Routes 1, 2, 4, 6, 7, 13, and 14 cross four state or U.S. highways and between 29 and 36 FM or county roads.

Average structure heights will be approximately 100 ft from the ground to the top of the pole. The PUCT requires that all known private airstrips and all airports registered with the FAA having no runway more than 3,200 ft in length within 10,000 ft of the route centerline are identified. For private airstrips, no FAA notification is required. For all public-use airports registered with the FAA having no runway more than 3,200 ft in length, the FAA would be notified if the proposed transmission line structures exceed a 50:1 horizontal slope from the closest point of the closest runway. The PUCT also requires that all public-use airports registered with the FAA having at least one runway more than 3,200 ft in length within 20,000 ft of the route centerline are identified. For all public-use airports registered with the FAA with at least one runway more than 3,200 ft in length, the FAA would be notified if the proposed transmission line structures exceed a 100:1 horizontal slope from the closest point of the closest runway. The PUCT also requires that all heliports within 5,000 ft of the route centerline be identified. For all public-use heliports, the PUCT requests whether or not any transmission line structures will exceed a 25:1 horizontal slope from the closest point of the closest landing and takeoff area of the heliport.

Burns & McDonnell identified airports and heliports along the alternative routes from field reconnaissance surveys, aerial interpretation, aeronautical charts, and GIS data obtained from BTS (BTS, 2011).

No FAA registered airstrips having runways greater than 3,200 ft or private airstrips were identified within 20,000 ft. One heliport was identified within 5,000 ft of alternative routes 3, 7, 8, 9, 12, and 14.

Routes 1, 2, 4, 6, 7, 9, 13, and 14 would have two FAA-registered airports with runways less than 3,200 ft in length within 10,000 ft of the routes. Routes 3, 5, 8, 10, 11, and 12 would have three FAA registered airports with runways less than 3,200 ft in length within 10,000 ft of the routes.

Route 2 is the only route without a private airstrip within 10,000 ft of the route. Routes 3, 4, 5, 6, 8, 10, 11, and 12 all have one private airstrip within 10,000 ft.

Table 7-2 illustrates the FAA registration status of the airstrip, the name of the airstrip (if known), and the direction and distance of the airstrip from the closest link.

Based on Burns & McDonnell's preliminary calculations, FAA notification will not be required for any of the identified airport/airstrips. No impacts to the operation of any of the airstrips/airports located in the project area are anticipated.

Table 7-2: Airport/Airstrips along the Alternative Routes

Name	Type	Direction to Nearest Link	Distance	Link	FAA Notification
Crosswinds Ranch	Private Airstrip	E	12108	AC	No
Crosswinds Ranch	Private Airstrip	S	4069	S3	No
Crosswinds Ranch	Private Airstrip	SE	7255	V	No
Crosswinds Ranch	Private Airstrip	SE	7255	AD	No
Private Airstrip	Private Airstrip	W	6480	Y1	No
Private Airstrip	Private Airstrip	S	10134	T	No
Private Airstrip	Private Airstrip	N	15153	Z	No
Private Airstrip	Private Airstrip	S	14388	AA	No
Private Airstrip	Private Airstrip	S	14439	W	No
Private Airstrip	Private Airstrip	S	10134	X	No
Private Airstrip	Private Airstrip	W	6480	BC	No
Private Airstrip	Private Airstrip	SW	4896	Y2	No
Lake Bonanza	Private Airstrip	NE	7803	K1	No
Lake Bonanza	Private Airstrip	NE	8931	M	No
Lake Bonanza	Private Airstrip	E	14987	N	No
Lake Bonanza	Private Airstrip	E	14656	O	No
Lake Bonanza	Private Airstrip	E	15640	R1	No
Lake Bonanza	Private Airstrip	E	15888	Q	No
Lake Bonanza	Private Airstrip	E	15888	P1	No
Lake Bonanza	Private Airstrip	W	18984	H2	No
Lake Bonanza	Private Airstrip	W	17700	BJ	No
Lake Bonanza	Private Airstrip	W	17849	H3	No
Lake Bonanza	Private Airstrip	NE	6314	L1	No
Lake Bonanza	Private Airstrip	E	6798	L2	No
Lake Bonanza	Private Airstrip	NW	17700	BI	No
Lake Bonanza	Private Airstrip	NE	8931	BL	No
Lake Bonanza	Private Airstrip	N	8845	I2	No
Lake Bonanza	Private Airstrip	NW	3377	BM	No
Lake Bonanza	Private Airstrip	NW	7187	H5	No
Lake Bonanza	Private Airstrip	N	3030	BN	No

Name	Type	Direction to Nearest Link	Distance	Link	FAA Notification
Lake Bonanza	Private Airstrip	NW	3377	BK	No
Marmack	Private Airstrip	E	19204	U2	No
Marmack	Private Airstrip	NW	16341	K1	No
Marmack	Private Airstrip	N	7942	M	No
Marmack	Private Airstrip	NE	505	N	No
Marmack	Private Airstrip	N	3127	O	No
Marmack	Private Airstrip	NE	7074	R1	No
Marmack	Private Airstrip	N	505	Q	No
Marmack	Private Airstrip	E	11676	BB	No
Marmack	Private Airstrip	E	11367	U1	No
Marmack	Private Airstrip	E	17539	AZ	No
Marmack	Private Airstrip	NE	486	P1	No
Marmack	Private Airstrip	E	19205	BE	No
Marmack	Private Airstrip	E	17539	P2	No
Marmack	Private Airstrip	NW	10973	L1	No
Marmack	Private Airstrip	N	3127	L2	No
Marmack	Private Airstrip	NW	17136	BL	No
Marmack	Private Airstrip	NW	17136	I2	No
Marmack	Private Airstrip	W	17933	BM	No
Marmack	Private Airstrip	NW	16341	H5	No
Marmack	Private Airstrip	NW	10973	BN	No
Marmack	Private Airstrip	W	17933	BK	No

7.3.1.6 Utilities

As previously discussed, a considerable amount of each of the alternative routes will parallel existing utilities, primarily existing transmission lines, and existing pipelines. When paralleling existing utility corridors, the proposed transmission line will not share any ROW with the existing utilities but instead will be located immediately adjacent to the existing ROWs. This separation will minimize potential impacts to existing utilities in the area. In addition, the proposed project will cross numerous existing utilities. In both cases, where the proposed project either crosses or parallels an existing utility, some mitigation measures may be required to protect the existing utilities. Once a final route is approved, detailed studies regarding the potential impact of the proposed project on existing utilities will be conducted and appropriate mitigation measures will be taken where necessary.

7.3.1.7 Communication Towers

The identification of communication towers were determined through GIS data obtained from the FCC, aerial interpretation, and field reconnaissance surveys. The PUCT requires the identification of the following communication towers:

- Commercial AM radio transmitters within 10,000 ft of the route centerline.
- All FM radio transmitters, microwave relay stations, or other similar electronic installations within 2,000 ft of the centerline (for this report, those towers fitting this second definition will be referred to collectively as "communication" towers, due to the bulk of them being cellular towers).

