Table Ap.5B-1. Summary of Vegetation Types Present by Project Element for the Overhead Portion of the Proposed Project

Type of Project Location	Total Project Locations	Percent of Project Locations Supporting Vegetation Type										
		CBS	CC	CLO	EUC	MC	MP	MWRF	NNG	SG	U/D[1]	WL
Tower and tap study areas	107	52%	3%	29%	6%	10%	27%	0%	86%	14%	12%	2%
Cable pull sites	38	63%	0%	26%	8%	11%	39%	0%	92%	8%	3%	0%
Access roads[2]	16	69%	6%	44%	13%	0%	13%	13%	94%	0%	0%	6%
Staging area	1	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%
Total project locations	**162**											
Average percent of project locations supporting the vegetation type		57%	2%	30%	7%	9%	29%	1%	88%	11%	9%	2%

[1] Crystal Springs Golf Course is included in the U/D category.
[2] Intermittent creeks with MWRF occur in two locations: the temporary bridge near Tower 1/11(1/12) and the access road to Tower 3/22 (4/23).

Notes:
Vegetation within the ROW not tallied
PEA Tables 6-5, 6-1, and 6-3 were updated to reflect the WL at tower site 0/1A.

Vegetation Codes:

CBS = Coyote Brush Scrub
CC = Chamise Chaparral
CLO = Coast Live Oak Woodland
EUC = Eucalyptus Forest
MC = Monterey Cypress Forest
MP = Monterey Pine
MWRF = Mixed Willow Riparian Forest
NNG = Non-Native Grassland
SG = Serpentine Grassland
U/D = Urban/Developed/Landscaped
WL = Seasonal Wetland

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
1	19/84	19/84	NNG, CBS, CLO, UD			Area is adjacent to Jefferson Sub-station gravel parking lot
	Jefferson Substation			Seasonal wetland (5-12' wide) adjacent to east side of substation	Intermittent drainage 6-10' wide present to the east and north of substation	
2		0/1	UD			Trees occur directly adjacent to west side of substation
3		0/2	MP, CLO, NNG, SG, CBS			
4	0/3		NNG, SG, CLO, CBS			Portion of park test plot (approx. 5' wide) east of tower could be impacted
5	0/4	0/3	NNG, SG		Intermittent drainage (1-2' wide) 400' south of Existing Tower 0/4	
6	0/5	0/4	SG, E	Seasonal wetland area is present in discontinuous patches in drainage	Intermittent drainage (1' wide) present approx. 1000' north of Existing Tower 0/5	Might be possible to avoid eucalyptus at south and west sides
7	0/6	0/5	SG, CLO	Seasonal wetland swale present between Existing Towers 0/5 and 0/6 (varies between 10-20' wide)		Could shift study area 10-15' to the east in order to avoid CLO
8	1/7	0/6	NNG		Swale (1' wide) located 400' north of Existing Tower 0/6	
9	1/8	1/7	NNG			
10	1/9	1/8	NNG, CBS, CLO			Only a few small oak saplings present
11	1/10	1/9	NNG, CBS, CLO			Up to 5 oaks (ranging in size from saplings to multiple-stemmed large trees) could be lost
12	1/11	1/10	NNG, CBS, CLO		Intermittent drainage (1-2' wide) near Existing Tower 1/11	

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
13	1/12	1/11	NNG, CBS		Large intermittent drainage (about 75' wide) flanked by mixed riparian corridor occurs between Existing Towers 1/11 and 1/12	
14	2/13	1/12	NNG, CBS, CLO		Drainage (about 5-15' wide) present south of Existing Tower 2/13	Several large oaks and other native trees present
15	2/14	2/13	NNG, CBS	Narrow drainage near intersection of Cañada Road and access road to Existing Tower 2/13; contains a small amount of seasonal wetland vegetation	Drainage (1' wide) near intersection of Cañada Road and access road to Existing Tower 2/13	
16	2/15	2/14	NNG, CLO			Oaks at the east side of tower could be lost
17	2/16	2/15	NNG, CLO			Several small to large oaks present
18[2]	2/17	2/16A and 2/16B	NNG, CBS, CLO		Intermittent drainage (about 15-20' wide at top of bank) intersects access road between Existing Towers 2/16 and 2/17; flanked by riparian forest	Oaks occur next to access road and could be lost depending on final footprint
19	2/18	2/17	NNG, CBS, CLO		Intermittent culverted drainage near Cañada Road is about 10 feet wide at bottom, and 20-30 feet wide at top of bank. MWRF present adjacent to drainage.	Oaks occur on three sides of tower; some trees may be lost
20	2/19	3/18	NNG, CBS, CLO			A few small oaks might be lost

