August 25, 2023

Joanne Snarski
Energy Facility Siting Specialist
Washington Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504 -3172

Re: Responses to Data Request 1 – DR-T-01 for Carriger Solar, LLC Project Application for Site Certification

Dear Ms. Snarski,

Cypress Creek Renewables, LLC, (CCR) is submitting the enclosed response to Data Request T-01 for the Carriger Solar, LLC Project (Project) Application for Site Certification (ASC) submitted to the Washington Energy Facility Site Evaluation Council (EFSEC) on February 10, 2023. The T-01 Data Request from EFSEC included the following:

> *To ensure transportation circulation, safety, and that LOS will not degrade beyond acceptable levels, it is recommended that the Applicant provide a comprehensive traffic impact analysis (TIA) conducted by a licensed traffic engineer, including LOS analysis at critical intersections along SR-142 in Goldendale for the peak construction phase. The scope and content of the TIA study should be developed in coordination with WSDOT, Klickitat County, and EFSEC.*

As a follow up to this data request, EFSEC scheduled a call between CCR, Klickitat County, and Washington Department of Transportation (WSDOT) on May 24, 2023 to discuss the data request and the County and WSDOT's concerns related to potential traffic and road impacts from the construction and operation of the Project. During this coordination call, the County stated that a full TIA was not needed because capacity was not anticipated to be an issue. The County did request that a trip generation and trip distribution analysis be included as part of the ASC. WSDOT agreed that capacity is not an issue on SR-142, but that a truck turning analysis at the intersection with Knight Road and SR-142 would be beneficial. All parties agreed that CCR would provide the following information at this time:

- Trip generation analysis
- Trip distribution analysis
- Truck turning analysis at SR-142/Knight Road and identify geometric improvements need to accommodate these turns and
- Identification of pre-construction surveys and scope

This information is enclosed in Attachment T-1: Supplemental Traffic Assessment. CCR anticipates that EFSEC will provide Attachment T-1 to WSDOT and the County for comment.

If you have any questions or require further information, please contact me at: lauren.altick@ccrenew.com.

Sincerely,

Lauren Altick
Project Developer

Attachment

Cc:

Sean Greene, EFSEC
Tai Wallace, CCR
Julie Alpert, CCR
John Hanks, CCR
Leslie McClain, Tetra Tech

Attachment T-1: Supplemental Traffic Assessment

TETRA TECH

TTCES-ADM-23-0032
August 23, 2023

Ms. Joanne Snarski
Energy Facility Site Specialist
Washington State Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
joanne.snarski@efsec.wa.gov

RE: Supplemental Traffic Assessment
Carriger Solar, LLC Project
EFSEC Docket Number: EF-230001
Klickitat County, WA

Dear Ms. Snarski,

Tetra Tech, Inc. (Tetra Tech) has prepared this supplemental traffic assessment for the construction of the Carriger Solar, LLC project (the Project) proposed by Cypress Creek Renewables, LLC (CCR) located approximately 2 miles west of the City of Goldendale in unincorporated Klickitat County. The Project boundaries and proposed driveway locations in relationship to the regional roadway network are shown in Figure 1. The purpose of this assessment is to provide the Washington State Energy Facility Site Evaluation Council (EFSEC), Washington State Department of Transportation (WSDOT), and the Klickitat County Public Works Department with detail regarding the anticipated vehicle trip generation and distribution characteristics associated with the construction of the Project. This information further refines the initial traffic generation assumptions made in the Project's Application for Site Certification (ASC) submitted February 10, 2023. The initial assumptions included in the ASC were a worst-case scenario; however, after further discussion with CCR, the anticipated peak construction work force is anticipated to be up to 250 construction workers at one time (versus 450 assumed in the ASC). This reduction in peak work force reduces the peak vehicle trip counts during the peak construction period. The additional information provided in this assessment would result in the same conclusion as made in the ASC: the anticipated level of temporary increase in traffic during peak construction is not anticipated to create a significant impact on current traffic conditions. This letter also summarizes the additional traffic-related studies that CCR is committed to conducting prior to construction. As part of the additional studies, CCR will conduct a detailed Traffic Impact Analysis (TIA) in accordance with WSDOT and Klickitat County guidelines prior to issuance of a construction permit for the Project. Any potential impacts to current traffic conditions, intersections, or roadways are anticipated to be mitigatable through the implementation of the additional traffic-related studies described in this letter.