There are no commercial AM or FM communication towers within 10,000 ft of any of the alternative routes. However, several other similar electronic installations exist within 2,000 ft of the routes (Table 7-3). Route 2, 4, and 6 have 12 to 14 communication towers within 2,000 ft. Routes 7, 8, and 14 w have 48 to 54 communication towers within 2,000 ft. The additional routes range from 19 to 45 towers within 2,000 ft. Table 7-3 is a comprehensive table of all types of electronic installations within 2,000 ft of the alternative routes.

Table 7-3: Communication Towers within 2,000 ft of Alternative Routes

Callsign	FCC Tower Type	Direction to Center Line	Distance (ft)	Link
WPJV202	LM_Private	S	862	B
WPJV202	LM_Private	S	1123	D
WPJV202	LM_Private	W	493	BI
WPJY381	LM_Private	S	862	B
WPJY381	LM_Private	S	1123	D
WPJY381	LM_Private	W	493	BI
WPKW336	LM_Private	S	862	B
WPKW336	LM_Private	S	1123	D
WPKW336	LM_Private	W	493	BI
WQPF735	LM_Private	S	862	B
WQPF735	LM_Private	S	1123	D
WQPF735	LM_Private	W	493	BI
WQLT805	LM_Private	E	1454	BM
WQLT805	LM_Private	S	1664	H5
WPGX444	LM_Private	N	913	BK
WQJB546	LM_Private	N	863	BK
WPRR346	LM_Private	N	1045	BK
WQNU448	LM_Private	N	288	BK
KGL728	LM_Private	N	288	BK
WQDE341	LM_Private	E	717	S1
WNAJ808	LM_Private	NE	1605	S3
WQJB544	LM_Private	SW	214	AI
WNME746	LM_Private	SW	565	AI
WPQC453	LM_Private	SE	125	AK

Callsign	FCC Tower Type	Direction to Center Line	Distance (ft)	Link
WPQC453	LM_Private	NE	307	AL
WPQC453	LM_Private	NE	307	AP
KNNU471	LM_Private	S	1617	AL
KQS381	LM_Private	S	1617	AL
KKE919	LM_Private	S	1617	AL
WPRK399	LM_Private	SW	283	AO
WPRK399	LM_Private	SE	647	AT
WPRK399	LM_Private	E	330	AY
WPRK399	LM_Private	SE	716	AV
WPRK399	LM_Private	E	346	AX
WPSU445	LM_Private	SW	283	AO
WPSU445	LM_Private	SE	647	AT
WPSU445	LM_Private	E	330	AY
WPSU445	LM_Private	SE	716	AV
WPSU445	LM_Private	E	346	AX
WNXR864	LM_Private	SW	1514	AO
WNXR864	LM_Private	SW	1167	AT
WNXR864	LM_Private	S	182	AY
WNXR864	LM_Private	S	1132	AV
WNXR864	LM_Private	SW	932	AX
WQML481	LM_Comm	S	826	U2
WQML481	LM_Comm	SW	565	Y1
WQML481	LM_Comm	S	819	Z
KNKN336	Cellular	S	706	Z
KNKN494	Cellular	NW	1633	AT
KNKN494	Cellular	W	1448	AP
WQJK836	Microwave	N	297	BB
WQJK836	Microwave	NE	351	R1
WNTZ795	Microwave	S	1671	AL
WLL680	Microwave	NW	1537	AT
WLL680	Microwave	W	1362	AP
WPJA812	Microwave	NW	1537	AT
WPJA812	Microwave	W	1362	AP
WPJA813	Microwave	NW	1537	AT
WPJA813	Microwave	W	1362	AP
WQIB354	Microwave	NW	1537	AT
WQIB354	Microwave	W	1362	AP
WQID748	Microwave	NW	1537	AT
WQID748	Microwave	W	1362	AP
WEG471	Microwave	SW	1487	AO
WEG471	Microwave	SW	1219	AT

Callsign	FCC Tower Type	Direction to Center Line	Distance (ft)	Link
WEG471	Microwave	S	317	AY
WEG471	Microwave	S	1208	AV
WEG471	Microwave	SW	922	AX
WQMG548	Microwave	SW	1487	AO
WQMG548	Microwave	SW	1219	AT
WQMG548	Microwave	S	317	AY
WQMG548	Microwave	S	1208	AV
WQMG548	Microwave	SW	922	AX
License ID	**FCC Tower Type**	**Direction to Center Line**	**Distance (ft)**	**Link**
L00000499	ASR	S	971	I2
L00000499	ASR	NW	1559	BM
L00000499	ASR	NW	1559	H5
L01702111	ASR	SW	1694	BI
L01031889	ASR	W	895	BM
L01031889	ASR	NW	1475	BN
L01031889	ASR	N	1077	BK
L00005110	ASR	N	180	BK
L00024153	ASR	S	730	Z
L00759842	ASR	W	806	Y1
L01230762	ASR	E	350	P4
L00132178	ASR	SW	747	AD
L00283395	ASR	W	1291	AD
L01050823	ASR	E	779	AB
L00008376	ASR	S	1820	AL
L00220201	ASR	NW	1537	AT
L00220201	ASR	W	1362	AP
L00009875	ASR	SW	1487	AO
L00009875	ASR	SW	1219	AT
L00009875	ASR	S	317	AY
L00009875	ASR	S	1208	AV
L00009875	ASR	SW	922	AX

FCC, 2012.

No significant impacts to the operation of communication installations are anticipated from any of the alternative routes.

7.3.2 Socioeconomic Patterns

This section addresses the potential impacts (both positive and negative) of the proposed project on the socioeconomic patterns along the alternative routes, including population, employment, and income.

7.3.2.1 Population

Construction and operation of the proposed transmission line along any of the proposed alternate routes would not directly result in a change to the population in the study area. The project would, however, help to provide the electrical needs for a growing population in Texas. Reliable electric service is important to residents and a significant factor in the location of many industries.

7.3.2.2 Employment and Income

Construction and operation of the proposed transmission line along any of the alternative routes would not significantly affect long-term employment in the study area. Transmission construction activities will occur over a one to two year timeframe and maintenance requirements are low. The presence of additional workers and increased employment would increase retail sales in the project area due to the purchases of food, fuel, and other merchandise. The project would increase the tax base in counties crossed by the proposed project, regardless of which route is selected.

7.3.2.3 Visual Character

Aesthetic impacts, or impacts on visual resources, exist when the ROW, transmission lines, and/or structures of a transmission line create an intrusion into, or substantially alter the character of, the existing view. The significance of the impact is directly related to the quality of the view, in the case of natural scenic areas, or to the importance of the existing setting in the use and/or enjoyment of an area, in the case of valued community resources and recreational areas.