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
21	3/20	3/19	NNG, CBS, MP, CLO		Narrow (1' wide) intermittent drainage located between Existing Towers 3/20 and 3/21 (about 250' north of Existing Tower 3/20)	A few small Monterey pines and one small oak would be lost
22	3/21	3/20	NNG, CBS			
23	3/22	3/21	NNG, CBS, CLO		Narrow (1' wide) intermittent swale located between Existing Towers 3/21 and 3/22; mostly unvegetated	Several oaks will be lost
24	4/23	3/22	CBS, CC		Intermittent drainage bisects access road to Existing Tower 4/23. Active channel is only about 10' wide, but top of bank width ranges from 50 -100' in width; flanked by MWRF, with dense blackberry thickets; historic bridge location.	
25	4/24	4/23	NNG, CBS, CC			
26	4/24A	4/24	NNG, CBS, CC			
27	4/25	4/25	NNG, CBS			
28	4/26	4/26	NNG, SG, CBS		Narrow, intermittent drainage near Existing Tower 4/26 (about 1-2' wide)	
29	5/27		NNG, SG		Narrow ditch (2' wide), is located by Ralston Substation. Ditch is dry and is culverted across the access road.	
30[2]	5/27A	5/27	NNG, SG			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
31	5/28	5/28	NNG, SG			
32	5/29	5/29	NNG, SG, CBS			
33	5/30	5/30	NNG, SG			
34	5/31	5/31	NNG, SG			
35	6/32	5/32	NNG, SG			
36	6/33	6/33	NNG, SG			
37	6/34	6/34	NNG, SG, CBS, MP, MC			A small Monterey pine and possibly some Monterey cypress and Monterey pine at the northern tower area boundary might be lost
38[2]	6/35	6/35 and 6/35A	NNG, CBS, MP, MC			A few small Monterey cypress, Monterey pine and/or oak might be lost
39	6/36	6/36	NNG, CBS, CLO, MP			A few small oak and/or Monterey pine trees could be lost
40	6/37	6/37	NNG, CBS, CLO, MP			A few small oak and/or Monterey pine trees could be lost
41	6/38	6/38	NNG, CBS, CLO			A few small oak and/or Monterey pine trees could be lost
42[2]	7/39	7/39	NNG			A few Monterey pines occur in landowner back yard where existing pole will be removed. A few trees may be lost on private property
43	7/40	7/40	NNG, MP			A few small Monterey pines could be lost
44	7/41	7/41	NNG, CBS, MP, CLO			A few small Monterey pines and oak saplings could be lost
45	7/42	7/42	NNG			
46	7/43	7/43	NNG, CBS, MP, CLO			Tree trimming or removal may be needed
47	7/44	7/44	NNG, MP			Tree trimming or removal may be needed
48	7/45	7/45	NNG, CBS			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
49	7/46	8/46	NNG, MP	Seasonal wetland located to the southwest of Existing Tower 7/46	Narrow (1' wide) dry grassland-dominated swale intersects an access road a few hundred feet south of Existing Tower 7/46; drains to seasonal wetland to the west.	Tree trimming or removal of Monterey pine may be needed
50	8/47	8/47	NNG, CLO, MP		Culverted, dry, 1' wide drainage intersects access road; drainage is near Existing Tower 8/47	Tree trimming or removal of Monterey pine or oaks may be needed
51	8/48	8/48	NNG, CBS, MP		A narrow (1' wide) concrete-lined "V' ditch is located near Existing Towers 8/48 and 8/49; this would not be expected to be a jurisdictional feature.	Tree trimming or removal of Monterey pine trees may be needed
52	8/49	8/49	NNG, CBS, MP, EUC, MC			Tree trimming or removal of trees may be needed
53	8/50	8/50	NNG, EUC			Tree trimming or removal may be needed. Exotic trees present (e.g., Acacia sp.).
54[2]	8/51	8/51	NNG, CLO			Tree trimming or removal may be needed. Exotic trees present (e.g., Acacia sp.).
55	8/52	8/52	NNG, MC			Tree trimming or removal may be needed. Exotic trees present (e.g., Acacia sp.).
56	8/53	8/53	UD[3], MP			Tree trimming or removal of trees may be needed
57	9/54	9/54	NNG			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
58	9/55	9/55	UD[3], MP			Tree trimming or removal of trees may be needed
59	9/56	9/56	UD[3], MP			Tree trimming or removal of trees may be needed
60	9/57	9/57	NNG			
61	9/58	9/58	UD[3], MC			Tree trimming or removal of trees may be needed
62	9/59	9/59	UD[3], MC			Tree trimming or removal of trees may be needed
63	9/60	9/60	UD[3], MC			Tree trimming or removal of trees may be needed
64	9/61	9/61	UD[3], MP		Dry, 1' wide artificially created drainage is located west of the access road adjacent to the golf course; may not be a jurisdictional feature. Drainage ends about 500' south of Existing Tower 9/61	Tree trimming or removal of trees may be needed
65	9/62	9/62	UD[3], MC			Tree trimming or removal of trees may be needed
66	9/63	10/63	UD[3], MP			Tree trimming or removal of trees may be needed
67	10/64	10/64	NNG			
68	10/65	10/65	NNG, CBS			
69	10/66	10/66	NNG, MP			Minor tree trimming or removal of trees may be needed
70	10/67	10/67	NNG, CBS, CLO, MP			Minor tree trimming or removal of trees may be needed
71	10/68	10/68	NNG, CBS, MP, CLO			Minor tree trimming or removal of trees may be needed
72	10/69	10/69	NNG, CBS			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
73	11/70	11/70	NNG, CBS, CLO, MP		Intermittent drainage located in between Existing Towers 11/71 and 11/72	Minor tree trimming or removal of trees may be needed
74	11/71	11/71	NNG, CBS, CLO			Minor tree trimming or removal of trees may be needed
75	11/72	11/72	NNG, CBS, CLO			Minor tree trimming or removal of trees may be needed
76	11/73	11/73	NNG, MC, MP, EUC			Minor tree trimming or removal of trees may be needed
77	11/74	11/74	NNG, CBS			
78	11/75	11/75	NNG, CBS			
79	11/76	12/76	NNG, CBS			
80	12/77	12/77	NNG, CBS, MP			Minor tree trimming or removal of trees may be needed
81[2]	12/78	12/78	NNG, CBS, CLO, MC			Minor tree trimming or removal of trees may be needed
82	12/79	12/79	NNG, CBS	Seasonal wetland with some ponded water located at the curve in the access road in between 12/80 and 12/78 (JM-78-79-80). Source of water is likely culverted flows from Highway 280.		
83	12/80	12/80	NNG, CBS, MP	Seasonal wetland (including cattails) located on east side of access road; contains culverted flows from Highway 280. Narrow (1' wide) concrete-lined ditch also present; adjacent to north side of the curve in the access road.		Minor tree trimming or removal of trees may be needed
84	12/81	12/81	NNG, CBS, MP			Minor tree trimming or removal of trees may be needed
85[2]	12/81A	12/82	NNG, MP			Minor tree trimming or removal of trees may be needed
86	12/82	13/83	NNG, CBS			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
87	12/83	13/84	NNG, CBS	Tower is adjacent to rocky shore of San Andreas Lake. No shoreline wetlands present.		Tower is adjacent to rocky shore of San Andreas Lake; open lake waters are within the tower study area, but no shoreline wetlands are present
88	13/84	13/85	NNG		Narrow (1' wide) rock-lined culverted drainage occurs near Existing Tower 13/84; no wetlands are present. Culvert extends under access road and outflow pipe is located about 5 feet north of tower base.	Tower is adjacent to rocky shore of San Andreas Lake; open lake waters are within the tower study area, but no shoreline wetlands are present
89	13/85	13/86	NNG, CBS	Small (10' x 15') wetland and narrow drainage (1' wide) extends uphill from access road into ROW about 200' north of Existing Tower 13/85. Drainage might be impacted; wetlands not likely to be impacted. Flows are culverted under road and drain into San Andreas Lake.		
90	13/86	13/87	NNG, CBS, MP, CLO			Trees very small (saplings); could be lost
91	13/87	13/88	NNG, CBS			
92	13/88	13/89	NNG			
93	14/89	14/90	NNG			
94	14/90		NNG			
95		14/91	NNG			
96	14/91		NNG			
97		14/92	NNG, EUC			One large eucalyptus at the east side might need to be trimmed or removed
98	14/92		NNG			
99[2]	14/93	14/93A	NNG, CBS, MC, EUC			Trees near water tank might be affected by Tap
100	14/94		NNG			

Table Ap.5B-2. Vegetation Types Present Within the Tower Study Areas for the Overhead Portion of the Proposed Project

Tower Study Area	Existing Tower Number	New Tower Number	Vegetation Types Present	Wetlands Present within 100' & 200' Area	Drainages Present	Notes
101		14/94	NNG			
102	14/95		NNG, CBS			
103	14/96	14/95	NNG, CBS, CLO			Small oaks present in dense scrub might be lost
104	14/97		NNG, CBS, CLO			Small oaks present in dense scrub might be lost
105	14/98		NNG, CBS, WL	Large seasonal wetland present west of Existing Tower 14/98, south of Sneath Sub-station, and to the west of access road. Narrow drainage present at south perimeter of Sneath Substation; supports wetlands.		