Project Trip Generation

Preliminary vehicle trip generation estimates were included in the Project's Application for Site Certification (dated February 10, 2023). These estimates were further refined as part of this supplemental traffic assessment based on updated construction operation information anticipated for the Project provided by CCR.

As discussed in the ASC filing, the Project will consist of three stages including initial construction, Operation and Maintenance (O&M), and decommissioning of the facility. The highest volume of site-related traffic will occur during the construction phase of the Project. Construction of the proposed energy facility is expected to include grading, panel installation, inspections, and equipment deliveries. To the extent possible, construction activities

would primarily be scheduled Monday – Friday during daylight hours, with some limited activities, such as concrete pours, occurring on nights and weekends.

It is anticipated that the peak construction impacts would occur during the weekday morning and weekday evening commuter peak hours, when the combination of existing traffic on the surrounding area roadways and potential construction related traffic would be greatest. It is also expected that the majority of construction workers would arrive and depart the site outside of the typical weekday morning and weekday evening commuter peak hours of the adjacent streets (assumed to be 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM). However, to provide a conservative assessment of potential traffic increases associated with the Project, it is assumed that all of the construction workers would arrive during the weekday morning peak hour and depart during the weekday evening peak hour. Potential traffic impacts associated with the limited construction activities occurring during nights and weekends would be substantially less than those experienced during the typical weekday commuter peak periods.

Peak construction activities are currently anticipated to occur for only a portion (8 to 10 months) of the approximate 16-month construction schedule. During this time, it is anticipated that the site could experience construction workforce levels of up to 250 construction workers at one time. The remainder of the construction period (approximately 6 to 8 months) is anticipated to consist of significantly fewer workers. The maximum number of workers anticipated during the non-peak construction stages is 100 workers at any one time (sometimes the workforce levels will be much less) and is therefore expected to generate significantly fewer vehicle trips than during the peak construction operations. The supporting trip generation calculations and assumptions for the proposed Project's peak and non-peak construction workforce levels are provided in the Attachments.

There are currently no public transportation services in vicinity of the Project site that are anticipated to be used for the Project. Therefore, for the purposes of this assessment, it was assumed that no construction workers would use public transit to access the site. Additionally, it is anticipated that some construction workers would arrive and depart the site together (carpooling). For purposes of this assessment, it was conservatively assumed that 10 percent of workers would carpool to/from the site with a vehicle occupancy of two occupants per vehicle.

The vehicle trip generation estimates for the Project's peak and non-peak construction phases are summarized in Table 1. The summary includes a breakdown of estimated vehicle trips by type (construction workforce commuting trips, mid-size vehicles and semi tractor trailers). The vast majority of construction workforce commuting trips are expected to occur during the morning and evening peak periods with limited trips during the middle of the day to run errands off-site. A variety of trucks will be needed during construction of the Project including dump trucks, fuel trucks, water trucks, material delivery trucks, waste trucks, sanitation trucks and other construction vehicles. It is anticipated that the truck trips will occur throughout the day to drop off materials, haul earth materials and remove waste. Approximately 10 percent of the daily truck trips are expected to occur during the weekday morning and evening commuter peak hours.

A more detailed breakdown of daily trip generation by vehicle type for the Project's entire construction duration will be provided in the detailed TIA to be prepared for the Project and will be used as the basis for the pavement analysis of Knight Road (Knight Road Geotechnical Report). The detailed trip generation analysis will include estimates and calculations for the expected daily trips of construction traffic for the entire construction duration including labor force commuters, mail, fuel, sanitation, food trucks, equipment deliveries, construction materials and all other project related trips to be consistent with the request made by the Klickitat County Public Works Department in their letter dated April 18, 2023.