The assessment of aesthetic impacts to the visual character along the alternative routes was determined through field reconnaissance surveys and review of GIS mapping data. The evaluation focused on the potential view of the proposed project from park and recreational areas and from state and U.S. highways. The view shed for both parks and roads were defined as a one half mile buffer around the park and recreation area or highway.

Routes 5, 10, and 12 are within the view shed of approximately 2.7 miles to 3.0 miles of state/U.S. highways, but were not within the view shed of any park/recreational areas.

Routes 4, 6, and 11 are within the view shed of approximately 3.1 miles to 3.5 miles of state/U.S. highways, but were not within the view shed of any park/recreational areas.

Routes 1 and 2 are within the view shed of approximately 3.8 miles to 5.4 miles of state/U.S. highways, but were not within the view shed of any park/recreational areas.

Route 13 is within the view shed of approximately 4.4 miles of state/U.S. highways and within approximately 0.7 miles of view shed of a park/recreational areas.

Routes 3, 7, 8, 9, and 14 are within the view shed of approximately 3.3 miles to 4.4 miles of state/U.S. highways and within the view shed of approximately 1.7 miles of a park/recreational areas (YMCA Camp Owen).

Routes 5, 10, and 12 have the least amount of length within the view shed of state/U.S. highways and they are not within the view shed of any park/recreational areas. Routes 3, 7, 8, 9, and 14 have the most length within the view shed of state/U.S. highways and park/recreational areas.

7.4 Summary of Human Resources

In summary, Routes 1, 5, 6, and 12 have the least potential impact from a land use and human resource perspective. Routes 10 and 11 currently have the fewest habitable structures but could potentially have additional habitable structures from the Woodforest Development. Therefore routes 1, 5, 6, and 12 are generally the furthest from municipalities; they do not cross any park/recreational areas; and they have the largest percentage of length through rangeland.

7.5 Impacts on Cultural Resources

Construction activities associated with any proposed construction project have the potential to adversely impact cultural resources. The effects that could adversely affect a cultural resource eligible for the NRHP are discussed in 36 CFR 800 and include: destruction or alteration of all or part of a property (NRHP Eligible Property); isolation from or alteration of the property's surrounding environment (setting); or introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.

Impacts may be direct or indirect. Direct impacts typically occur during construction. Indirect impacts include those caused by construction that occur later in time or are further removed, but are foreseeable. These impacts may include visual impacts, alterations in the pattern of land use, changes in population density, or accelerated growth rates, all of which may have an impact on properties with historical, architectural, archaeological or cultural significance.

Although a cultural resources survey has not been conducted, High Probability Areas (HPAs) along the alternative routes have been identified using USGS topographic maps. Locations of cultural resource sites have not been included as this information is not intended for public use or dissemination. HPAs are locations that are identified as having a high probability for the occurrence of prehistoric and historic sites

and include areas where the proposed project crosses rivers and major streams, river/stream confluences, alluvial terraces, wide floodplains, and upland high spots near water sources. While prehistoric populations in this area seem to have been highly mobile throughout time, larger prehistoric sites are more common in naturally wooded areas by water as this provided more protection. The adjacent prairies were used for resource procurement. Conversely, early historic settlers were attracted to the rich bottomlands along rivers and streams, preferring the prairie to the wooded areas.

The Texas Archaeological Research Laboratory (TARL) provided GIS databases containing archaeological site locations. Previously surveyed areas, National Register site locations, and historic sites were retrieved from the Texas Historical Commission's (THC) online FTP site. The THC online Archeological Sites Atlas was also reviewed in an effort to identify all known and recorded archaeological sites and historic resources within 1,000 ft of the centerline of the alternative routes.

7.5.1 Cultural Resources Summary

There are 13 known/recorded cultural resources within 1,000 ft of the centerline of the alternative routes (Tables 7-4 and 7-5). None of the sites are directly crossed by a route, and none of the resources are listed on the NRHP, designated as Texas State Archeological Landmarks (SAL), or recorded as Texas Historical Landmarks. Six of the resources are archaeological sites and their site forms were reviewed using the THC online Archeological Sites Atlas website. All or portions of four of the sites have been recommended not eligible for the NRHP or as SALs (41GM5, 41GM125, 41GM419, 41MQ217). Further investigation was recommended at the two remaining sites (41GM82 and 41MQ217). Seven of the cultural resources within 1,000 ft of the centerline of the alternative routes are historic cemeteries. Unmarked burials are always a concern with cemeteries so a buffer of 100 feet between the proposed Project and any cemetery is recommended.

Table 7-4: Previously Recorded Cultural Resources within 1,000 Feet of Alternative Routes

Site Number	Distance (ft)	Direction	Link	Route(s)	Description	Additional Investigation Recommended
41GM5	175	SW	AC	1, 5, 7, 8, 9, 13, 14	Historic	Y (1980); N (for portion surveyed in 2012)
41GM82	300	NE	AC	1, 5, 7, 8, 9, 13, 14	Prehistoric	Y
41GM125	535	W	AB	2, 4, 6	Prehistoric	N
41GM419	800	NE	AD	3, 10, 11, 12	Prehistoric	N

Site Number	Distance (ft)	Direction	Link	Route(s)	Description	Additional Investigation Recommended
41MQ217	850	SW	BC	9	Prehistoric	Y
41MQ292	150	N	T	5	Prehistoric	N

Table 7-5: Cemeteries within 1,000 Feet of Alternative Routes

Cemetery Name	Distance (ft)	Direction	Link(s)	Route(s)	Description
Mason	930	W	AB	2, 4, 6	1900s, maintained, fenced
Coaxberry Baptist Church	200	E	Z	2	Maintained, fenced, by church
Unknown Cemetery #4 near Dobbin	710	N	U2	1, 2, 4, 6, 7, 13, 14	
Post Oak	70	NE	Y2	1, 4, 6, 7, 9, 13, 14	1900s
Womack-Cawthorn-Sturges	240	N	U1	7	Concrete grave covers, approx. 4 burials, earliest about 1840s or 1850s
	285	NW	U1 and Q intersection	7	
Yell Cemetery #1	735	N	Q	7	
Martin Cemetery #2 or Martin Hill Cemetery	965	S	BB	1, 2, 4, 6, 13, 14	Burials 1879 to present, fenced, some unmarked graves
	935	S	BB and R1 intersection	1, 2, 4, 6, 13, 14	

Table 7-5 shows the number of recorded cemeteries within 1,000 ft of a route/link. Alternative Route 7 has six recorded HPA or cultural resources within 1,000 feet of the centerline, which is the most of all the alternative routes. Alternative Routes 1, 2, 4, 6, 13, and 14 all have five recorded HPA or cultural resources within 1,000 feet of the centerline. Alternative Route 9 and four recorded HPA or cultural resources, Alternative Route 5 has three recorded cultural resources, Alternative Route 8 has two recorded cultural resources, and Alternative Routes 3, 10, 11, and 12 all have one recorded cultural resource. The cemeteries that are within 1,000 feet of the Alternative Routes are concentrated in the Blackland Prairie that is in the west and south-central part of the project. In general, the study area is rural and has not experienced many professional cultural resources surveys. Of all the surveys completed within one mile of the alternative routes, most of them are along the southeast leg of alternative routes south of Lake