[1] Each study area is 100 feet by 200 feet, and is centered on the existing tower. The 200-foot edge of the study area is oriented parallel with the transmission line.
[2] The area studied was a Tap Study Area. A Tap Study Area is an irregular hexagon shape formed by rectangle (100 feet by 400 feet, centered on the existing tower) with an isosceles trapezoid (base length (adjacent to rectangle) 400 feet, top length 200 feet, height 100 feet) oriented in the tap direction.
[3] Crystal Springs Golf Course is included in the U/D category.

Vegetation Codes:

CBS = Coyote Brush Scrub
CC = Chamise Chaparral
CLO = Coast Live Oak Woodland
EUC = Eucalyptus Forest
MC = Monterey Cypress Forest
MP = Monterey Pine
MWRF = Mixed Willow Riparian Forest
NNG = Non-Native Grassland
SG = Serpentine Grassland
U/D = Urban/Developed/Landscaped
WL = Seasonal Wetland

Table Ap.5B-3. Vegetation Types Present Within the Cable Pulling Sites for the Overhead Portion of the Proposed Project

Cable Pulling Site	Nearest Tower [New/Existing]	Orientation to Nearest Tower	Site Dimensions (in feet)	Page Number in the Construction Access and Methods Manual[1]	Vegetation Types Present	Notes
1	0/6 (1/7)	N	400 x 100	JM - 6 - 7 - 8	NNG, CBS	
2	1/8 (1/9)	S	400 x 100	JM - 6 - 7 - 8	NNG, CBS, CLO	Only a few oak saplings present
3	1/9 (1/10)	NNW	400 x 100	JM - 9	CBS, NNG, CLO	Few young CLO trees present
4	2/13 (2/14)	W	400 x 100	JM - 13 - 14	NNG, CBS	
5	2/13 (2/14)	N	400 x 100	JM - 13 - 14	NNG, CBS	
6	2/14 (2/15)	S	400 x 100	JM - 13 - 14	NNG, CLO	As mapped, is within the canopy of young to mature oaks.
7	3/18 (2/19)	S	300 x 100	JM - 17 - 18	NNG, CBS, CLO	As mapped, may result in loss of a few small oaks that are next to existing road
8	4/23 (4/24)	S	300 x 100	JM - 23 - 24	NNG	Site is adjacent to gravel road; disturbed area
9	4/23 (4/24)	NW	300 x 100	JM - 23 - 24	NNG, CBS	
10	4/24 (4/24A)	SSW	200 x 50	JM - 23 - 24	NNG, CBS	
11	4/24 (4/24A)	SW	300 x 100	JM - 23 - 24	NNG, CBS, CLO	A few oaks are within site
12	4/25 (4/25)	N	400 x 100	JM - 25	NNG, CBS	
13	(4/26)	N	400 x 100	JM - 26 - 27	NNG, SG	
14	(5/27)	N and S	400 x 100	JM - 26 - 27	NNG, SG	
15	6/34 (6/34)	S	400 x 100	JM - 33 - 34	NNG, SG, CBS, MP	A few Monterey pines are mapped within site
16	6/36 (6/36)	S	400 x 100	JM - 35 - 36 - 37	NNG, CBS, CLO, MP	A few Monterey pines or oaks are mapped within site
17	7/39 (7/39)	N	400 x 100	JM - 39 - 40	NNG, CBS, CLO, MP	A few Monterey pines or oaks are mapped within site
18	7/44 (7/44)	S	300 x 100	JM - 44 - 45 - 46	NNG	
19	7/44 (7/44)	N	300 x 100	JM - 44 - 45 - 46	NNG, MP	A few Monterey pines are mapped within site
20	8/51 (8/51)	S	400 x 100	JM - 49 - 50 - 51	NNG, EUC, MC, MP	Site is on driveway; tree trimming or removal may be needed
21	8/52 (8/52)	S	300 x 100	JM - 52 - 53	NNG, MP, EUC	Tree trimming or removal may be needed
22	8/53 (8/53)	N	300 x 100	JM - 52 - 53	UD[2]	

Table Ap.5B-3. Vegetation Types Present Within the Cable Pulling Sites for the Overhead Portion of the Proposed Project

Cable Pulling Site	Nearest Tower [New/Existing]	Orientation to Nearest Tower	Site Dimensions (in feet)	Page Number in the Construction Access and Methods Manual[1]	Vegetation Types Present	Notes
23	9/62 (9/62)	S	400 x 100	JM - 61 - 62 - 63	UD[2], MC	Minor tree trimming or removal may be needed
24	10/63 (10/63)	N	400 x 100	JM - 61 - 62 - 63	UD[2], MP, MC	Minor tree trimming or removal may be needed
25	10/66 (10/66)	N and S	400 x 100	JM - 64 - 65 - 66 - 67	NNG, MP, CLO	Minor tree trimming or removal may be needed
26	10/68 (10/68)	S	400 x 100	JM - 68	NNG, CBS, MP, CLO	Minor tree trimming or removal may be needed
27	10/69 (10/69)	N	300 x 100	JM - 69 - 70	CBS, MP	Tree trimming or removal may be needed
28 [3]	10/69 (10/69)	W	400 x 100	JM - 69 - 70	NNG, CBS, MP	Tree trimming or removal may be needed
29	11/70 (11/70)	S	300 x 100	JM - 69 - 70	CBS	As mapped, avoids adjacent MP, EUC trees
30	11/74 (11/74)	S	400 x 100	JM - 73 - 74	NNG, CBS, EUC	Tree trimming or removal may be needed
31	11/74 (11/74)	N	400 x 100	JM - 73 - 74	NNG, CBS	
32	12/76 (11/76)	S	300 x 100	JM - 75 - 76 - 77	NNG, CBS, MP	Tree trimming or removal may be needed
33	12/76 (11/76)	N	300 x 100	JM - 75 - 76 - 77	NNG, CBS, MP, MC	Tree trimming or removal may be needed
34	12/82 (13/83)	S	400 x 100	JM - 82 - 83 - 84	NNG, CBS, MP	Tree trimming or removal may be needed
35	12/82 (13/83)	N	400 x 100	JM - 82 - 83 - 84	NNG, CBS, MP	Tree trimming or removal may be needed
36	(14/92)	N	400 x 100	JM - 89 - 90 - 91 - 92	NNG	
37	(14/94)	S	400 x 100	JM - 93A - 94 - 95	NNG	
38	(14/95)	N	400 x 100	JM - 93A - 94 - 95	NNG, CBS, CLO	Tree trimming or removal may be needed

[1] Jefferson-Martin 230kV Overhead Transmission Line. Pacific Gas & Electric Company. Construction Access and Methods. Preliminary Rev. 1. Dated May 8, 2002.
[2] Crystal Springs Golf Course is included in the U/D category.
[3] Additional tree trimming is proposed near Tower 10/69 and Cable Pull Sites 28 and 29 (refer to JM - 69 -70). Habitat types NNG, CBS, CLO, and MP are present; therefore, a tree survey would be required.

