

DOCKETED	
Docket Number:	23-OPT-01
Project Title:	Fountain Wind Project
TN #:	256388
Document Title:	fwp_traffic_responses
Description:	N/A
Filer:	Caitlin Barns
Organization:	Stantec Consulting Services, Inc.
Submitter Role:	Applicant Consultant
Submission Date:	5/15/2024 11:40:51 AM
Docketed Date:	5/15/2024

May 14, 2024

California Energy Commission
Attn: Lon Payne
Docket Unit MS-4, Docket No. 23-OPT-01
715 P Street
Sacramento, CA 95814

Re: **Fountain Wind Project –Traffic Study
(response to comments for TN 254771)**
File: 0023714.00

Mr. Payne:

This memorandum has been prepared as a response to comments from the California Energy Commission (CEC) received on April 19, 2024.

TRAFFIC AND TRANSPORTATION

BACKGROUND: Traffic Study

On March 1, 2024, the applicant submitted an updated traffic study (TN 254771) that replaced the original traffic study (TN 251534) to account for its project change to now truck water and pre-mixed concrete to the site instead of using piped water on-site provided by the Burney Water District. The traffic study updated elements of the transportation analysis, like the calculation of vehicle miles traveled (VMT), but updates to other elements may have been overlooked, including modifications to the project trip generation during construction, which is necessary information to evaluate traffic operations on State Route (SR) 299 at the access intersections. In addition, there appears to be an inconsistency between the text description, discussing project traffic at the proposed access intersections and the figures (Figure 4 and Figure 5) illustrating this information.

The following data requests address the deficiencies in the traffic study.

CEC DATA REQUEST TRANSPORTATION-1: Please provide a table summarizing employment levels and the daily, AM peak hour, and PM peak hour trip generation for the project under the construction scenario (peak conditions) and the operations and maintenance scenario. The table should summarize total, inbound, and outbound trips.

APPLICANT RESPONSE:

The CEC data request asks for more information related to changes to the overall trip assumptions in the updated traffic study based on the Applicant's proposal to increase water truck trips to the project site. A summary of employee (worker commute) trips is provided below, along with a discussion of the increased number of water truck (materials) trips that is included in the revised report.

As stated on page 1 of the updated traffic study (TN 254771), the report was revised to account for the updated water and concrete/aggregate needs for the project. The revised study assumes that all of the project water will be delivered to the site from existing resources in either Burney, California, or Redding, California, and, for the purposes of the assessment, that water will be delivered over a 50-mile distance from Redding, California by trucks carrying 4,000 gallons each (a reasonable worst-case scenario). The revised study also conservatively assumes that concrete will be delivered to the site during the construction phase. No concrete batching will occur on site. The study also assumes that three 5,000-gallon water tanks will be drained and filled annually on-site during operations.

Please note that the assertion in the CEC's background statement that the Applicant had previously proposed to use "piped water on-site provided by the Burney Water District" is incorrect; the Applicant previously proposed to truck water to the site as provided by the Burney Water District, and not transport water to the site via pipeline.

Construction Scenario

The second paragraph of Section 4.0 in the updated traffic study (TN 254771) states that "*During construction, the project will employ an estimated maximum number of 199 workers/day during the peak period of construction...*" The table in **Appendix A** illustrates that a maximum of 199 full-time employees (FTE) per day are expected to enter the project site in May 2026. Based on this maximum FTE estimate, a maximum of 398 commuter trips per day (199 entry + 199 exit) are expected to access the site during the heaviest period of construction. A vehicle occupancy ratio of 1.0 was assumed to provide a conservative peak hour trip generation estimate.

The fourth paragraph of Section 8.2 in the updated traffic study (TN 254771) states that "*Consistent with information provided by the Applicant, seventy-five percent (75%) of the commuting workers are anticipated to arrive during the morning hour of 6am – 7am. Forty percent (40%) of the commuting workers are anticipated to leave the site during an afternoon peak hour of 5pm – 6pm...*"

It is assumed that all the commuter trips during the AM peak hour (6am – 7am) are entry trips. The total AM peak hour entry commuter trip generation is equal to 75% of the maximum daily commuter trips ($149 = 199 \times .75$).

It is assumed that all the commuter trips during the PM peak hour (5pm – 6pm) are exit trips. The total PM peak hour exit commuter trip generation is equal to 40% of the maximum daily commuter trips ($80 = 199 \times .40$).

The construction scenario peak hour analysis assumed that the water trucks would be accessing the site at different times from the construction AM and PM peak hour periods analyzed in the study. Therefore, they were not accounted for in the construction scenario (AM and PM) peak hour analysis.