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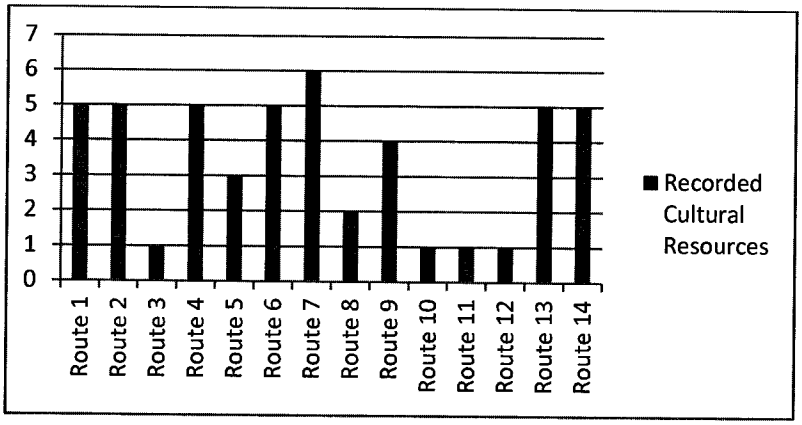
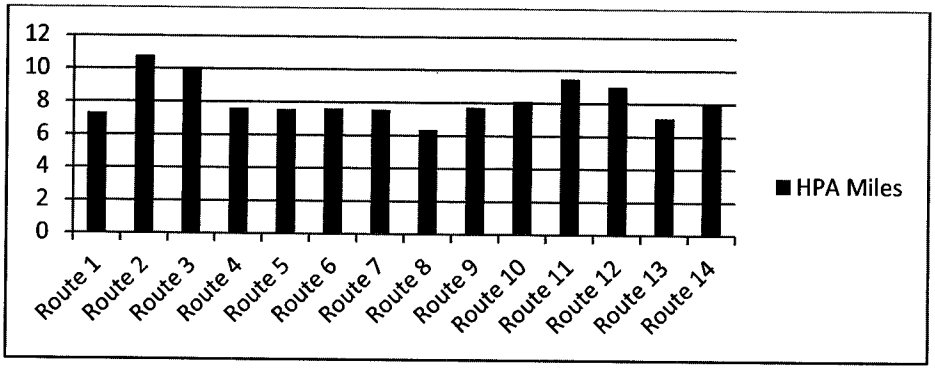
Conroe. All of the recorded archaeological sites are along the eastern route links north of the southeast leg that extends south of Lake Conroe. Most of the cultural resources surveys done south of Lake Conroe did record cultural resources, although none of them are within 1,000 feet of the alternative routes in this section of the Project. Since much of the environment is suitable for past human occupation, the record of known cultural resources may not be representative of what is actually there.

Table 7-6: Recorded Cultural Resources within 1,000 ft of Each Alternative Route



The HPAs are all previously unsurveyed areas along the alternative routes that have a high probability of containing prehistoric cultural resources. The amount of HPAs along the alternative routes range between 6.39 miles on Alternative Route 8 and 10.79 miles on Alternative Route 2 (Tables 7-6, and 7-7). The far southeastern portion of the study area has a concentration of HPAs because routes in this area cross the San Jacinto River and its wide floodplain. But this area cannot be avoided as there are no alternatives that do not cross the floodplain. Following PUCT approval for the proposed transmission line, a cultural resources survey along the final route may be required by the PUCT and/or the THC.

Table 7-7: High Probability Areas (HPAs) Along the Alternative Routes



8.0 LIST OF PREPARERS

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Education: B.S. Environmental Science

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APPENDIX A - AGENCY CORRESPONDENCE

APPENDIX A- TABLE OF CONTENTS

220

February 5, 2013

Region VI Environment & Historic Preservation
Federal Emergency Management Agency (FEMA)
FRC 800 North Loop 288
Denton, TX 76209-3698

Request for Information
Entergy Texas, Inc. Proposed Ponderosa to Grimes 230kV Transmission Line Project

BMcD Project number: 71136

To whom it may concern:

Entergy Texas, Inc. (Entergy) is proposing to construct a new 230 kilovolt (kV) overhead electric transmission line to connect the proposed Ponderosa Switching Station on the southwest side of Conroe, in Montgomery County, Texas to the existing Grimes Substation near Shiro, in Grimes County, Texas. Please refer to the enclosed map for the location and details of the project area.

Burns & McDonnell is requesting your assistance identifying the human and natural resources in the study area regarding any routing constraints or opportunities within the area. Routing constraints include those areas or resources which may not be compatible with transmission line construction, such as airports, protected species habitat, or dense residential areas. Routing opportunities include such things as previously disturbed areas, industrial corridors, and existing utility rights-of-way. Your input on any of the following resources will assist the project team in developing preliminary alternative routes that take advantage of opportunities while minimizing potential environmental and land use impacts.

Specifically, we are requesting that your office provide information regarding any environmental or land use constraints associated with floodplains, or any other areas of concern to the Federal Emergency Management Agency by March 1, 2013. The information we collect will be used to assist Entergy in developing its application before the Public Utility Commission of Texas to seek a Certificate of Convenience and Necessity for this project. We appreciate your assistance. Please contact Melissa Misplay at (972) 455-3123 if you have any questions or require additional information.

Sincerely,

Tony Bassak, AICP, GISP
Project Manager

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OVERSIZED DOCUMENT(S)

TO VIEW

OVERSIZED DOCUMENT(S)

PLEASE GO TO

CENTRAL RECORDS

(512) 936-7180

U.S. Department of Homeland Security
Region VI
800 N. Loop 288
Denton, TX 76209-3698

FEMA

February 13, 2013

Tony Bassak
Burns & McDonnell
15950 N. Dallas Pky., Ste.700
Dallas, TX 75248-6630

RE: Entergy Texas, Inc.'s Proposed Ponderosa to Grimes 230kV Transmission Line Project-Grimes and Montgomery Counties

Dear Mr. Bassak:

We have received your letter dated February 5, 2013 for the above referenced project. Thank you for the opportunity to comment on the proposed project.

The concerns of the Federal Emergency Management Agency (FEMA) are directed toward the National Flood Insurance Program (NFIP) and the possible negative impact upon identified special flood hazard areas within the outlined project boundaries.

Both Grimes and Montgomery Counties participate in the National Flood Insurance Program (NFIP). Therefore, any development that takes place within the counties must be reviewed and appropriate permits issued to ensure compliance with its adopted Flood Damage Prevention Ordinance. .Our records show that Michael Pishner is the current Floodplain Administrator for Grimes County; he can be reached at (936) 873-4404. Mark Mooney is the current Floodplain Administrator for Montgomery County; he can be reached at (936) 539-7833.

