

PIKE SOLAR LLC



Appendix AK- Road Condition Survey Work Plan

Pike Solar, El Paso County, CO
Road Condition Survey Work Plan
 August 31, 2021

INTRODUCTION

juwi Inc. (juwi) plans to develop a large-scale photovoltaic Project (Pike Solar, or, “Project”) in El Paso County, Colorado. The Project will be located Southeast of the Landfill and Northeast of Palmer Solar and is planned to have a footprint of approximately 1,200 acres. The construction operations are planned to begin in March 2022 and are expected to last for a duration of 21-24 months. Material deliveries are expected to start approximately two weeks prior to start of the construction activities.



Juwi has developed a Road Condition Work Plan to assess any potential accelerated degradation of the pavements that will be utilized by the construction traffic during the construction period. The goal of this plan is to conduct an objective pavement condition assessment before, during and after the construction operations have been completed to assess the pavement condition and capture Right-of-Way (ROW) imagery to document the condition of the road sections. The pavement condition assessment methodology will be similar to that used by the El Paso County (“The County”) to assess their County roads.

Construction traffic is expected to access the Project site through the North and the South Routes listed below in Table 1 and depicted below in Figure 1. Table 1 shows the section limits and estimated centerline lengths.

Table 1: Project North and South Access Paved Road Sections and Centerline Mileage

Route	Street Name	From	To	CL Miles	Route CL Miles
North Route (City of Fountain Truck Route)	CO-16 (Mesa Ridge Pkwy)	I-25 Interchange	Powers Bd S	3.1	9.1
	Mesa Ridge Pkwy*	Power Bd S	Marksheffel Rd S.	1.4	
	Marksheffel Rd S.*	Mesa Ridge Pkwy	Link Rd	0.8	
	C&S Road	Marksheffel Rd S.	Link Rd	0.3	
	Link Rd	Marksheffel Rd S.	Squirrel Creek Rd	1.0	
	Squirrel Creek Rd	Link Rd	2.5 miles E of Link Rd	2.5	
South Route	Old Pueblo Rd*	I-25 Exit	Birdsall Rd	3.0	3.9
	Birdsall Rd*	Old Pueblo Rd	0.9 miles E of Old Pueblo Rd	0.9	

*El Paso County Roads.