Table 1 Construction Trip Generation Summary [1]

Time Period/ Direction	Number of Vehicle Trips [1]							
	Non-Peak Construction Workforce [2]				Peak Construction Workforce [3]			
	Workforce Vehicles	Mid-Size Trucks	Semi Tractor Trailer Trucks	Total	Workforce Vehicles	Mid-Size Trucks	Semi Tractor Trailer Trucks	Total
WEEKDAY AM PEAK HOUR								
Enter	95	1	1	**97**	238	1	1	**240**
Exit	0	1	1	**2**	0	1	1	**2**
Total	**95**	**2**	**2**	**99**	**238**	**2**	**2**	**242**
WEEKDAY PM PEAK HOUR								
Enter	0	1	1	**2**	0	1	1	**2**
Exit	95	1	1	**97**	238	1	1	**240**
Total	**95**	**2**	**2**	**99**	**238**	**2**	**2**	**242**
WEEKDAY DAILY								
Enter	105	10	10	**125**	263	10	10	**283**
Exit	105	10	10	**125**	263	10	10	**283**
Total	**210**	**20**	**20**	**250**	**526**	**20**	**20**	**566**

1) Assumed a 150 MWac facility with 16 months of construction and 3 to 4 months of ramp up/ramp down activity. Peak construction activity assumed to occur over an 8- to 10-month period.

2) Assumed 100 workers during the non-peak construction workforce phases. Construction workforce commuting trips account for a reduction due to carpooling which is assumed to be 10 percent of the workforce population with a vehicle occupancy of 2 persons/vehicle. See attachments for detailed calculations.

3) Assumed 250 workers during the peak construction workforce phases. Construction workforce commuting trips account for a reduction due to carpooling which is assumed to be 10 percent of the workforce population with a vehicle occupancy of 2 persons/vehicle. See attachments for detailed calculations.

Project Trip Distribution Patterns

The Project trip distribution patterns for the peak construction workforce commuting trips were developed based on consideration of the effective populations in the surrounding communities. For the purposes of this study, it was assumed that the construction workforce would be drawn from communities within an approximate 1.5-hour commute. Populations for each community within the expected workforce draw area were obtained from the United States (U.S.) Census 2021 American Community Survey. Logical travel routes were then assigned between each U.S. Census tract and the project site based on existing travel patterns during peak commuting periods. The gravity model then applied a weighting factor to each population based on the relative travel times, with populations located within a one-half commute being fully weighted, and effective populations for communities further from the site being reduced to account to reflect the decreased worker attraction associated with longer commute times. The trip distribution calculations are provided in the Attachments. The resulting Project construction workforce trip distribution patterns for both the non-peak and peak construction phases are shown in Figure 2. The heavy vehicle deliveries associated with the Project's construction activities are anticipated to access the site to/from the east via the U.S. Route 97/State Route (SR) 142 intersection.

The majority of the construction worker commuter trips, and all of the heavy vehicle delivery trips are anticipated to access the site via Knight Road. Use of Hill Road, Pine Forest, or Fairgrounds Road by construction vehicles is anticipated to be minimal and, therefore, it is not anticipated that pavement analyses (geotechnical studies) for those roads would be necessary. This assumption will be confirmed as part of the TIA preparation.

Potential Site Access and Off-Site Traffic Mitigation

Based on the vehicle trip generation and distribution estimates summarized above, Tetra Tech has identified potential traffic mitigation measures that may be required to support the Project. A more detailed review of traffic mitigation, including preparation of conceptual level design plans, would be conducted as part of the detailed TIA to be completed prior to construction. The following provides a brief summary of the potential traffic mitigation items:

- **U.S. Route 97/SR 142** – The Project's peak construction activities are estimated to generate approximately 242 vehicle trips during the morning and evening peak hours. The majority (88 percent of construction worker commuting trips and 100 percent of construction truck trips) are expected to use this intersection to access the site. To support the increased traffic volumes and enhance safety at this unsignalized intersection, modifications may include temporary geometric improvements (i.e., additional turn lanes), and/or installation of a temporary traffic signal to enhance traffic operations and safety during the construction phase of the Project.
- **SR 142/Knight Road** – Tetra Tech has conducted a preliminary truck turning analysis using AutoTurn software for a semi tractor trailer (WB-67 size) for trucks turning right onto Knight Road and left from Knight Road since the Project's large trucks are anticipated to arrive and depart the site to/from the east on SR 142. The truck turning analyses are shown in Figures 2 and 3. The red lines in the graphics show the trucks travel path which indicate that a WB-67 can generally be accommodated with only minor encroachment into the opposing travel lanes. The Project's peak construction activities are estimated to generate approximately 209 construction worker commuting trips and two truck trips making a right turn from SR 142 onto Knight Road during the morning peak hour. Improvements at this location to enhance intersection operations may include temporary roadway widening to provide an exclusive westbound right-turn lane on SR 142.
- **SR 142/Proposed Site Access Driveway** – The proposed driveway design will need to conform to WSDOT standards including a driveway width and radii that can accommodate the largest vehicle anticipated to enter and exit the site at this location. It is expected that only a portion of the Project's construction workforce will use this driveway and, therefore, improvements to SR 142 at this location are not currently anticipated. The detailed TIA to be prepared for the Project will estimate the Project construction trips that will enter and exit the site at this location to determine if temporary roadway widening to include an exclusive westbound right-turn lane on SR 142 is warranted.