The increase in construction trips attributed to water trucks was accounted for in the Estimated Vehicle Trips and Vehicle Miles Traveled calculations on Exhibit 4 of the updated traffic study (TN 254771). Exhibit 4 also illustrates that 125,413 total two-way trips and 6,606,171 total Vehicle Miles Traveled are anticipated for this project. The daily, AM, and PM peak hour trip generations for the Fountain Wind project are presented in **Table 1** (which, as discussed above, includes worker/commuter trips, not material delivery trips such as water truck trips).

Table 1 – Fountain Wind Trip Generation – Construction Scenario
Peak Construction Period – May 2026

Land Use	Size	Daily			AM Peak Hour (6am-7am)			PM Peak Hour (5pm -6pm)		
		In	Out	Total	In	Out	Total	In	Out	Total
Utility-Scale Wind Farm	205 MW	199	199	398	149	0	149	0	80	80

Section 8.2 in the updated traffic study (TN 254771) states that “For the commuter traffic, it was assumed that 60% of the peak-hour background traffic would be coming to and from the west while 40% would be coming to and from the east...”. Section 8.2 also states that “Directional distribution of the construction, equipment, and material delivery trips was made based on the number of projected wind turbines along each access road. Therefore, it was assumed that 56% of the construction trips would use the West Access Road, and 44% would use the East Access Road.” Construction trip assignments in **Table 2** and on **Figure 4** were based on these percentages. Some discrepancies may exist due to rounding.

Table 2 – Fountain Wind Trip Generation – Construction Scenario

Peak Construction Period Trip Assignment– May 2026

Max Daily Commuter Trips	Peak hour period	Peak Hour Pick-Up Truck Trips (AM)	Pick-Up Trucks from West (60%)	Pick-Up Trucks from East (40%)	West Access Peak	West Access Peak	East Access Peak	East Access Peak
199	AM (Entry) 75%	149	90	60	33 (WBL)	51 (EBR)	27 (WBL)	40 (EBR)
	PM (Exit) 40%	80	48	32	18 (NBR)	27 (NBL)	15 (NBR)	22 (NBL)

Post Construction Scenario

Section 8.2 in the updated traffic study (TN 254771) states that “In the post-construction (i.e., day-to-day operation and maintenance) scenario, there are a minimal number of employees accessing the site for operations and maintenance activities. Therefore, it was assumed a total of eight (8) operations and maintenance workers in four (4) commuter vehicles daily would be entering any of the access points during the AM peak hour from the east and west, and four would be exiting east/westbound during the PM peak hour.” Post construction trip assignments in **Table 3** and on **Figure 5** were based on these percentages.

Table 3 – Fountain Wind Trip Generation – Post Construction Scenario

West Access Peak	West Access Peak	East Access Peak	East Access Peak	West Access Peak	West Access Peak	East Access Peak	East Access Peak
WBL Entry (AM)	EBR Entry (AM)	WBL Entry (AM)	EBR Entry (AM)	NBR Exit (PM)	NBL Exit (PM)	NBR Exit (PM)	NBL Exit (PM)
4	4	4	4	4	4	4	4

CEC DATA REQUEST TRANSPORTATION-2: Please verify that the trip generation summarized in the table provided in response to DR TRANSPORTATION-1, matches the trip generation at the project access intersection on SR 299

APPLICANT RESPONSE:

The construction trip assignments in **Table 2** and on **Figure 4** and the post-construction trip assignments in **Table 3** and on **Figure 5** are consistent with each other and match the trip assignments that were analyzed in the updated traffic study (TN 254771).

CEC DATA REQUEST TRANSPORTATION-3: Please verify that the traffic analysis is correct. Update as needed in response to DR TRANSPORTATION-1 and DR TRANSPORTATION-2.

APPLICANT RESPONSE:

The traffic analysis is consistent with the assignments examined in the responses to DR TRANSPORTATION-1 and DR TRANSPORTATION-2. Therefore, no additional traffic analysis is required.

If you have any questions regarding the responses in this letter or if you need additional information, please contact me at 702-284-5372.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

A handwritten signature in dark ink, appearing to be 'Paul Villaluz', with a stylized, flowing script.