Vegetation Codes

CBS = Coyote Brush Scrub
CC = Chamise Chaparral
CLO = Coast Live Oak Woodland
EUC = Eucalyptus Forest
MC = Monterey Cypress Forest
MP = Monterey Pine
MWRF = Mixed Willow Riparian Forest
NNG = Non-Native Grassland
SG = Serpentine Grassland
U/D = Urban/Developed/Landscaped
WL = Seasonal Wetland

Table Ap.5B-4. Vegetation Types Present within the Proposed Access Roads and Temporary Bridge for the Overhead Portion of the Proposed Project

Access Road	Nearest Tower New (Existing)	Page Number in the Construction Access and Methods[1]	Vegetation Types Present	Notes
Existing dirt service road	0/3 (0/4); 0/4 (0/5)	JM 3 - 4	NNG, CBS	To be used only for emergency purposes during construction.
Existing dirt access road	0/3 (0/4)	JM 3 - 4	NNG, CBS	To be used only for emergency purposes during construction. *Plantago erecta* growing in tire tracks of dirt road.
Existing dirt service road	0/5 (0/6)	JM - 5	NNG	To be used only for emergency purposes during construction.
Existing dirt access road	0/6 (1/7); 1/7 (1/8); 1/8 (1/9)	JM - 6 - 7 - 8	NNG	
New dirt access road	1/9 (1/10)	JM - 9	NNG	Site is partially within Cable Pulling Site 3
Existing abandoned gas pipeline access road with new alternate (to temporary bridge) dirt access road	1/11 (1/12)	JM 10-11	NNG, CBS, CLO	Oak tree located directly adjacent to proposed road
Temporary bridge (railroad flat car)	1/11 (1/12)	JM 10-11	MWRF, NNG, CLO, CBS	Mixed riparian forest and oaks may be lost
New dirt access road	1/11 (1/12)	JM 11-12	NNG, CLO, CBS	Road placement avoids trees; however, oaks are adjacent and may need trimming
New dirt access road	1/12 (2/13)	JM 11-12	NNG, CLO, WL	Road placement avoids trees; however, oaks and other native trees located at end of road near Existing Tower 2/13
Existing dirt access road	2/13 (2/14)	JM - 13 - 14	NNG, CBS	
Existing dirt access road	2/14 (2/15)	JM - 13 - 14	NNG, CBS	
Existing dirt access road	2/17 (2/18); 3/18 (2/19); 3/19 (3/20); 3/20 (3/21); 3/21 (3/22)	JM 17 - 18; JM 19 - 20; JM - 21 - 22	NNG	Tree trimming and/or minor clearing might be required
Existing dirt access road	3/22 (4/23)	JM - 21 - 22	CBS, CLO, MWRF	Very dense cover adjacent to and encroaching on road; tree trimming and brush clearing will be needed
Existing dirt access road	4/23 (4/24); 4/24 (4/24A)	JM - 23 - 24	NNG, CBS, CC	Brush clearing will be needed
Existing dirt access road and new (extension of existing) dirt access road	11/71 (11/71);11/72 (11/72)	JM - 71 - 72	NNG, CBS, CLO, MP, EUC	Road sited to avoid densest habitat, but tree trimming and/or removal will be needed
Existing dirt access road	11/73 (11/73)	JM - 73 - 74	NNG, CBS, CLO, MP, EUC	Tree trimming and/or removal may be needed

[1] Jefferson-Martin 230kV Overhead Transmission Line. Black & Veatch. Construction Access and Methods. Preliminary Rev. 2 dated September 20, 2002. This document identifies the precise location of all access roads to be utilized for this Project. Due to security concerns this document will be submitted to the CPUC's Energy Division under separate cover on a confidential basis pursuant to the protections of Public Utilities Code Section 583.

Vegetation Codes:

CBS = Coyote Brush Scrub
CC = Chamise Chaparral
CLO = Coast Live Oak Woodland
EUC = Eucalyptus Forest
MC = Monterey Cypress Forest
MP = Monterey Pine
MWRF = Mixed Willow Riparian Forest
NNG = Non-Native Grassland
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BIOLOGICAL ASSESSMENT

HELICOPTER STAGING AREAS

JEFFERSON-MARTIN 230 KV PROJECT

June 25, 2003

Pacific Gas and Electric Company
Technical and Ecological Services
3400 Crow Canyon Road
San Ramon, CA 94583

INTRODUCTION

PG&E has identified 17 potential construction staging sites (see PG&E response to CPUC Data Request # 2, item 2-1, April 3, 2003). The PG&E data request response included aerial photographs that can be used to illustrate this assessment.

Construction equipment, vehicles, and tower assembly activities will likely compact soils and disturb vegetative cover at these sites. Construction activities at these sites may also harm wildlife living on the sites, or disturb nearby wildlife. This biological assessment was prepared to determine whether the use of these sites for construction of the proposed project would affect sensitive biological resources.

METHODS

In the late winter and spring of 2003, Mr. John Stebbins surveyed the potential staging areas for rare plants, Dr. Richard Arnold for special status invertebrates, and Dr. Sheila Byrne and Mr. Jesse Viscarra for special status vertebrate wildlife species. Mr. Frank Chan, restoration specialist, evaluated representative sites to determine appropriate restoration methods. Methods and target species lists are described in the Proponent's Environmental Assessment. Table 1 gives the dates of surveys.

In addition, specialists were asked to assess the suitability of staging sites as habitat for sensitive animal species. The assessment of habitat suitability for selected invertebrate species was based on the presence and abundance of the known food plants for the lepidoptera and suitable serpentine rocks for the harvestmen. Habitat suitability for special status vertebrates was based on type of habitat and the presence and condition of special habitat features required by the species.

Table 1. List of biological surveys for sensitive species on the proposed construction sites.

Date	Purpose	Participants
1/31/2003	reconnaissance	Sheila Byrne
3/3/2003	reconnaissance, rare plant survey, revegetation assessment	Sheila Byrne, John Stebbins, Frank Chan.
3/18/2003	reconnaissance, invertebrate survey, wildlife survey	Sheila Byrne, Dick Arnold, Jesse Viscarra.
4/9/2003	rare plant, wildlife surveys	Sheila Byrne, John Stebbins
5/1/2003	rare plant surveys	John Stebbins
5/13/2003	rare plant surveys	John Stebbins
6/3/2003	rare plant surveys	John Stebbins
3/20/2003	invertebrate surveys	Dick Arnold
4/2/2003	invertebrate surveys	Dick Arnold
4/9/2003	invertebrate surveys	Dick Arnold
4/16/2003	invertebrate surveys	Dick Arnold
4/23/2003	invertebrate surveys	Dick Arnold
5/1/2003	invertebrate surveys	Dick Arnold
5/9/2003	wildlife habitat assessment	Jesse Viscarra
5/12/2003	wildlife habitat assessment	Jesse Viscarra
5/13/2003	wildlife habitat assessment	Jesse Viscarra

RESULTS

Plant Communities. Table 2 lists plant communities found on each proposed staging site, and in its vicinity. Sites 10 and 13 support remnant serpentine grasslands, a sensitive habitat. These sites are part of the historical "Pulgas Ridge" grasslands, known to support many rare and endemic plants. Additionally, elements of serpentine grassland occur in a mosaic with non-native annual grassland at sites 9 and 11, and within portions of sites 15 and 16.