- **Truck Haul Route Agreement** – A formal road haul route agreement with financial securities will be required by the County prior to construction. The detailed TIA to be prepared for the Project will include a truck haul route evaluation. Additionally, the TIA will include a more detailed breakdown of vehicle trip generation by type to serve as the basis for the pavement analysis to be conducted for Knight Road as part of the Knight Road Geotechnical Report. The majority of construction vehicle trips are anticipated to enter/exit the site via Knight Road. The TIA will identify what, if any, additional County roads are impacted by the Project construction and identify if any additional County roadway segments will require geotechnical analyses.
- **Construction Traffic Management Plan (CTMP)** – CCR commits to preparing a CTMP for the construction phase of the Project. Elements of the CTMP may include the hours of construction operations, dedicated travel routes for construction workers and construction trucks and installation of temporary warning signage including advisory speed limits.
- **Transportation Demand Management (TDM)** – There are currently no public transportation services in the vicinity of the proposed laydown areas. However, CCR commits to encouraging carpooling among the Project's construction workforce to reduce single occupancy vehicle trips to and from the site. Additionally, the Applicant will explore the feasibility of other potential transportation demand management (TDM) measures as part of the detailed TIA to be prepared prior to construction.

Additional Traffic-Related Studies to be Completed

The CCR commits to conducting the following traffic-related studies in accordance with Klickitat County and WSDOT guidelines prior to obtaining the necessary construction permits for the Project. These additional assessments will provide a comprehensive evaluation of the Project's construction-related impacts and will inform the specific traffic mitigation program to be developed to accommodate the Project's construction activities and facilitate the preparation of a formal Road Haul Agreement with Klickitat County.

- Traffic Scoping Letter (TSL)
- Traffic Impact Analysis (TIA) in accordance with WSDOT and Klickitat County guidelines
- Design of Site Access and Off-Site Traffic Improvements (to be determined based on results of the TIA)
- Draft Safety Management Plan (including a Traffic Control Plan) for Construction
- Knight Road Geotechnical Study
- Project Access Permit Applications (i.e., Road Approach, Overweight-Overwidth, Work within Right of Way, etc.)

We appreciate EFSEC's review of the supplemental analyses and information provided in this letter. Please do not hesitate to contact Robert Woodland with any questions or concerns at (781) 910-5015 or Kristen Daniel at (509) 372-5819.