Coordination with the Floodplain Administrators for the counties can ensure that this project is in compliance with their Flood Damage Prevention Ordinance and any other regulations/requirements.

Sincerely,

for Donetta Walsh, CFM
Natural Hazards
Program Specialist

223

February 5, 2013

Mr. Salvador Salinas
Texas State Conservationist
Natural Resource Conservation Service
101 South Main St.
Temple, TX 76501

Request for Information
Entergy Texas, Inc. Proposed Ponderosa to Grimes 230kV Transmission Line Project

BMcD Project number: 71136

Dear Mr. Salinas:

Entergy Texas, Inc. (Entergy) is proposing to construct a new 230 kilovolt (kV) overhead electric transmission line to connect the proposed Ponderosa Switching Station on the southwest side of Conroe, in Montgomery County, Texas to the existing Grimes Substation near Shiro, in Grimes County, Texas. Please refer to the enclosed map for the location and details of the project area.

Burns & McDonnell is requesting your assistance identifying the human and natural resources in the study area regarding any routing constraints or opportunities within the area. Routing constraints include those areas or resources which may not be compatible with transmission line construction, such as airports, protected species habitat, or dense residential areas. Routing opportunities include such things as previously disturbed areas, industrial corridors, and existing utility rights-of-way. Your input on any of the following resources will assist the project team in developing preliminary alternative routes that take advantage of opportunities while minimizing potential environmental and land use impacts, including the following:

- Land Use (current or proposed land development projects, park/recreation areas, etc.)
- Aesthetics
- Water quality and wetlands
- Soils and geology
- Wildlife, vegetation, and fisheries (including threatened and endangered species)
- Socioeconomics (population, employment, growth, current/future development)
- Cultural resources (historic and archaeological)
- Transportation and roads (airport and roadway expansions, construction, operations, and maintenance)

In addition to the above requested items, we are also requesting information regarding any permits or any type of approval for construction of the proposed transmission line within your jurisdiction.

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Your input is important and we would appreciate any feedback by March 1, 2013. The information we collect will be used to assist Entergy in developing its application before the Public Utility Commission of Texas to seek a Certificate of Convenience and Necessity for this project.

We appreciate your assistance. Please contact Melissa Misplay at (972) 455-3123 if you have any questions or require additional information.

Sincerely,

Tony Bassak, AICP, GISP
Project Manager

Enclosure

225

United States Department of Agriculture
NRCS
Natural Resources Conservation Service

101 S. Main Street
Temple, TX 76501-6624
Phone: 254-742-9826
FAX: 254-742-9859

February 21, 2013

Burns&McDonnell
15950 N. Dallas Parkway
Suite 700
Dallas, Texas 75248

Attention: Melissa Misplay

Subject: LNU-Farmland Protection
Proposed Ponderosa to Grimes 230 kV Transmission Line
Montgomery and Grimes Counties, Texas

We have reviewed the information provided in your correspondence dated February 5, 2013 concerning the proposed transmission line in Montgomery and Grimes Counties, Texas. This review is part of the National Environmental Policy Act (NEPA) evaluation for Public Utility Commission of Texas (PUCT). We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

An FPPA determination cannot be made at this time regarding the environmental impact the project may have. We will require specific location information which can be obtained at http://websoilsurvey.nrcs.usda.gov . We've attached a Prime Farmland map to aid in your determination. Avoiding Prime Farmland areas will minimize the loss of Farmland.

If you have any questions, please contact me at (254) 742-9854, Fax (254) 742-9859 or by email at drew.kinney@tx.usda.gov.

Sincerely,

Drew Kinney

Drew Kinney
NRCS GIS Specialist

Attachment

226

OVERSIZED DOCUMENT(S)

TO VIEW

OVERSIZED DOCUMENT(S)

PLEASE GO TO

CENTRAL RECORDS

(512) 936-7180

United States Department of Agriculture
NRCS
Natural Resources Conservation Service

101 S. Main Street
Temple, TX 76501-6624
Phone: 254-742-9826
FAX: 254-742-9859

February 21, 2013

Burns&McDonnell
15950 N. Dallas Parkway
Suite 700
Dallas, Texas 75248

Attention: Melissa Misplay

Subject: LNU-Farmland Protection
Proposed Ponderosa to Grimes 230 kV Transmission Line
Montgomery and Grimes Counties, Texas

We have reviewed the information provided in your correspondence dated February 5, 2013 concerning the proposed transmission line in Montgomery and Grimes Counties, Texas. This review is part of the National Environmental Policy Act (NEPA) evaluation for Public Utility Commission of Texas (PUCT). We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

An FPPA determination cannot be made at this time regarding the environmental impact the project may have. We will require specific location information which can be obtained at http://websoilsurvey.nrcs.usda.gov . We've attached a Prime Farmland map to aid in your determination. Avoiding Prime Farmland areas will minimize the loss of Farmland.

If you have any questions, please contact me at (254) 742-9854, Fax (254) 742-9859 or by email at drew.kinney@tx.usda.gov.

Sincerely,

Drew Kinney

Drew Kinney
NRCS GIS Specialist

Attachment

228

Phone Memorandum

Subject: Entergy Ponderosa to Grimes

From: USDA NRCS (Drew Kinney)

Date: 4/9/2013

Re: Consultation Letter Correspondence

I spoke with Drew Kinney and he told me that he would email the prime farmland map to help with our study. He also mentioned that we could go to the USDA website to find hydric soils as well as any wildlife easements that may be within our study area. No further coordination is required at this time. Drew Kinney (NRCS GIS Specialist- 254-742-9854)

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Misplay, Melissa

From: Kinney, Drew - NRCS, Temple, TX <Drew.Kinney@tx.usda.gov>
Sent: Tuesday, March 05, 2013 2:01 PM
To: Misplay, Melissa
Cc: Shock, Nadine - NRCS, Temple, TX
Subject: Transmission Lines in Grimes and Montgomery Counties, TX.
Attachments: Grimes Hydric Soils.pdf; Montgomery Hydric Soils.pdf; Grimmes and Montgomery Farmland Classes.pdf

Melissa,
Attached are the hydric soils list for both Grimes and Montgomery counties. Also included is a map of the farmland classes for the respective counties. If you have any question please contact me at the number below.

Thank you.