Special Status Plant Species. One rare plant, the state and federally listed threatened Marin dwarf flax (*Hesperolinon congestum*), was found at helicopter staging areas 10 and 13 (see Table 2). This species was found in 2001 and 2002 north of Ralston Substation, but away from areas that would be impacted by the project. California Natural Diversity Database records show small to large populations of *H. congestum* on Pulgas Ridge over the past 30 years. This annual plant is cyclical, and is flourishing after this year's heavy April rains.

Special Status Invertebrates. No sensitive invertebrates were seen during presence-absence surveys at the helicopter sites. None of the helicopter sites should affect the Ricksecker's water scavenger beetle. Table 3 gives the results of habitat suitability assessments for the remaining special status invertebrates that might occur in the area. Areas just east and south of Site 1 provide the best potential habitat for the Bay checkerspot butterfly (*Euphydras editha bayensis*), Opler's longhorn moth (*Adela oplerella*), and three harvestmen species [Edgewood Blind harvestman (*Calicina minor*); Edgewood Microblind harvestman (*Microcina edgewoodensis*); and Serpentine phalangid (*Calicina serpentinea*)]. However, the actual helicopter staging area appears to have been altered, possibly by fill from construction of Highway 280. Unlike neighboring grasslands, it does not have serpentine soils, and its vegetation is largely non-native grasses and common vetch. Four other sites (9, 10, 11, and 13) have low quality habitat for special status invertebrates.

Special Status Wildlife. No special status wildlife species were seen on the helicopter staging areas. In assessing areas surrounding the helicopter sites, we frequently saw woodrat nests wherever thick brush or woodland was present. Sites 1, 2, 9, 10, 19, and 22 were judged to have the least value to special status wildlife.

PLEASE NOTE: species location should be kept confidential; therefore, the trapping study discussion does not give specific locations. We would be happy to discuss this information with people who need it do their assessments.

A current trapping study of the San Francisco garter snake seeks to determine if these snakes are present in areas of potential habitat that might be affected by the project. Snakes have only been caught in one peripheral area which is about one-hundred yards form the nearest project feature. One helicopter site is within several hundred feet of trapped snakes, and there is a small chance that a San Francisco garter snake could wander into the site during wet weather. Dr. Sam McGinnis, San Francisco garter snake expert, believes that mitigation can be implemented to prevent any harm to the snake should this staging area be used. His specific recommendations will be included in his report on the trapping effort. This report will be completed in September.

Revegetation. The helicopter staging areas can be revegetated using the plan described in the PEA. The native grass crop currently being grown for reseeding should be sufficient to cover the helicopter staging sites as well

as previously described project features. Two things will need special attention at staging areas: 1) erosion control if work is done during wet weather and 2) loosening any compacted soil before seeding.

RECOMMENDATIONS

Sites 10 and 13 support remnant serpentine grassland sites, as well as populations of the state and federally threatened rare plant *Hesperolinon congestum*. The use of sites 10 and 13 for construction staging activities would likely result in significant adverse impacts to the serpentine habitat and to the rare plant populations. Sites 9, 11, 15 and 16 also include some elements of serpentine habitat. With the implementation of the proposed revegetation plan, impacts to those latter sites could be mitigated below level of significance.

Table 2. Matrix of Suitable Habitat for listed Plant Species Associated with Jefferson-Martin Helicopter Staging Sites

Site #	Vegetation Habitat on Site	Vegetation Habitat in Vicinity	Listed plant species	Biological Notes
1	non-native grassland	serpentine grassland, ruderal, developed	no	Disturbed site with high human use, little suitable habitat for listed plant species. A small wetland drainage/swale occurs along southeastern site boundary. A relatively undisturbed serpentine outcrop occurs east of the drainage which supports many native plant species including needlegrass.
2	developed, ruderal	developed, ruderal	no	Graded site used for parking, no suitable habitat for listed species. Many nonnative weed species including tocalote thistle and pineapple weed.
4	ruderal reverting to coyote brush scrub	coyote brush scrub, coast live oak woodland	no	Several large eucalyptus and other ornamental tree, shrub, and groundcover stands from previous facility usage occur among surrounding woodland and chaparral habitat. Dominant chaparral shrubs are coyote bush but many broom infestations also . Several "escaped" ornamental plants are present.
6	non-native grassland	non-native grassland, coast live oak woodland	no	A creek runs along western edge of site (well established riparian corridor). Two wetland drainages/swales bisect site and flow into creek. Site is dominated by filaree, wild barley and other nonnative annual species Site surrounded by woodland and chaparral habitats.
7	non-native grassland	coast live oak woodland	no	Woodland habitat surrounds site. Wet areas exist at the NE corner of site and several hundred feet NW of site (along access road). A drainage runs along eastern edge of site and a creek runs along access road south of site. Site supports a few scattered eucalyptus but is dominated by nonnative grassland and forbs.
9	non-native grassland, serpentine grassland	non-native grassland, developed	no	Open grassland habitat with little suitable habitat for listed species. Mostly annual grasses and forbs but many "weedy" species of thistles present. A wetland drainage with patchy vegetation exists long eastern fence line of site.
10	serpentine grassland	Serpentine grassland, non-native grassland, developed	yes	Open grassland habitat, suitable habitat for a few Federal and State- listed plant species that are reported from this region. One species (Marin Dwarf Flax -Hesperolinon congestum) was observed in 2003 at several locations in the immediate vicinity of Tower 5/32. This whole area should be considered sensitive and numerous CNDDB records exist for this species. Moderately disturbed by nearby residential usage and related activities but overall favorable habitat for several plant species .
11	native bunchgrass, non-native grassland, serpentine grassland	native bunchgrass, non-native grassland, developed	no	Site has scattered eucalyptus and Monterey pine and coyote bush clumps in moderately disturbed grassland. A small wetland swale/drainage runs along north edge of site at gate.
13	serpentine grassland	Serpentine grassland, Monterey Pine, coyote brush scrub	yes	Site is surrounded by chaparral and few clumps of tall trees. Native bunchgrasses (Nassella) were observed along north edge of site. Marin dwarf flax (a listed plant species) was confirmed during the 2003 surveys. A wetland swale/drainage runs along south edge of site.
14	developed (golf course)	Developed (golf course), Monterey cypress and pine plantings	no	Wetland area near southwest corner of site. Many large planted trees (pines) exist around site, but highly modified condition of the habitat make it unsuitable for listed plant species
15	non-native grassland, serpentine grassland	non-native grassland, coast live oak woodland	no	Creek drainages exist along north and south margins of site. These flow into a medium sized creek with riparian zone west of the site. A wetland patch dominated by poison hemlock (Conium maculatum) exists west-southwest of site. Site surrounded by dense oak woodland habitat. Several species of native bunchgrasses were observed on the site. A portion of the site near the water building has been mowed for fire control purposes.