Sincerely,

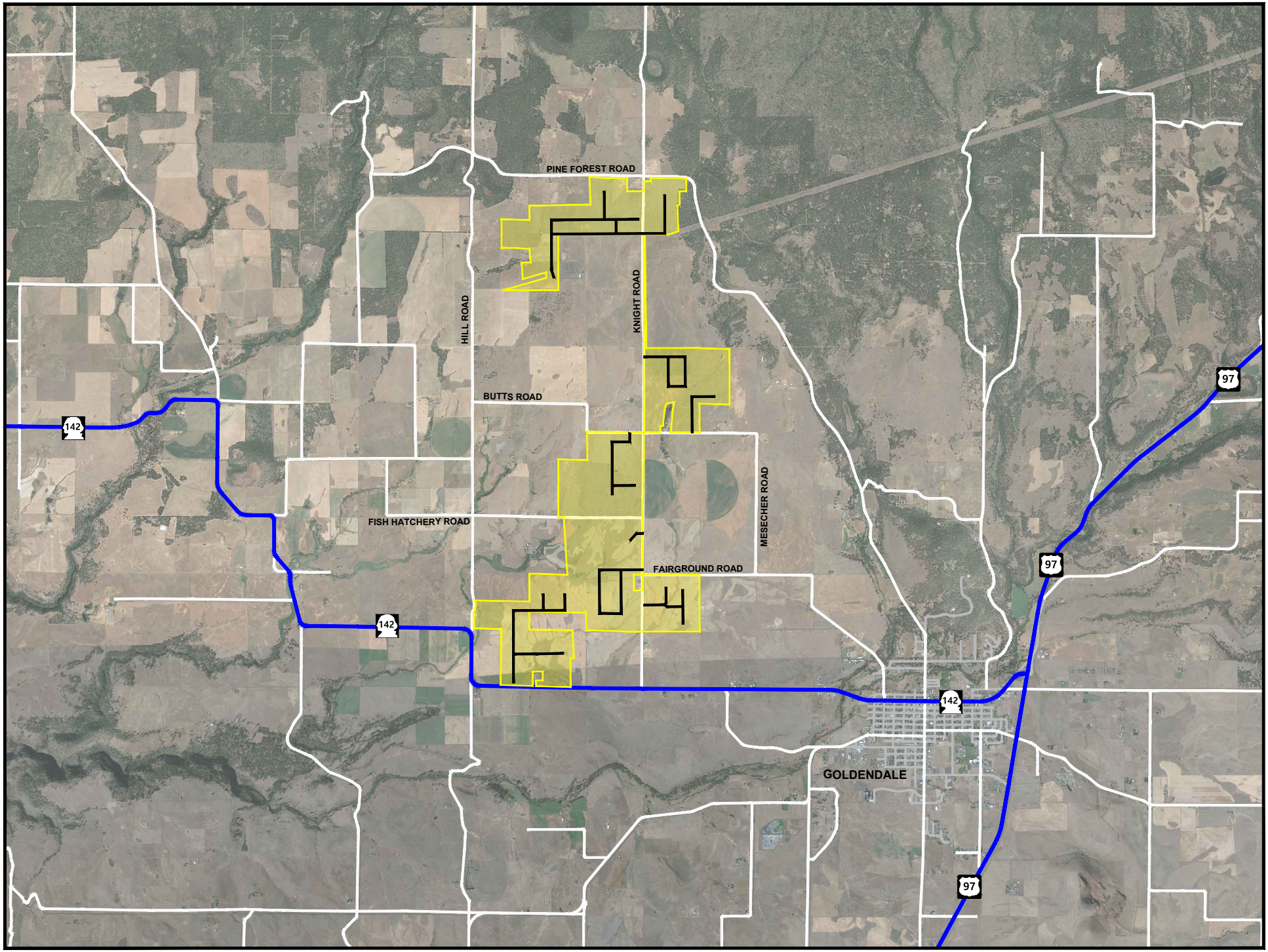
Kristen Daniel, PE
Principal Civil Engineer

Robert Woodland, PE
Senior Project Manager

cc (by email): Sean Greene – EFSEC
Dylan Bass – WSDOT
Jeff Hunter – Klickitat County Public Works Department
Lauren Altick, Cypress Creek Renewables
John Hanks, Cypress Creek Renewables
Justin Kreuger, Cypress Creek Renewables

Attachments: Figures 1 – 4, Trip Generation Calculations, Trip Distribution Calculations