Drew Kinney
Soil Scientist/GIS Specialist
101 S. Main St.
Temple, TX 76501
(254) 742-9854

Hydric Soils

Grimes County, Texas

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
BgD:					
Boy fine sand, 1 to 8 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	3
Bp:					
Brazoria clay, depressional	Brazoria	90	Flood plains	Yes	3
Gd:					
Gladewater clay, frequently flooded	Gladewater	90	Flood plains	Yes	4
Ka:					
Kaman clay, frequently flooded	Kaman	90	Flood plains	Yes	4
LuA:					
Lufkin fine sandy loam, 0 to 1 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	3
Na:					
Nahatche clay loam, frequently flooded	Unnamed, hydric minor components	10	Flood plains	Yes	4
On:					
Oklared-Norwood complex, frequently flooded	Unnamed, hydric minor components	10	Depressions	Yes	3
RaA:					
Rader fine sandy loam, 0 to 1 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	2B3, 3
Wa:					
Waller loam, 0 to 1 percent slopes	Waller	90	Depressions	Yes	2B3

Hydric Soils

Montgomery County, Texas

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
Bb:					
Bibb soils, frequently flooded	Bibb	95	Flood plains	Yes	2B3, 4
Cw:					
Crowley fine sandy loam	Unnamed, hydric minor components	5	Depressions	Yes	2B3, 3
Ek:					
Edna-Katy complex	Unnamed, hydric minor components	5	Depressions	Yes	2B3, 3
Ka:					
Katy fine sandy loam	Unnamed, hydric minor components	10	Depressions	Yes	2B3, 3
Kc:					
Kaufman clay, frequently flooded	Kaufman	95	Flood plains	Yes	4
Oc:					
Osler-Alaga complex	Osler	40	Stream terraces	Yes	2B2
So:					
Sorter silt loam	Sorter	90	Flats	Yes	2B3, 3
Sp:					
Splendora fine sandy loam	Sorter	10	Flats	Yes	2B3, 3
Tc:					
Trinity clay, frequently flooded	Trinity, AFFR 25-30	95	Flood plains	Yes	4
Tk:					
Aris loam, heavy substratum	Aris	90	Flats	Yes	2B3
Tu:					
Gladewater clay, frequently flooded	Gladewater	95	Flood plains	Yes	4
Wa:					
Waller loam	Waller	98	Flats	Yes	2B3
We:					
Waller soils, ponded	Waller	98	Flats	Yes	2B3, 3

Hydric Soils

Grimes County, Texas

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
BgD:					
Boy fine sand, 1 to 8 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	3
Bp:					
Brazoria clay, depressional	Brazoria	90	Flood plains	Yes	3
Gd:					
Gladewater clay, frequently flooded	Gladewater	90	Flood plains	Yes	4
Ka:					
Kaman clay, frequently flooded	Kaman	90	Flood plains	Yes	4
LuA:					
Lufkin fine sandy loam, 0 to 1 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	3
Na:					
Nahatche clay loam, frequently flooded	Unnamed, hydric minor components	10	Flood plains	Yes	4
On:					
Oklared-Norwood complex, frequently flooded	Unnamed, hydric minor components	10	Depressions	Yes	3
RaA:					
Rader fine sandy loam, 0 to 1 percent slopes	Unnamed, hydric minor components	10	Depressions	Yes	2B3, 3
Wa:					
Waller loam, 0 to 1 percent slopes	Waller	90	Depressions	Yes	2B3

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
Federal Register. September 18, 2002. Hydric soils of the United States.
Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
National Research Council. 1995. Wetlands: Characteristics and boundaries.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

Hydric Soils

Montgomery County, Texas

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
Bb:					
Bibb soils, frequently flooded	Bibb	95	Flood plains	Yes	2B3, 4
Cw:					
Crowley fine sandy loam	Unnamed, hydric minor components	5	Depressions	Yes	2B3, 3
Ek:					
Edna-Katy complex	Unnamed, hydric minor components	5	Depressions	Yes	2B3, 3
Ka:					
Katy fine sandy loam	Unnamed, hydric minor components	10	Depressions	Yes	2B3, 3
Kc:					
Kaufman clay, frequently flooded	Kaufman	95	Flood plains	Yes	4
Oc:					
Osier-Alaga complex	Osier	40	Stream terraces	Yes	2B2
So:					
Sorter silt loam	Sorter	90	Flats	Yes	2B3, 3
Sp:					
Splendora fine sandy loam	Sorter	10	Flats	Yes	2B3, 3
Tc:					
Trinity clay, frequently flooded	Trinity, AFFR 25-30	95	Flood plains	Yes	4
Tk:					
Aris loam, heavy substratum	Aris	90	Flats	Yes	2B3
Tu:					
Gladewater clay, frequently flooded	Gladewater	95	Flood plains	Yes	4
Wa:					
Waller loam	Waller	98	Flats	Yes	2B3
We:					
Waller soils, ponded	Waller	98	Flats	Yes	2B3, 3

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979, U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that·
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
Federal Register. September 18, 2002. Hydric soils of the United States.
Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
National Research Council. 1995. Wetlands: Characteristics and boundaries.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

OVERSIZED DOCUMENT(S)

TO VIEW

OVERSIZED DOCUMENT(S)

PLEASE GO TO

CENTRAL RECORDS

(512) 936-7180

United States Department of Agriculture
NRCS
Natural Resources Conservation Service

101 S. Main Street
Temple, TX 76501-6624
Phone: 254-742-9960
FAX: 254-742-9859

For Informational Purposes

To Whom It May Concern:

The official source for current soil survey information is Web Soil Survey at http://websoilsurvey.nrcs.usda.gov. Enclosed is a pamphlet about the website.

Farmland Classification maps can be obtained by following the steps below:

Delineate your area of interest (AOI) and create an AOI, or create an AOI from a zipped shape file. Go to the Soil Data Explorer tab, then the Suitability's and Limitations for Use tab, and then under the Land Classifications list of reports, run the Farmland Classification report. Print or save the report to a file, or add it to the shopping cart and produce a Custom Soil Resource Report to submit to us electronically, or print it out for mailing.

NRCS Farmland Policy Protection Act Form AD-1006 or NRCS-CPA-106 can be obtained at the following URL's respectively:
http://www.usda.gov/rus/water/ees/pdf/ad1006.pdf
http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045395.pdf

NRCS Conservation Easements for Texas can be obtained at the following URL to determine if your project overlaps with any conservation easements:
http://www.tx.nrcs.usda.gov/easements.html

NRCS Conservation Easements by state can be obtained at the following URL:http://datagateway.nrcs.usda.gov/GDGOrder.aspx

If you have any questions, please contact the Texas State Soil Scientist at (254) 742-9863.