Site #	Vegetation Habitat on Site	Vegetation Habitat in Vicinity	Listed plant species	Biological Notes
16	non-native grassland, seasonal wetland, serpentine grassland	non-native grassland, seasonal wetland, developed	no	A wetland seep dominated by sour dock and fullers teasel was observed at base of access road hill. Site has scattered clumps of coyote brush and Monterey pines surrounding it. Many ornamental shrubs and groundcovers (periwinkle) are present.
18	non-native grassland, mowed and disked	wetland, coyote brush scrub, Monterey cypress forest	no	The site is a firebreak for the San Francisco Water Department. Wetland habitat extends from Sneath Substation gate (north of the site) south along west side of site to lake. Willow thicket patches were observed within wetland. A large, isolated of cypress was observed west of the wetland, with the majority of surrounding habitat being coyote brush/poison oak scrub.
19	ruderal, developed	ruderal, developed	no	Disturbed lot with debris piles, no suitable habitat for listed species on site. Many weedy plant species are present. A boggy area exists adjacent to northwest corner of site, but it may not qualify as a wetland.
20	ruderal, developed	ruderal, developed	no	Site is a graded lot. A bog exists to the west of the site and has a wetland swale that runs north out of it along side the site. Two wetland patches have developed on the western half of the site totaling approximately 2000 square feet of area. Chaparral habitat was observed between the site and road to the west.
22	non-native grassland, ruderal	non-native grassland, ruderal	no	Site is a highly disturbed lot, offering no suitable habitat for listed species. Woodland and chaparral habitats were observed to the north and east of the site.
23	hayfield, non-native grassland	hayfield, non-native grassland, riparian woodland, coast live oak woodland	no	Site is a hayfield surrounded by riparian, mixed conifer, and woodland habitats. Site has streams running on north and south sides. Mostly nonnative grassland habitat dominated by wild oats in central opening.

Table 3. Matrix of Suitable Habitat for Special Status Invertebrate Species Associated with Jefferson-Martin Helicopter Staging Sites

Site #	Habitats for Invertebrate Taxa			Notes
	Opler's Longhorn moth	Bay Checkerspot butterfly	Harvest-men	
1	Yes	Yes	Yes	Nice habitat to east of site, Plantago present among weeds on western portion
2	No	No	No	
4	No	No	No	
6	No	No	No	
7	No	No	No	
9	No	Yes	No	Low quality habitat
10	No	Yes	No	Low quality habitat
11	Yes	Yes	No	Low quality habitat
13	Yes	Yes	No	Low quality habitat
14	No	No	No	
15	No	Yes	No	Limited Plantago present
16	No	No	No	
18	No	No	No	
19	No	No	No	
20	No	No	No	
22	No	No	No	
23	No	No	No	

Table 4. Matrix of Suitable Habitat for Special Status Wildlife Species Associated with Jefferson-Martin Helicopter Staging Sites

Site #	Species[1]																												Biological Notes
	River lamprey	Steelhead	California tiger salamander	California re-legged frog	Foothill yellow-legged frog	Western pond turtle	SF garter snake	White-tailed kite	Bald eagle	Northern harrier	Sharp-shinned hawk	Cooper's hawk	Ferruginous hawk	Golden eagle	Merlin	Vaux's swift	Allen's hummingbird	Purple martin	Olive-sided flycatcher	California yellow warbler	Pacific-slope flycatcher	SF common yellowthroat	Long-eared myotis	Fringed myotis	Long-legged myotis	Townsend's western big-eared bat	Pallid bat	Western mastiff bat	SF dusky-footed woodrat	
1																													Disturbed site with high human use, no suitable habitat for listed species. A small wetland drainage/swale occurs along southern site boundary.
2																													Graded site, no suitable habitat for listed species.
4											F-S	NF-S	F-S	F-S			N-S		N-S		N-S			R-S	R-S		R-S		N-S	Several large eucalyptus tree stands occur among surrounding woodland and chaparral habitat. Several woodrat nests were observed SE of site.
6				B-S	B-S	B-S		N-S, F-OS			N-S	N-S, F-OS		NF-S	F-OS	N-S	N-S	N-S	N-S	N-S	N-S		R-S	R-S	RF-S		R-S		N-S	A creek runs along western edge of site (well established riparian corridor). Two wetland drainages/swales bisect site and flow into creek. Site surrounded by woodland and chaparral habitats.
7				B-S	B-S	B-S		F-O			F-S	N-S, F-OS					N-S			N-S	N-S				R-S		R-S		N-S	Woodland habitat surrounds site. Bog areas exist at the NE corner of site and several hundred feet NW of site (along access road). A drainage runs along eastern edge of site and a creek runs along access road south of site.
9																													Open grassland habitat, no suitable habitat for listed species. A wetland patch exists long eastern fenceline of site.
10																													Open grassland habitat, no suitable habitat for listed species.
11																	N-S											N-OS	Site has scattered tree and shrub clumps, 2 woodrat nests observed in center of site. A small wetland swale/drainage runs along north edge of site @ gate.

[1] Type of suitable habitat present (N = nesting, R = roosting, B = breeding, F = foraging) for special status wildlife species at each proposed helicopter staging site. The second letter denotes if the habitat is present within the site boundaries or outside of site boundaries (O = within site, S = outside of site). The species list is from the biological assessment dated September 2001 by Garcia and Associates.

Site #	Species[1]																												Biological Notes
	River lamprey	Steelhead	California tiger salamander	California re-legged frog	Foothill yellow-legged frog	Western pond turtle	SF garter snake	White-tailed kite	Bald eagle	Northern harrier	Sharp-shinned hawk	Cooper's hawk	Ferruginous hawk	Golden eagle	Merlin	Vaux's swift	Allen's hummingbird	Purple martin	Olive-sided flycatcher	California yellow warbler	Pacific-slope flycatcher	SF common yellowthroat	Long-eared myotis	Fringed myotis	Long-legged myotis	Townsend's western big-eared bat	Pallid bat	Western mastiff bat	SF dusky-footed woodrat	
13								N-S, F-OS									N-S												N-S	Site is surrounded by chaparral and few clumps of tall trees. Woodrat nests were observed along north edge of site. A wetland swale/drainage runs along south edge of site.
14				B-S													N-S													Wetland area near southwest corner of site. Many large trees exist around site, but high human presence create unsuitable condition for nesting raptors.
15				B-S	B-S	B-S		N-S, F-OS			NF-S	N-S, F-OS		F-S			N-S			N-S	N-S			R-S	R-S		R-S		N-S	Creek drainages exist along north and south margins of site. These flow into a medium sized creek with riparian zone west of the site. A wetland patch exists west-southwest of site. Site surrounded by dense woodland habitat. Several woodrat nests observed south of site.
16								F-O									N-S												N-S	A seep was observed at base of access road hill. Site is very noisy due to Hwy 280. Site has scattered clumps of brush and trees surrounding it. Woodrat nests were observed at the north end of site.
18							B-S	N-S, F-OS	NF-S	NF-OS			F-OS		NF-S		N-S			N-S		N-S								The site is a firebreak for the San Francisco Water Department. Wetland habitat extends from Sneath Substation gate (north of the site) south along west side of site to lake. Willow thicket patches were observed within wetland. A large, isolated of cypress was observed west of the wetland, with the majority of surrounding habitat being coyote brush/poison oak scrub.
19																														Disturbed lot with debris piles, no suitable habitat for listed species on site. Many weedy plant species are present. A boggy area exists adjacent to northwest corner of site, but it may not qualify as a wetland.