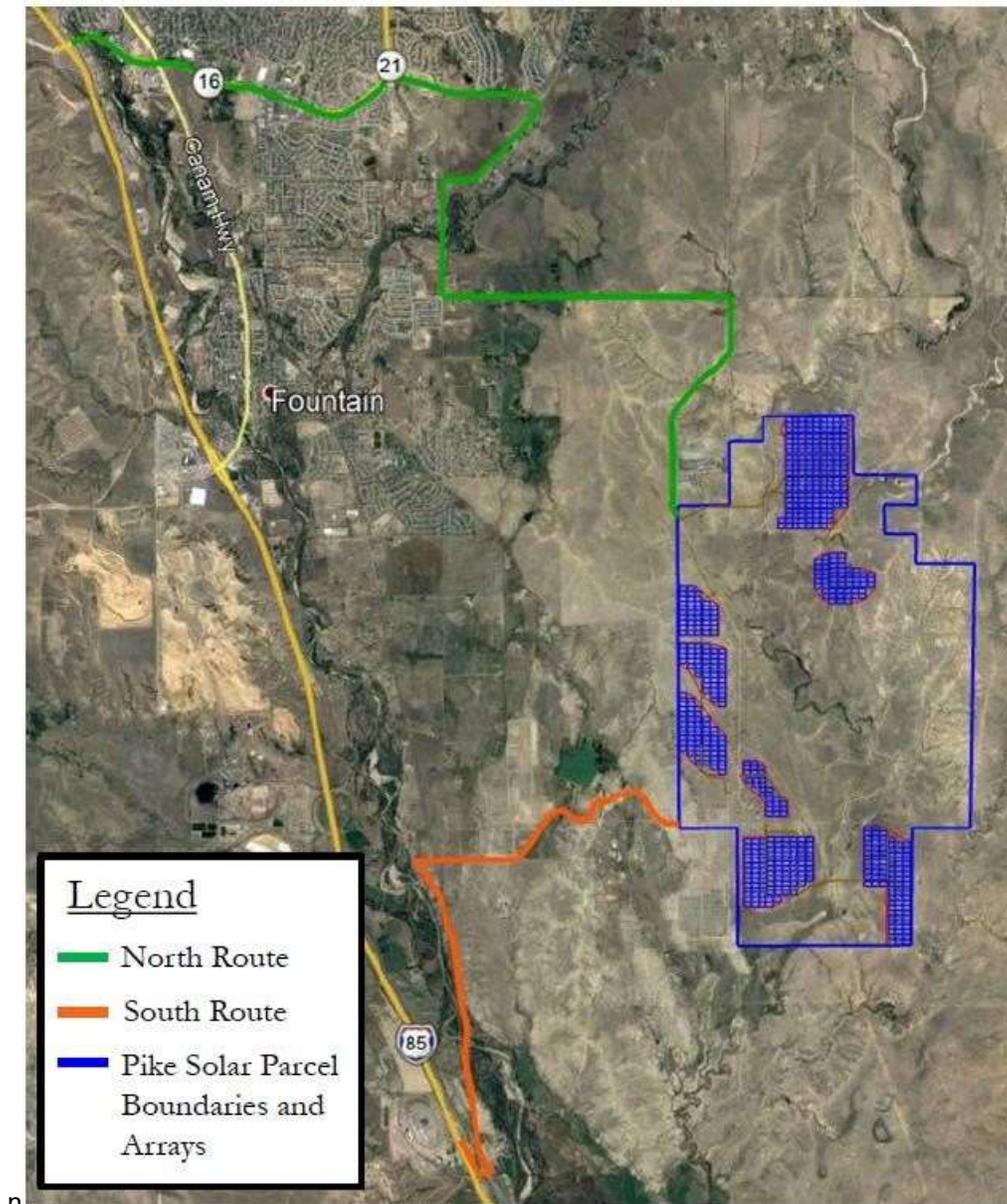


Figure 1: Project North and South Access Routes

CONSTRUCTION TRAVEL ESTIMATES

Construction-related traffic is divided into three categories; 1) Worker Travel; 2) Civil Construction Equipment/Materials; and 3) Solar/Battery System Equipment/Materials. Workers are expected to access the site through the North Route with a total number of daily trips estimated at 50,000 over the 730 days during the construction period. Expected vehicle/truck weights that will access the site range between 2,000 lbs. for light passenger cars up to 66,000 lbs. for various trucks and haulers. Approximately 10 trips are expected to be completed using oversize haulers with a total weight of 110,000 lbs. A haul permit will be obtained for these oversize haulers. Aside from Worker Travel, the vast majority (>95 %) of the trips will use the South Route.

TENTATIVE PROJECT SCHEDULE

Table 2: Tentative Project Schedule

Activity	From	To
Mobilization of Materials and Equipment	03/01/2022	11/01/2023
Contractor Work	03/22/2022	11/02/2023
Testing, Commissioning, and Close-Out	02/22/2022	02/15/2024

PROPOSED SCOPE OF WORK

The proposed scope of work is summarized below in Table 3. The two major activities that are included in the scope of work are: Pavement Condition Assessment and Pavement Management System (PMS) Analysis. The proposed timing for the field work is also provided below in Table 3.

Table 3: Proposed Scope of Work and Timing

Activity	Round	Start	End
Surface Distress and Roughness Survey on All Lanes of Both North and South Routes. Includes Right-of-Way (ROW) Image capture and processing.	1	During 02/2022	Before Operations begin
	2	During 02/2023	During 02/2023
	3	During 02/2024	During 02-10/2024 after All heavy equipment travel ends

PROPOSED WORK PLAN

Our approach for successfully implementing the proposed scope of work presented above is based on the tasks below.