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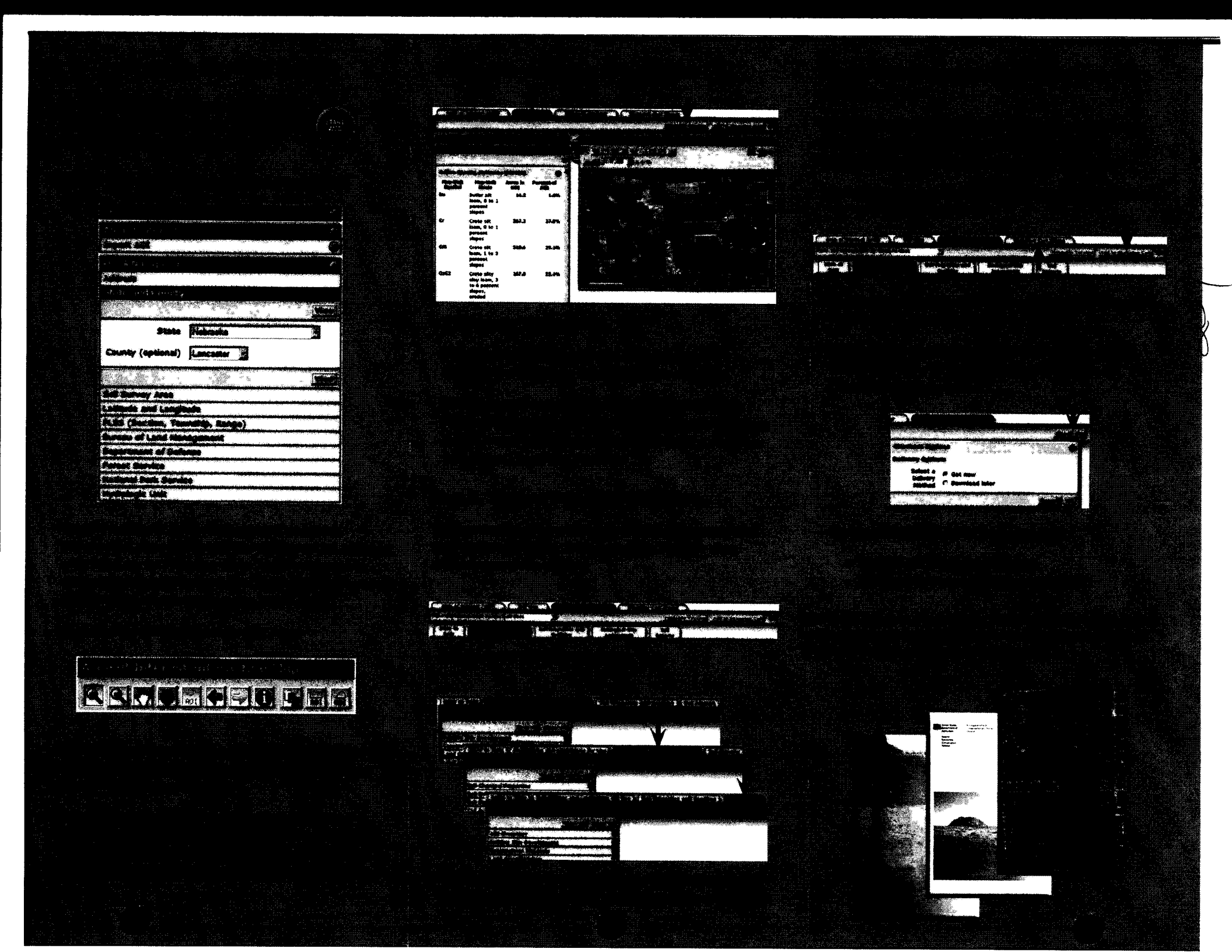
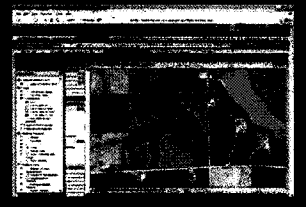

State
Nebraska
County (optional)
Lancaster

Web Soil Survey

Define.

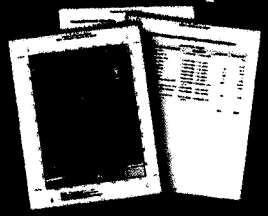
Search / Locate

Collect.



Analyze Data

Develop.



Custom Reports & Maps

February 5, 2013

Regulatory Branch
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

Request for Information
Entergy Texas, Inc. Proposed Ponderosa to Grimes 230kV Transmission Line Project

BMcD Project number: 71136

To whom it may concern:

Entergy Texas, Inc. (Entergy) is proposing to construct a new 230 kilovolt (kV) overhead electric transmission line to connect the proposed Ponderosa Switching Station on the southwest side of Conroe, in Montgomery County, Texas to the existing Grimes Substation near Shiro, in Grimes County, Texas. Please refer to the enclosed map for the location and details of the project area.

Burns & McDonnell is requesting your assistance identifying the human and natural resources in the study area regarding any routing constraints or opportunities within the area. Routing constraints include those areas or resources which may not be compatible with transmission line construction, such as airports, protected species habitat, or dense residential areas. Routing opportunities include such things as previously disturbed areas, industrial corridors, and existing utility rights-of-way. Your input on any of the following resources will assist the project team in developing preliminary alternative routes that take advantage of opportunities while minimizing potential environmental and land use impacts.

Specifically, we are requesting that your office provide information regarding any environmental or land use constraints associated with jurisdictional wetlands, waterbodies, required permits, or any other areas of concern to the U.S. Army Corps of Engineers by March 1, 2013. The information we collect will be used to assist Entergy in developing its application before the Public Utility Commission of Texas to seek a Certificate of Convenience and Necessity for this project. We appreciate your assistance. Please contact Melissa Misplay at (972) 455-3123 if you have any questions or require additional information.

Sincerely,

Tony Bassak, AICP, GISP
Project Manager

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DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON TX 77553-1229

February 12, 2013

REPLY TO ATTENTION OF:

PLEASE NOTE: THIS IS NOT A PERMIT

Evaluation Section

SUBJECT: **Acknowledgement** – Department of the Army Permit Application – **Proposed Ponderosa to Grimes 230 kV Transmission Line Project – BMcD Project Number: 71136**

Tony Bassak, AICP, GISP
Project Manager
Burns & McDonnell
15950 N. Dallas Parkway, Suite 700
Dallas, Texas 75248-6630

Mr. Bassak:

This is to acknowledge receipt of your February 5, 2013, request for a determination of Department of the Army permit requirements to perform certain work associated with the proposed construction of a 230 kilovolt overhead electric transmission line. The project site extends from Montgomery County, Texas to Grimes County, Texas. Please note the items listed below.

♦Date Request Received:	**February 11, 2013**
♦Applicant (if other than Requestor):	**Entergy Texas, Inc.**
♦File Number Assigned:	**SWG-2013-00128**
♦Project Manager Assigned:	**Ms. Chelsea G. Desforges**
♦Telephone Number of Project Manager:	**409-766-3120**
♦Email Address of Project Manager:	**chelsea.g.desforges@usace.army.mil**
♦Mailing Address:	Chelsea G. Desforges CESWG-PE-RN U.S. Army Corps of Engineers P.O. Box 1229 Galveston, Texas 77553-1229

Please reference the above file number in all future correspondence with our office related to this request. You may contact the project manager at the address or telephone number listed above. As always, we are here to assist you in any manner we can regarding this request.

