Kimley»Horn

June 27, 2018

Mr. Stuart Coles
JSI Construction Group LLC
1710 29th Street, Suite 1068
Boulder, Colorado 80301

Re: Palmer Solar Project, Birdsall Road and Old Pueblo Road
El Paso County, Colorado
Traffic Analysis Letter

Dear Mr. Coles:

The purpose of this letter report is to document the results of a traffic analysis prepared for the proposed Palmer Solar project to be located on the north side of Birdsall Road, east of Old Pueblo Road and Interstate 25, in El Paso County. The solar field project site is approximately 525 acres, separated into two arrays, located south of the City of Fountain. A vicinity map illustrating the location of the Palmer Solar project is shown in attached **Figure 1**.

Duration of construction activity for the solar facility may vary based on phasing and the size of the phase. Construction will generally follow these steps:

- Mobilization
- Site clearing and grading (minimal grading limited to only what is necessary)
- Construction of security fencing, roads, laydown areas, inverter and equipment pads, and building foundations
- Installation of array supports and digging of cable trenches
- Installation of array mounting structures and modules
- Installation of cables, inverters, substations, and buildings
- Completion of interconnection
- Construction of (Colorado Springs Utilities) CSU Substation
- Testing and commissioning
- Demobilization

For purposes of this analysis, it is believed that construction will occur over a period of 10 to 12 months with the peak construction traffic activity occurring during a three-month period. This traffic study was prepared analyzing the peak construction traffic during the highest three months of activity.

Regional access to Palmer Solar will be provided by the public roads of: Interstate 25 (I-25), Old Pueblo Road, and Squirrel Creek Road. Primary and direct access to the site areas will be provided from the existing full movement intersection of Old Pueblo Road and Birdsall Road on the western side of the proposed site, labelled in **Figure 1**. This western access intersection along Old Pueblo Road operates with Yield control on the westbound Birdsall Road approach. The intersection is located approximately two miles north of the Old Pueblo Road interchange for I-25 and approximately three miles south of the Santa Fe Avenue interchange. The proposed eastern access location will be a connection made to the gravel road that runs north to Squirrel Creek, labelled in **Figure 1**. This private gravel road intersects Squirrel Creek Road approximately two miles east of the Squirrel Creek Road and Link Road intersection. The eastern and western access points will be utilized for construction. The eastern access will not be utilized after construction while the western access will serve operations and maintenance

traffic. After the solar facility is completely constructed, the trips generated will be nominal to none, so the access location won't see a negative impact.

Old Pueblo Road extends north to the City of Fountain and is a parallel access road to Interstate 25. Old Pueblo Road is a paved roadway adjacent to the site. Birdsall Road is a paved local road up through the access to the existing water treatment plant, where it become a gravel road thereafter to the east. The roadway provides one through lane in each direction. The project site is currently vacant/agricultural land. Agricultural uses exist within the surrounding area and residential uses exist to the north in the City of Fountain.

Site-generated traffic estimates are determined through a process known as trip generation. The number of trips was determined for the Palmer Solar facility based on anticipated construction activity and operations. In order to study the effect of construction traffic created by the solar facility, the expected trips during the peak period of construction were used as the basis for this study. The peak construction traffic activity is anticipated to occur over a three-month duration.

Previous experience with solar facility construction data have been extrapolated to estimate the needs for the project site. At the start of construction, approximately 25 personnel will be onsite during the civil construction activities. This will ramp up to approximately 250 construction workers during peak construction activities. An additional 15 delivery trucks and 10 water trucks per day.

Construction Traffic Trip Generation

The typical construction peak season workday will see most workers arriving and departing during a common peak hour. The standard construction hours are anticipated to be 7:00 am to 5:00 pm. Most workers to the site will arrive between 6:00 am and 7:00 am and depart between 4:00 pm 5:00 pm. Construction will be limited to daylight hours, unless otherwise approved by the Planning Commission. Based on this, it was assumed that 80 percent of the construction worker traffic would occur during a common peak hour. It is under the assumption that construction truck delivery trips and water truck trips would be scheduled to typically avoid the peak morning and afternoon traffic hours. However, it is assumed that approximately 10 percent of the delivery trucks and water trucks trips would occur during the AM and PM peak hours to provide conservative trip generation calculations. The Palmer Solar project, including the construction of the adjacent CSU substation, is expected to generate approximately 550 daily trips with 206 of these trips occurring during the morning and afternoon peak hours. The generated traffic will be split between two access locations, shown in **Figure 1** and detailed in the table below.

Palmer Solar Plant Project – Construction Traffic Generation

Type	Vehicles Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Western Access Location							
Construction Workers (125)	250	100	0	100	0	100	100
Delivery Trucks (8)	16	2	1	3	1	2	3
Water Trucks (5)	10	1	1	2	1	1	2
Access Total	*276*	*103*	*2*	*105*	*2*	*103*	*105*
Eastern Access Location							
Construction Workers (125)	250	100	0	100	0	100	100
Delivery Trucks (7)	14	2	1	3	1	2	3
Water Trucks (5)	10	1	1	2	1	1	2

Access Total	*274*	*103*	*2*	*105*	*2*	*103*	*105*
Site Total	**550**	**206**	**4**	**210**	**4**	**206**	**210**

Operational Traffic Trip Generation

After the Palmer Solar project has been constructed, the number of trips generated by the solar plant is expected to be significantly less than during the construction period. The project will be an unmanned facility with weekly site visits by operational personnel, not expected to exceed 10 trips per month. On the occasional day when the site visit occurs, the trip generation is anticipated to be two trips per day with the one employee arriving during the morning peak hour and then departing during the afternoon peak hour. Therefore, traffic impacts related to the operation of the solar plant facility will be negligible and insignificant.