FIGURES



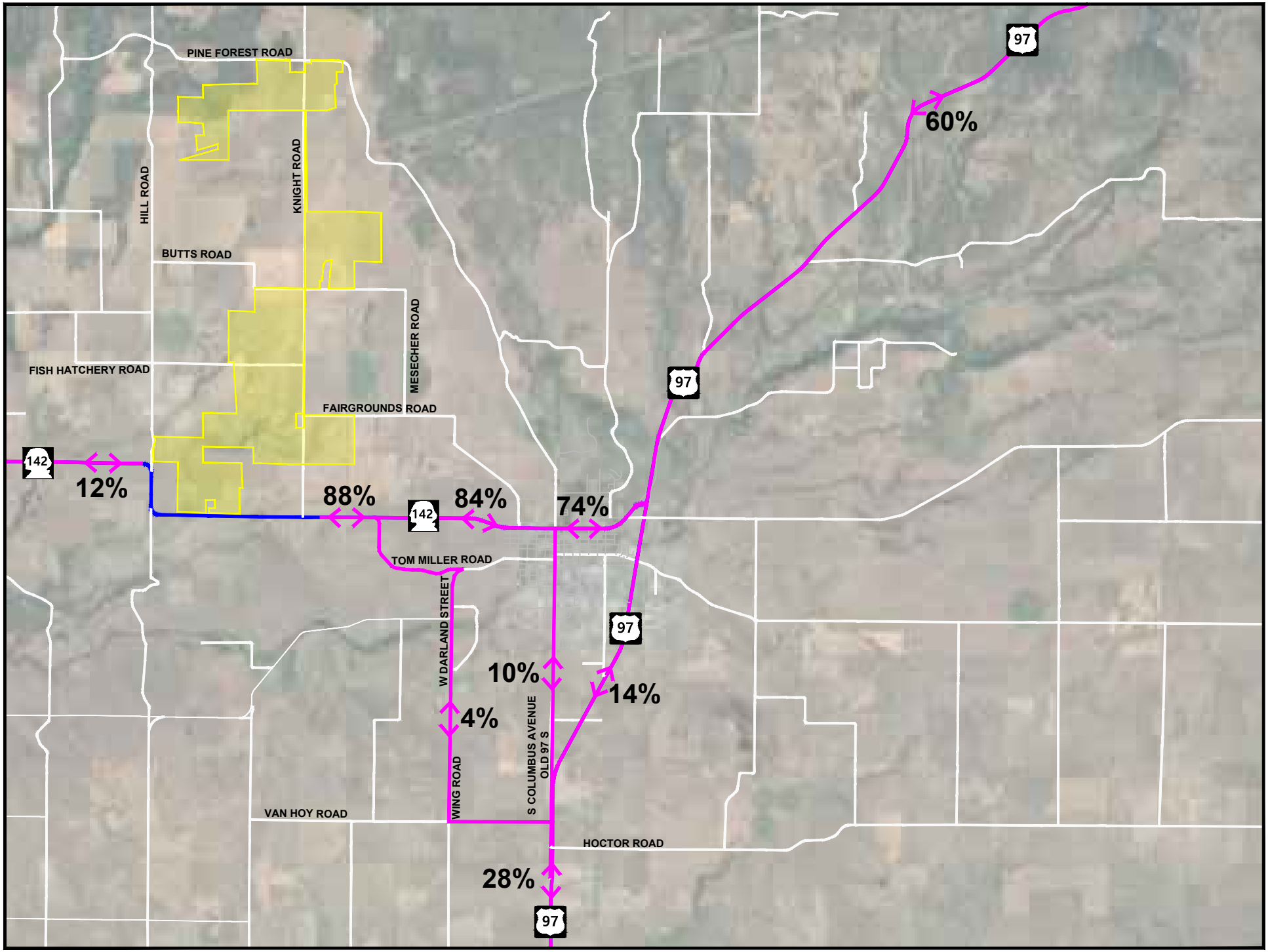
TETRA TECH

LOCAL ROADWAYS
COUNTY ROADWAYS
STATE ROADWAYS
PROJECT BOUNDARY
PROJECT DRIVEWAYS

Carriger Solar
Klickitat County, WA

SITE LOCUS

FIGURE
1



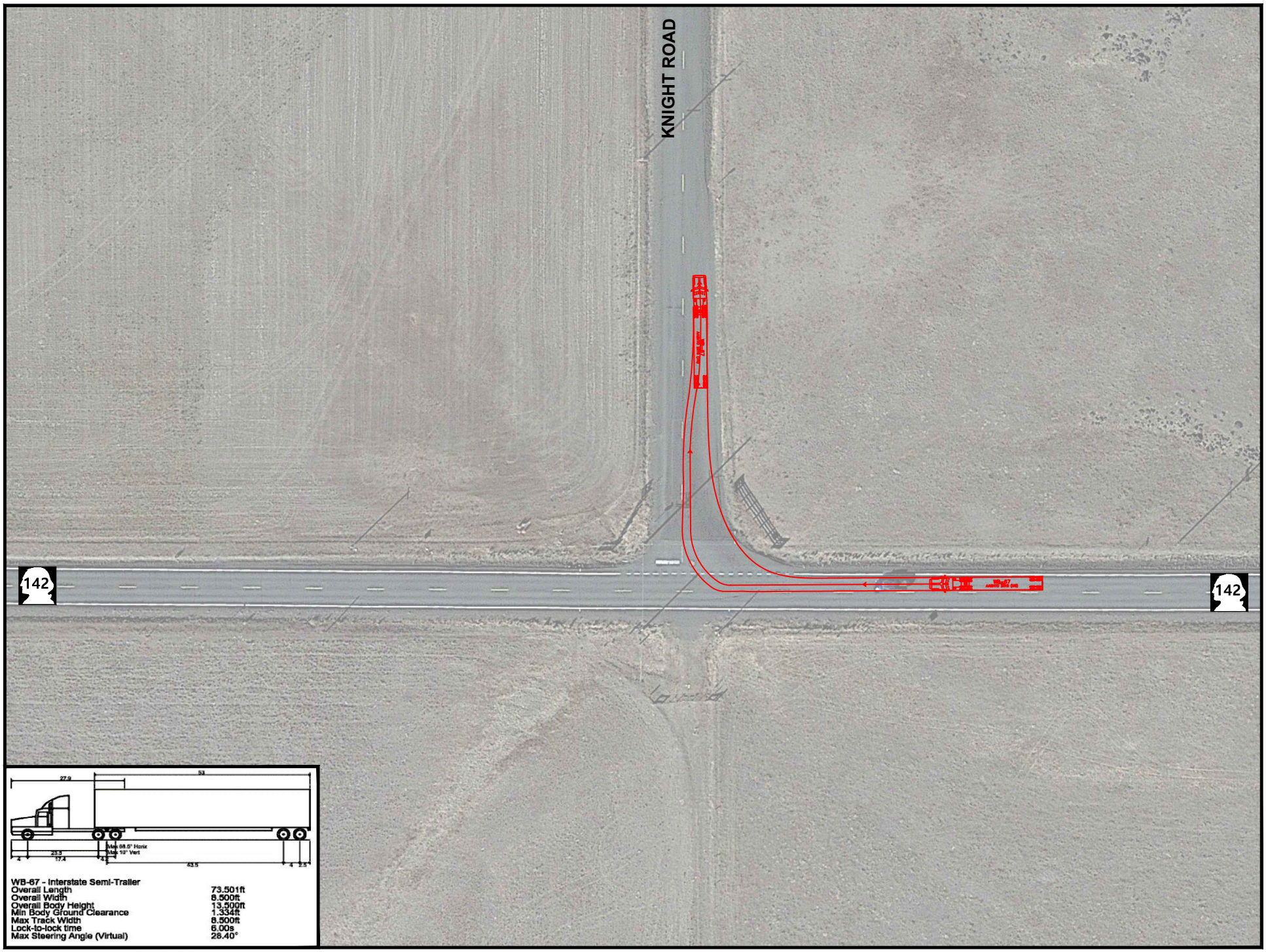
TETRA TECH

LOCAL ROADWAYS
COUNTY ROADWAYS
STATE ROADWAYS
PROJECT BOUNDARY
TRUCK ROUTES

Carriger Solar
Klickitat County, WA

FIGURE
2

CONSTRUCTION WORKFORCE TRIP DISTRIBUTION PATTERNS