- Task 1: Surface Distress Survey
- Task 2: Roughness Survey
- Task 3: Digital Images and Spatial Referencing
- Task 4: Data Management Methodology
- Task 5: Reporting

TASK 1: SURFACE DISTRESS SURVEY

- 1.1 Conduct a surface distress survey on all paved sections described in this SOW. A tabular listing of paved sections shall be provided.
- 1.2 Indicate the surface distress collection interval and roadway coverage plan. Provide an explanation of proposed methodology for surveying roads with multiple lanes in each direction of travel. Continuous data sampling submitted in 100-foot intervals is the preferred survey interval.
- 1.3 For flexible pavements, the following distresses shall be collected: Wheel Path Rutting, Transverse Cracking, Patching, Edge Cracking, Excessive Crown, Map Cracking, Rippling, Pavement Distortion, Potholes, Flushing – Bleeding, Alligator Cracking, Raveling, and Longitudinal Cracking. Surface distress data shall have the severity and extent for each distress type. Any additional distresses which feel relevant are to be included in the deliverables.

TASK 2: ROUGHNESS SURVEY

- 2.1 Conduct a surface distress survey on all paved sections described in this Work Plan. A tabular listing of paved sections shall be provided.
- 2.2 Indicate the roughness survey interval and roadway coverage plan. Provide an explanation of proposed methodology for surveying roads with multiple lanes in each direction of travel. Continuous data sampling submitted in 100-foot intervals is the preferred survey interval. Survey intervals will be collected in a manner consistent with existing data in the County's pavement management software.
- 2.3 Undertake an objective measured roughness survey of all paved sections. Roughness data must meet the specifications of the International Roughness Index (IRI) and utilize a laser-based Class II profiler as designated by the Federal Highway Administration. If a Class II profiler is not available specify the profiler to be used and the impact on final data provided. Roughness data must be station specific for each section and must correspond to the station intervals used in the surface distress survey. Indicate the longitudinal sampling rate, wheel path, travel lane and direction of travel for roughness data collection.

TASK 3: DIGITAL IMAGES AND SPATIAL REFERENCING

- 3.1 Image Size and Spatial Referencing. Digital images shall be collected and delivered in .jpg format. The images shall be a minimum of 24-bit color, 80 percent .jpg quality, and have a minimum size of 6 megapixels. The horizontal aspect will achieve a minimum of 120- degree viewing angle. Photographs will be taken every 15 feet, or more frequently. Each photo must be identified with a GPS location. A GIS layer file that contains all photo locations shall also be provided. The GIS database shall contain the image ID, the image name, the path, the folder, and a hyperlink that will open the image file.
- 3.2 ROW Images. Clearly capture pavement cracks, medians, gutters, curbs, up to four lanes of traffic (same direction and opposing), road surface on vertical and horizontal curves, and road signs within right-of-way on same side of roadway as collection vehicle. Camera should not be zoomed in too far.

TASK 4: DATA MANAGEMENT METHODOLOGY

All data will be uploaded directly to the County PMS. Some section of roads included in this survey are not in the PMS. Road sections will be added in and the data uploaded if that approach is preferred by the County, otherwise for road sections not included in the PMS no data will be uploaded. The County is using Stantec's Road-Matrix pavement management software version 2.0.8 with database version 2.0.3 with a SQL server database as of June 2018. All data collected shall be directly compatible with the current software system and database version in use by the County

TASK 5: REPORTING

On three (3) occasions, before, during, and after construction, the Juwi shall deliver surface distress, ride condition (roughness) data, pavement width, and digital images for each roadway section directly to the El Paso County PMS or provided directly to the County.

Interim Reports

Interim reports will be generated to document the results of the pavement condition surveys. The first interim report will include detailed approach, equipment used, and results of the first condition survey cycles. Follow-up reports will include only the results of the pavement condition survey after each round of testing.