Site #	Species[1]																											Biological Notes
	River lamprey	Steelhead	California tiger salamander	California re-legged frog	Foothill yellow-legged frog	Western pond turtle	SF garter snake	White-tailed kite	Bald eagle	Northern harrier	Sharp-shinned hawk	Cooper's hawk	Ferruginous hawk	Golden eagle	Merlin	Vaux's swift	Allen's hummingbird	Purple martin	Olive-sided flycatcher	California yellow warbler	Pacific-slope flycatcher	SF common yellowthroat	Long-eared myotis	Fringed myotis	Long-legged myotis	Townsend's western big-eared bat	Pallid bat	Western mastiff bat	SF dusky-footed woodrat	
20																	**N-S**													Site is a graded lot. A bog exists to the west of the site and has a wetland swale that runs north out of it along side the site. Two wetland patches have developed on the western half of the site totalling approximately 2000 sqare feet of area. Chaparral habitat was observed between the site and road to the west.
22																														Site is a highly disturbed lot, offering no suitable habitat for listed species. Woodland and chaparral habitats were observed to the north and east of the site.
23				**B-S**	**B-S**	**B-S**		**N-S, F-OS**			**NF-S**	**N-S, F-OS**		**N-S, F-OS**		**N-S**	**N-S**	**N-S**	**N-S**	**N-S**	**N-S**		**R-S**		**R-S**				**N-S**	Site is a hayfield surrounded by riparian, mixed conifer, and woodland habitats. Site has streams running on north and south sides. Mostly nonnative grassland habitat dominated by wild oats in central opening.

BIOLOGICAL ASSESSMENT

NEW ACCESS ROADS AND CONSTRUCTION PULL SITES

JEFFERSON-MARTIN 230 kV PROJECT

June 22, 2003

Pacific Gas and Electric Company
Technical and Ecological Services
3400 Crow Canyon Road
San Ramon, CA 94583

INTRODUCTION

Pacific Gas and Electric Company (PG&E) has identified cable pulling sites and locations in which new access routes must be constructed or long-unused access roads must be cleared. These cable pulling sites and access roads are mapped in the report "Construction Access and Methods, Preliminary Rev. 2" (Black & Veatch, Sept. 25, 2002), which can be used to illustrate this assessment.

Construction equipment, vehicles, and conductor pulling and tensioning activities may compact soils and disturb vegetative cover at these sites. Construction activities may also harm or disturb wildlife. This biological assessment was prepared to determine whether the proposed cable pulling sites and new or restored access roads would affect sensitive biological resources.

METHODS

In the late winter and spring of 2003, Mr. John Stebbins surveyed the cable pulling sites and new access roads for rare plants, Dr. Richard Arnold for special status invertebrates, and Dr. Sheila Byrne and Mr. Jesse Viscarra for special status vertebrate wildlife species. Methods and target species lists are described in the Proponent's Environmental Assessment. Biological resources on existing access roads were surveyed in 2001 and 2002, and were not systematically resurveyed in 2003. Table 1 gives the dates of surveys.

In addition, Dr. Arnold assessed habitat suitability for sensitive animal species. The assessment of habitat suitability for selected invertebrate species was based on the presence and abundance of the known food plants for the lepidoptera and suitable serpentine rocks for the harvestmen.

Date	Purpose	Participants
1/31/2003	reconnaissance	Sheila Byrne
3/3/2003	reconnaissance, rare plant survey, revegetation assessment	Sheila Byrne, John Stebbins, Frank Chan.
3/18/2003	reconnaissance, invertebrate survey, wildlife survey	Sheila Byrne, Dick Arnold, Jesse Viscarra.
3/20/2003	invertebrate surveys	Dick Arnold
4/2/2003	invertebrate surveys	Dick Arnold
4/9/2003	rare plant, wildlife surveys	Sheila Byrne, John Stebbins
4/9/2003	invertebrate surveys	Dick Arnold
4/16/2003	invertebrate surveys	Dick Arnold
4/23/2003	invertebrate surveys	Dick Arnold
5/1/2003	rare plant surveys	John Stebbins
5/1/2003	invertebrate surveys	Dick Arnold
5/13/2003	rare plant surveys	John Stebbins
6/3/2003	rare plant surveys	John Stebbins
6/11/2003	wildlife habitat assessment	Jesse Viscarra
6/12 /2003	wildlife habitat assessment	Jesse Viscarra

Table 1. List of biological surveys for sensitive species on the cable pulling sites and new or restored access roads.

RESULTS

Plant Communities. Table 2 lists vegetation types, rare plants, and sensitive vertebrate wildlife found on each proposed new or restored access road or cable pulling site. The access to towers 0/2 through 0/5 in Edgewood Park is through serpentine grasslands, a sensitive habitat. However, this access will be used only for foot traffic, and the tower will be flown in by helicopter.

Special Status Plant Species. No rare plants were found on proposed new or restored access road or cable pulling site.

Special Status Invertebrates. No sensitive invertebrates were seen during presence-absence surveys at the access roads or cable pull sites. None of the sites should affect the Ricksecker's Water Scavenger beetle. Table 3 gives the results of habitat suitability assessments for the remaining special status invertebrate that might occur in the area. As detailed in Table 3, eight of the access roads and/or the cable pull sites support patches of *Plantago erecta* and/or nectar plants of the Bay Checkerspot butterfly. Similarly, *Platystemon californicus*, the larval food plant of Opler's Longhorn moth, was observed growing at four of these same locations.

Special Status Wildlife. No special status wildlife species were seen on the access roads or cable pull sites. However, woodrat nests were common wherever thick brush or woodland was present. Stick nests were seen near access roads in 2 wooded areas in the northern part of the route.

PLEASE NOTE: San Francisco garter snake species locations should be kept confidential; therefore the trapping study discussion does not give specific locations; We would be happy to discuss this information with people who need it to do their assessments.