Palmer Solar Plant Project – Operational Traffic Generation

Type	Vehicles Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employee (1)	2	1	0	1	0	1	1
Total	2	1	0	1	0	1	1

Based on the analysis presented in this report, Kimley-Horn and Associates, Inc. believes Palmer Solar will be incorporated into the existing roadway network. The following conclusions and recommendations are provided for consideration based on project generated traffic:

- The access locations along Bridsail Road should operate with existing stop control on the existing access approaches with R1-1 “STOP” signs installed.
- No changes to roadway configuration are suggested.
- All on-site and off-site signing and striping improvements completed should be incorporated into the Civil Drawings, and conform to El Paso County standards as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).

If you have any questions or require anything further, please feel free to call me at (303) 228-2300.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Curtis D. Rowe, P.E., PTOE
Vice President

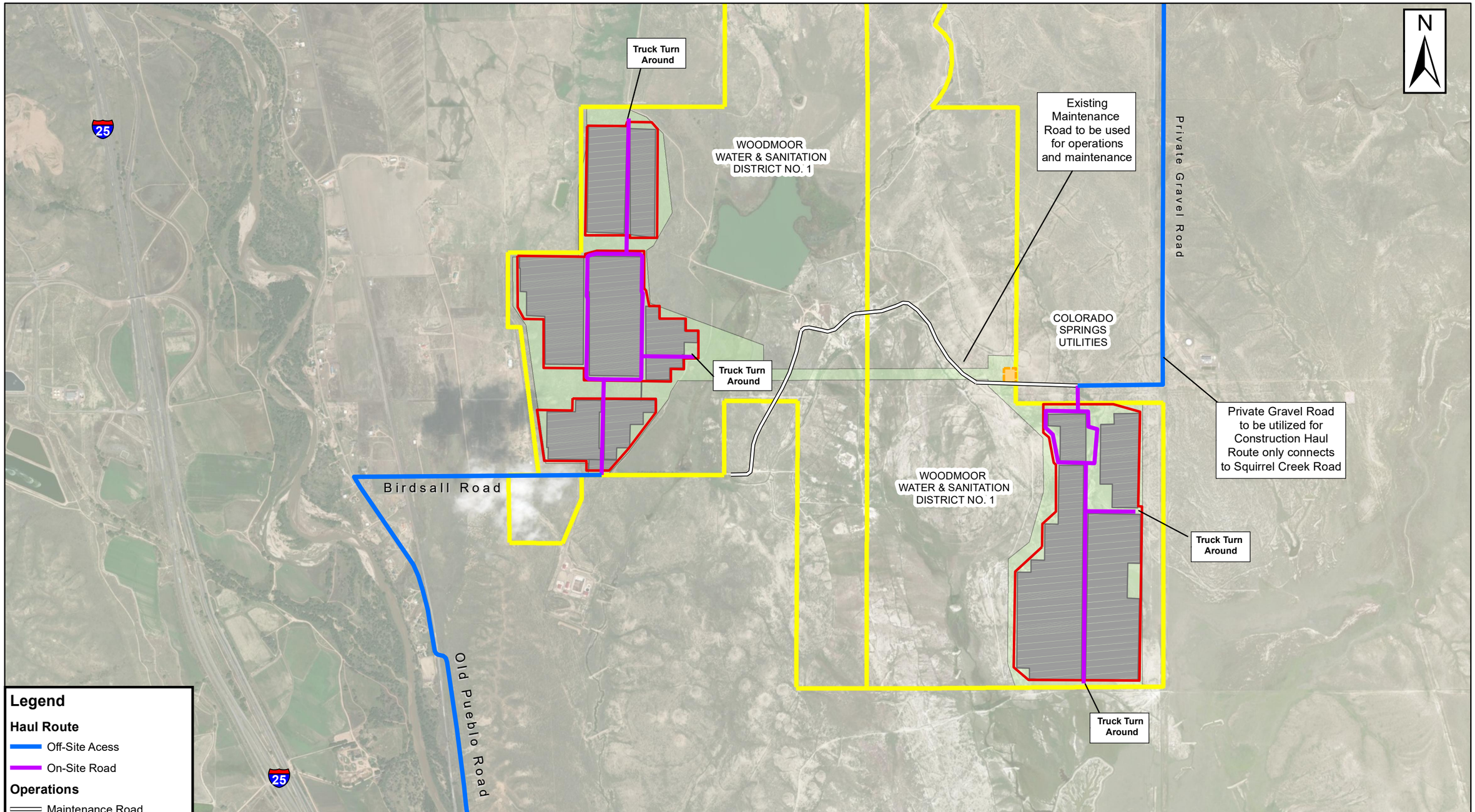
COLORADO REGISTERED PROFESSIONAL ENGINEER
CURTIS DANIEL ROWE
36355
06/27/2018

Figure 1

Vicinity Map

El Paso County, Colorado

Kimley»Horn



Palmer Solar Project

Haul Route Map

El Paso County, Colorado

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City of Fountain Official Truck Routes