Final Report

A final report will be submitted that contain the following as a minimum:

- Executive Summary.
- Data Collection procedures and equipment used.
- Results summary of each Surface Distress and Roughness Survey.
- Summary of pavement performance indices (RCI, SDI, PQI) changes over all survey cycles.
- Summary of Conclusions

Table 5: Reporting Schedule

Report	Completion
Interim Report 1 (Approach + Condition Assessment Round 1 Results)	Week of 3/13/2022
Interim Report 2 (Condition Assessment Round 2 Results)	Week of 3/12/2023
Final Report	Week of 4/29/2024

Exhibit "A":
Impact Mitigation Development Agreement
(Non-Executed Draft)

PIKE SOLAR LLC



Development Impact Mitigation Agreement

DEVELOPMENT IMPACT MITIGATION AGREEMENT

Between

JSI Construction Group LLC

And

El Paso County, Colorado

This Development Impact Mitigation Agreement (this "Development Agreement") is made and entered into this ___ day of August 2021 by and between JSI Construction Group LLC, a Delaware limited liability company, authorized to do business in the State of Colorado ("Developer"), and El Paso County, Colorado, a statutory county and political subdivision of the State of Colorado, acting by and through the Board of County Commissioners of El Paso County, Colorado (the "County"). Developer and the County may be referred to herein as the "Parties".

I. BACKGROUND AND MISSION.

Developer and its affiliates plan to develop and build the Pike Solar and Storage Project, which is a 175 MW solar photovoltaic and battery energy storage system project in El Paso County, Colorado (the "Project"). The Project will consist of photovoltaic modules aligned in arrays and affixed to a single-axis tracking system and a centralized AC-coupled battery energy storage system. The County's Wind and/or Solar Energy Generation Plan Overlay (the "WSE-O") District zoning classification, pursuant to Section 4.3.5 of the Land Development Code of El Paso County, Colorado (the "LDC"), requires applicants to submit a WSE-O Plan and development impact mitigation agreement and obtain the WSE-O rezoning and approvals to site solar energy generation facilities. Section 4.3.5(D)(2) of the LDC requires this Development Agreement to address and mitigate "external impacts to nearby properties and the adjacent infrastructure." The Parties intend to mitigate road impacts to the Southern Route (defined below) by establishing a Road Impact Fee (defined below) to be borne by Developer as outlined herein.

II. ROAD CONDITION SURVEY AND ROADWAY DAMAGE.

The construction of the Project is scheduled to begin once necessary permits have been obtained, currently anticipated Q1 2022, and is expected to last for a duration of approximately 19 months. Construction vehicles will access the Project site, in part, through the County's roads shown in Table 1 below (the "Southern Route").

Table 1: Project Southern Access Paved Road Sections

Section #	Street Name	From	To	Fun. Class	PaveType
0000081800	BIRDSALL RD	OLD PUEBLO RD	MOONSHADOW LN	Rural - Local	Hot Bituminous Pavement
0000081900	BIRDSALL RD	MOONSHADOW LN	2590'	Rural - Local	Hot Bituminous Pavement
0000581400	OLD PUEBLO RD	I-25 RAMP	3398'	Rural - Minor Collector	Hot Bituminous Pavement
0000581500	OLD PUEBLO RD	3398'	HANOVER RD	Rural - Minor Collector	Hot Bituminous Pavement
0000581600	OLD PUEBLO RD	HANOVER RD	3918'	Rural - Minor Collector	Hot Bituminous Pavement
0000581700	OLD PUEBLO RD	3918'	BIRDSALL RD	Rural - Minor Collector	Hot Bituminous Pavement

In connection with the construction of the Project, Developer agrees that it is financially responsible for its proportionate share of the road maintenance costs directly attributable to any damages to the Southern Route from the transportation and hauling of equipment and supplies to the Project (collectively, the “Roadway Damages”).