A current trapping study of the San Francisco garter snake seeks to determine if these snakes are present in areas of potential habitat that might be affected by the project. Snakes have been caught in one peripheral area which is about a hundred yards from the nearest project feature. One cable pulling site is within several hundred feet of trapped snakes, and there is a small chance that a San Francisco garter snake could wander into it during wet weather. Dr. Sam McGinnis, San Francisco garter snake expert, believes that mitigation can be implemented to prevent any harm to the snake should this staging area be used. His specific recommendations will be included in his report on the trapping effort. This report will be completed in September.

Revegetation. The new access roads and cable pulling sites can be revegetated using the plan described in the PEA. The native grass crop currently being grown for reseeding should be sufficient to revegetate the access roads and cable pulling sites as well as previously described project features. Two things will need special attention at staging areas: 1) erosion control if road cuts or grading are required and 2) loosening any compacted soil before seeding.

RECOMMENDATIONS

Mitigation measures proposed in the PEA will be sufficient to protect sensitive biological resources in the new or restored access areas and the cable pulling sites.

Table 2. Results of habitat assessment and surveys in 2003 for the Jefferson – Martin 230 kV T/L at construction access roads (CAR - identified by tower existing numbers, and cable pull sites (CPS).				
Project Location	Vegetation Type	Rare Plants	Vertebrate Wildlife	Survey Notes
CAR 0/2-0/5	serpentine grassland	none	none	In Edgewood Park, will use helicopters for construction.
CAR 1/7 & CPS #1	non-native annual grassland	none	none	
CAR 1/10 & CPS 2	nonnative annual grassland with scattered shrubs	none	none	
CAR 1/11-2/13	nonnative annual grassland with scattered shrubs	none	none	Are several alternate routes, all have difficulties with washouts or wetlands. One uses existing pipeline ROW
CAR 2/13 & 2/14, CPS # 4, 5, 6	non-native grassland	none	none	good access
CAR 2/18 & CPS 7	coast live oak woodland	none	woodrat nest near CPS	near intersection of new road and main access road. Good access.
CAR 3/22	coast live oak woodland, manzanita chaparral	none	none	
CAR 4/24-4/24a & CPS 8-10	coyote brush/poison oak scrub	none	none	
CAR 4/25 & CPS 12	nonnative annual grassland with scattered coyote brush shrubs	none	none	
CAR 4/26 & CPS #13	nonnative annual grassland with serpentine grassland elements	none	none	The access road and half the pull site are located on the San Francisco Water Department's firebreak.
CAR 5/27A & CPS #14	nonnative annual grassland with serpentine grassland elements	none	none	The access road and half the pull site are located on the San Francisco Water Department's firebreak.
CAR from Ralston -6/34 & CPS #15	Serpentine grassland; seasonal wetland near Bunker Rd. gate	none	none	CPS 15 is in an obvious wetland for about 100 feet south of the gate on Bunker Rd.
CPS #16	nonnative annual grassland, coast live oak woodland with ruderal elements	none	none	
CPS #17	nonnative annual grassland, native perennial bunchgrass	none	none	Half the pull site in the San Francisco Water Department's firebreak. Patches of native bunchgrass occur in this area.

Table 2. Results of habitat assessment and surveys in 2003 for the Jefferson – Martin 230 kV T/L at construction access roads (CAR - identified by tower existing numbers, and cable pull sites (CPS).

Project Location	Vegetation Type	Rare Plants	Vertebrate Wildlife	Survey Notes
CPS #18 & #19	nonnative annual grassland with serpentine grassland elements	none	none	The pull sites are located on the San Francisco Water Department's firebreak.
CPS #20	coast live oak woodland	none	none	
CPS #21	landscaped	none	none	
CPS #22& #23	golf course	none	none	
CPS #24	nonnative annual grassland with scattered small oaks	none	none	
CPS #25 & 26	nonnative annual grassland	none		The pull sites are partially located on the San Francisco Water Department's firebreak.
CPS 27-29	nonnative annual grassland, eucalyptus forest, coyote brush scrub	none	none	
CAR 11/71 & 11/72	eucalyptus forest	none	woodrats, stick nests	The proposed road follows an existing overgrown track. The San Francisco Water Department started removing much of this stand of eucalyptus in 2003. Stick nest seen in cypress about 100 ft. NNE of tower 11/72. Woodrat nests adjacent to access road.
CAR 11/73, CPS #30 & #31	eucalyptus forest, mixed evergreen forest, roadway	none	stick nests	Pull sites are on a paved road. Two stick nests seen west of the access road.
CPS #32 & #33	nonnative annual grassland, mixed evergreen forest	none	none	Pull sites on road or cleared ROW
CPS #34 & #35	Monterey pine forest with nonnative annual grassland understory	none	none	
CPS #36, #37, and #38	nonnative annual grassland, coyote brush/poison oak scrub	none	woodrat	Woodrat nests occur in dense coyote brush scrub adjacent to the pull site. Pull sites located in mowed San Francisco Water Department firebreak.

**San Francisco garter snake species locations should be kept confidential; therefore specific location informationconcerning this speciespresence onpull sites or access roads is not provided; We would be happy to discuss this information with people who need it to do their assessments.*

Table 3. Results of habitat assessment and focused surveys in 2003 for sensitive invertebrates for PG&E's Jefferson – Martin 230 kV T/L at construction access roads (CAR-identified by existing tower numbers, and cable pull sites (CPS).				
Project Location	Habitat Assessment (++ = habitat present and -- = habitat absent)			Survey Notes
	Opler's Longhorn Moth	Bay Checkerspot	Two Harvestmen	
CAR 0/2-0/5	++	++	++	Larval and adult food plants of the butterfly and moth grow in beds of dirt service roads, especially between towers 0/3-0/5 where butterflies were observed during focused surveys; harvestmen previously observed under rocks between towers 0/2-0/4 and near 0/6.
CAR 1/7 & CPS #1	--	++	--	Scattered and sparse *Plantago* stands grow along dirt access road.
CAR 4/26 & CPS #13	++	++	--	A few individuals of *Platystemon* were observed growing in the access road to the pull site, but no moths were observed during focused surveys.
CAR 4/27A & CPS #14	++	++	--	*Platystemon* grow in the disked fire break south of Ralston substation, but no moths were observed during focused surveys; small patches of larval and adult food plants of the butterfly grow near the tower and in the CPS, but no butterflies were observed during focused surveys.
CAR from Ralston - 6/34 & CPS #15	--	++	--	Patches of larval and adult food plants for the butterfly grow in the service road, especially between Ralston substation and 5/32, but no butterflies were observed during focused surveys.
CAR 7/39-7/40 & CPS #17	++	++	--	*Platystemon* grows in fire break immediately west of homes on Lakeview, but no moths were observed during focused surveys; *Plantago* patches grow in dirt service roads, but no butterflies were observed during focused surveys.
CAR 7/41-7/42	--	++	--	*Plantago* grows in service road, but no butterflies were observed during focused surveys.
CAR 7/44 – 7/46 & CPS #19	--	++	--	*Plantago* grows in service road, but no butterflies were observed during focused surveys.
CAR 8/46 – 8/47	--	++	--	*Plantago* and nectar plants grow in service road, but no butterflies were observed during focused surveys.