Sincerely,

Lavonne L. Collins

Lavonne L. Collins
Legal Instruments Examiner

PLEASE NOTE: THIS IS NOT A PERMIT

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DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON TX 77553-1229

March 6, 2013

REPLY TO
ATTENTION OF:

Evaluation Section

SUBJECT: Permit Application: SWG-2013-00128

Tony Bassak
Burns & McDonnell
15950 North Dallas Parkway, Suite 700
Dallas, Texas 75248-6630

Dear Mr. Bassak:

This is in regard to your request, dated February 11, 2013, to determine whether a Department of the Army (DA) permit is required for the construction of a new 230 Kilovolt overhead electric transmission line to connect the proposed Ponderosa Switching Station to the existing Grimes Substation. The project site is located near Shiro, in Grimes and Montgomery Counties, Texas.

We have reviewed your request and have concluded that your proposed project is not subject to our jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act (CWA), provided no work is done in Section 10 Waters of the United States (U.S.) and/or no fill is placed into waters of the U.S. As such, a DA permit is not required.

Corps of Engineers determinations are conducted to identify the limits of the Corps' jurisdiction under the CWA for the particular sites. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Please reference file number **SWG-2013-00128** in future correspondence pertaining to this subject. If you have any questions, please contact Ms. Chelsea Desforges at the letterhead address or by telephone at 409-766-3120.

To assist us in improving our service to you, please complete the survey found at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Janet Thomas Botello

Janet Thomas Botello
Leader, North Evaluation Unit

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February 5, 2013

Mr. Mike Nicely
Airports- Southwest Region
U.S. Dept of Transpoprtation, Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137-4298

Request for Information
Entergy Texas, Inc. Proposed Ponderosa to Grimes 230kV Transmission Line Project

BMcD Project number: 71136

Dear Mr. Nicely:

Entergy Texas, Inc. (Entergy) is proposing to construct a new 230 kilovolt (kV) overhead electric transmission line to connect the proposed Ponderosa Switching Station on the southwest side of Conroe, in Montgomery County, Texas to the existing Grimes Substation near Shiro, in Grimes County, Texas. Please refer to the enclosed map for the location and details of the project area.

Burns & McDonnell is requesting your assistance identifying the human and natural resources in the study area regarding any routing constraints or opportunities within the area. Routing constraints include those areas or resources which may not be compatible with transmission line construction, such as airports, protected species habitat, or dense residential areas. Routing opportunities include such things as previously disturbed areas, industrial corridors, and existing utility rights-of-way. Your input on any of the following resources will assist the project team in developing preliminary alternative routes that take advantage of opportunities while minimizing potential environmental and land use impacts.

Specifically, we are requesting that your office provide information regarding any airports in the project area, aviation projects, or any other areas of concern to the U.S. Department of Transportation by March 1, 2013. The information we collect will be used to assist Entergy in developing its application before the Public Utility Commission of Texas to seek a Certificate of Convenience and Necessity for this project. We appreciate your assistance. Please contact Melissa Misplay at (972) 455-3123 if you have any questions or require additional information.

Sincerely,

Tony Bassak, AICP, GISP
Project Manager

February 5, 2013

Ms. Edith Erfling
Clear Lake ES Field Office- Project Leader
United States Fish and Wildlife Service
17629 El Camino Real #211
Houston, TX 77058-3051

Request for Information
Entergy Texas, Inc. Proposed Ponderosa to Grimes 230kV Transmission Line Project

BMcD Project number: 71136

Dear Ms. Erfling:

Entergy Texas, Inc. (Entergy) is proposing to construct a new 230 kilovolt (kV) overhead electric transmission line to connect the proposed Ponderosa Switching Station on the southwest side of Conroe, in Montgomery County, Texas to the existing Grimes Substation near Shiro, in Grimes County, Texas. Please refer to the enclosed map for the location and details of the project area.

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Specifically, we are requesting that your office provide information regarding any environmental or land use constraints associated with threatened/endangered species, wetlands, or any other areas of concern to the U.S. Fish & Wildlife Service by March 1, 2013. The information we collect will be used to assist Entergy in developing its application before the Public Utility Commission of Texas to seek a Certificate of Convenience and Necessity for this project. We appreciate your assistance. Please contact Melissa Misplay at (972) 455-3123 if you have any questions or require additional information.

Sincerely,

Tony Bassak, AICP, GISP
Project Manager

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Misplay, Melissa

From: Stevens, Charrish <charrish_stevens@fws.gov>
Sent: Wednesday, March 06, 2013 1:00 PM
To: Misplay, Melissa
Subject: Re: BMcD Project No. 71136
Attachments: sec 7 form letter revised 2 2012.pdf

Dear Ms. Melissa Misplay,

Thank you for your February 5, 2013 letter requesting our review of this project. I am attaching our standard form letter that goes over our Section 7 Consultation Process. We typically do not provide any information for applicants unless they have already made a determination as to how the project is going to impact Threatened and Endangered Species and/or critical habitat. Please take the time to review the form letter, and if you should have any additional questions, please do not hesitate to contact me.

Sincerely,

--
Charrish L. Stevens

Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
17629 El Camino Real, Suite 211
Houston, Texas 77058
281-286-8282 ext. 231

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real, Suite 211
281/286-8282 / (FAX) 281/488-5882

February, 2012

Thank you for your request for threatened and endangered species information in the Clear Lake Ecological Services Office's area of responsibility. According to Section 7(a)(2) of the Endangered Species Act and the implementing regulations, it is the responsibility of each Federal agency to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed species.

Please note that while a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal agency must notify the U.S. Fish and Wildlife Service (Service) in writing of such designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

A county-by-county listing of federally-listed threatened and endangered species that occur within this office's work area can be found at http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies_Lists/EndangeredSpecies_Lists_Main.cfm. You should use the county-by-county listing and other current species information to determine whether suitable habitat for a listed species is present at your project site. If suitable habitat is present, a qualified individual should conduct surveys to determine whether a listed species is present.

After completing a habitat evaluation and /or any necessary surveys, you should evaluate the project for potential effects to the listed species and make one of the following determinations:

No effect – the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for species occurring in the project county is not present in, or adjacent to, the action area). No coordination or conduct with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Is not likely to adversely affect – the project may affect listed species and/or critical habitat: however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all the information and documentation used to reach your decision with your concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect – adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also likely to cause some adverse effect to individuals or that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal Section 7 consultation with this office.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles. The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Endangered Species Act requirements for your projects at http://www.fws.gov/endangered/esa-libray/pdf/esa_section7_handbook.pdf.

If we can further assist you in understanding a federal agency's obligations under the Endangered Species Act, please contact Donna Anderson, Moni Belton, Kelsey Gocke, Jeff Hill, Charrish Stevens, or Arturo Vale at 281-286-8282.

Sincerely,

Edith Erfling

Edith Erfling
Field Supervisor