Developer will prepare, or cause to be prepared, road condition surveys (each, a “Road Condition Survey”) prior to commencement of construction, one year after commencement of construction, and after construction of the Project has been substantially completed. The Road Condition Survey Work Plan, attached as Exhibit A, describes the approach and outlines the methodology for Developer’s evaluation of the road conditions along the Southern Route. During construction of the Project, Developer will make periodic visual observations of the Southern Route and shall document and compare such observations against the most recent Road Condition Survey to assess any Roadway Damages. Developer shall share such observations and comparisons with the County. Developer may, at its sole cost and expense, make minor roadway repairs including, but not limited to, the filling of cracks or potholes, shoring up berms or shoulders, and other minor repairs necessary to keep the roads comprising the Southern Route in a safe and passable condition, in each case, as determined by Developer in its reasonable discretion, and without prior notice to the County. Any such repair work performed by Developer shall be performed in accordance with the LDC and any other applicable law. Notwithstanding the foregoing to the contrary, the County may, in its reasonable discretion, elect to repair or mitigate any Roadway Damages to the extent the scope and plan for such work have been agreed upon and documented in writing on the form attached hereto as Exhibit B by the El Paso County Public Works Department’s Road Supervisor or its designee and the Developer’s site manager or its designee.

III. ROAD IMPACT FEE.

In connection with Developer’s repair and maintenance obligations set forth above, Developer shall provide County with a surety bond, letter of credit or cash collateral (“Security”) in the amount of One Hundred Thirty-Three Thousand Five Hundred Six Dollars and 38/100 (**\$133,506.38**) (the “Road Impact Fee”), prior to the commencement of construction, it being acknowledged and agreed

by the Parties that this amount reflects the maximum liability associated with any Roadway Damages that are not repaired or mitigated by Developer hereunder. If the County repairs or mitigates any Roadway Damages as a result of Developer's failure to do so or pursuant to the last sentence of Section II above, the County may draw funds from the Road Impact Fee equal to Developer's proportionate share of the reasonable and documented out-of-pocket costs and expenses incurred by the County to complete such repair or mitigation work. The County shall release or return to Developer the balance of the Security promptly following the completion of the repair or mitigation work for the Roadway Damages.

IV. RESPONSIBLE PARTIES – CONTACTS.

Developer and the County shall each designate below a single point of contact to coordinate the use and repair of roadways during Developer's construction of the Project and to address, as a coordinated effort, complaints regarding road and traffic issues.

Brian Vickers, JSI Construction Group Project Manager (720) 838-2302

El Paso County Planning & Community Development Department (719) 520-6300

El Paso County Department of Public Works (719) 520-6460

VI. TERM.

The term of this Development Agreement will be in effect until the final Road Condition Survey is submitted to the County and any Roadway Damages have been repaired or mitigated. Once outstanding repairs or mitigations are completed or resolved (as evidenced in writing by Developer and the County) and any balance of the Security is released or returned to Developer, this Development Agreement will automatically terminate.

[Signature Page Follows]

IN WITNESS WHEREOF, each Party, intending to be legally bound, has duly executed and delivered this Development Agreement by its duly authorized officer as of the date first above written.

JSI CONSTRUCTION GROUP LLC

Name Sign: _____

Date: _____

Name Print: _____

Title: _____

El Paso County Board of County Commissioners

Name Sign: _____

Date: _____

Name Print: _____

Title: _____

EXHIBIT A

Road Condition Survey Work Plan

EXHIBIT B

Significant Damage Assessment Form

Background

Date	Enter date of observation	Time	Enter time of observation
Name	Enter name of assessor	Organization	Enter assessor's organization
Road Name	Enter name of assessed road	Weather Conditions	Briefly describe current temperature and precipitation

Attach a map showing the location of the observation

Damage Description

Provide a detailed description of the observed damage.

Photo Log

Photo Description	Image Name
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Action Items

Action Item	Responsible	Deadline
1. Prepare Mitigation Plan		
2. Implement Mitigation Plan		

Action Item	Responsible	Deadline