Paul Villaluz, P.E., PTOE, RSP₁
Senior Project Manager



Legend

LANE DESIGNATION	
AM PEAK HOUR TRAFFIC VOLUME	XX
PM PEAK HOUR TRAFFIC VOLUME	XX
SIGNALIZED INTERSECTION	
UNSIGNALIZED INTERSECTION	

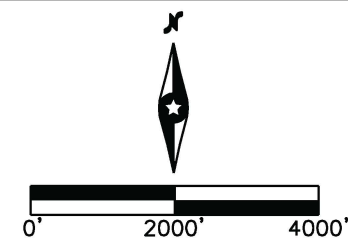


FIGURE 4
Westwood

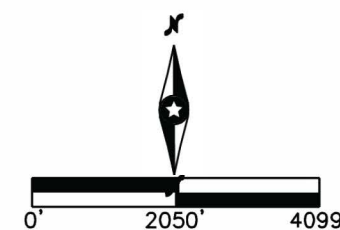
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com

Westwood Professional Services, Inc.
5725 W. Badura Avenue, Suite 100
Las Vegas, NV 89118



Legend

LANE DESIGNATION	
AM PEAK HOUR TRAFFIC VOLUME	XX
PM PEAK HOUR TRAFFIC VOLUME	XX
SIGNALIZED INTERSECTION	
UNSIGNALIZED INTERSECTION	



FOUNTAIN WIND POWER - SHASTA COUNTY, CA POST CONSTRUCTION PEAK HOUR VOLUMES

FIGURE 5 Westwood

Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com

Westwood Professional Services, Inc.
5725 W. Badura Avenue, Suite 100
Las Vegas, NV 89118

APPENDIX A

Full-Time Employment Level Table

APPENDIX A

FTE = Full Time Employee

24 months (month #1 =
January 2025)

Construction Duration:		2025												2026											
		January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Construction Timeline (in months):		22	20	23	20	23	22	21	23	21	22	22	21	22	20	23	20	23	22	21	23	21	22	22	21
Working Days Per Month		22	20	23	20	23	22	21	23	21	22	22	21	22	20	23	20	23	22	21	23	21	22	22	21
Running Project Working Days		22	42	65	85	108	130	151	174	195	217	239	260	282	302	325	345	368	390	411	434	455	477	499	520
Monthly FTEs by Trade:	Craft Desigation																								
Site Management & Supervision	N/A	3	3	3	3	4	7	8	8	11	10	8	2	2	2	2	12	14	14	11	10	10	10	9	4
Heavy Equipment Operator	Operators	6	6	6	6	6	25	35	35	49	39	4	0	0	0	0	23	27	27	13	13	13	9	7	0
Truck Driver	N/A	8	8	8	8	8	15	25	25	27	17	0	0	0	0	0	30	32	32	30	10	10	8	8	0
Crane Operator	Operators	0	0	0	0	0	0	2	2	2	0	2	0	0	0	0	12	11	12	12	11	10	0	0	0
Rigger	Laborers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	6	6	0	0	0
Ironworker	Ironworkers	0	0	0	0	0	0	3	6	6	0	0	0	0	0	0	30	30	34	30	30	30	15	0	0
WTG Technician	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	6	6	16	10	5
Lineman	IBEW	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	20	28	20	8	8	8	0	0	0
Electrician	IBEW	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	12	12	0	4	4	2	0	0
Concreter	50% Laborers, 50% Carpenters	0	0	0	0	0	0	5	10	14	8	8	0	0	0	0	0	0	2	0	0	0	0	0	0
Labourer	Laborers	5	5	5	5	5	5	10	10	25	20	10	0	0	0	0	23	33	33	18	18	18	13	8	0
HVAC	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	2	0	0
Total Daily FTEs per Month		22	22	22	22	23	52	88	96	138	98	46	2	2	2	2	168	199	198	134	120	119	75	42	9

1,701 Total FTEs by month
71 FTEs per year
142 "Job Years"

FTE Two Way Trips Per Working Day		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Total FTE Two Way Trips Per Working Day		44	44	44	44	46	104	176	192	276	196	92	4	4	4	4	336	398	396	268	240	238	150	84	18
Total FTE Two Way Trips Per Month		968	880	1012	880	1058	2288	3696	4416	5796	4312	2024	84	88	80	92	6720	9154	8712	5628	5520	4998	3300	1848	378
Running Project Total FTE Two Way Trips		968	1848	2860	3740	4798	7086	10782	15198	20994	25306	27330	27414	27502	27582	27674	34394	43548	52260	57888	63408	68406	71706	73554	73932
Running Project Total FTE Two Way Truck Trips	(Veh Occ = 2 FTE per Truck)	484	924	1430	1870	2399	3543	5391	7599	10497	12653	13665	13707	13751	13791	13837	17197	21774	26130	28944	31704	34203	35853	36777	36966
	Craft	11	11	11	11	11	30	55	63	100	71	38	0	0	0	0	120	147	146	87	94	93	41	15	0

	4-5 AM	5-6 AM	6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	7-8 PM
% Workers Arriving	5%	5%	75%	15%											
% Workers Departing											5%	40%	40%	15%	