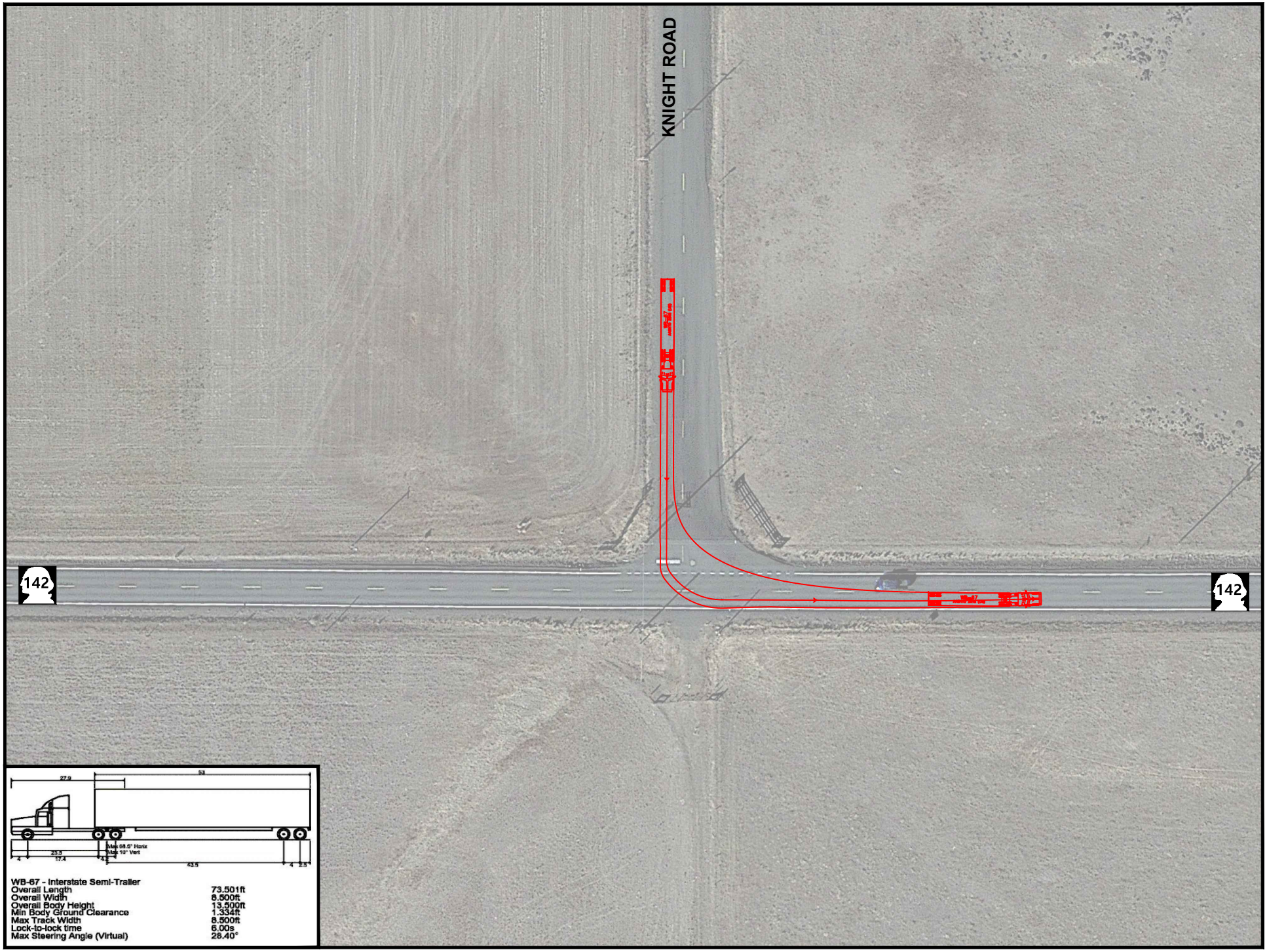
WB-67 - Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

TETRA TECH

Carriger Solar
Klickitat County, WA

HEAVY VEHICLE DELIVERIES ENTERING KNIGHT ROAD

FIGURE
3



WB-67 - Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

TETRA TECH

Carriger Solar
Klickitat County, WA

FIGURE
4

HEAVY VEHICLE DELIVERIES EXITING KNIGHT ROAD

TRIP GENERATION CALCULATIONS

Non-Peak Construction Workforce Trip Generation Calculations and Assumptions

Proposed Carriger Solar Facility - Klickitat County, WA

Construction Site Driveway Trips					
	Workforce Trips	Mid-Size Vehicle Deliveries	Semi Tractor Trailer Deliveries	Total	CALCULATIONS
AM Peak Hour:					
Enter	95	1	1	97	(100 workers x 100% arrive x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles arrive) = 97
Exit	0	1	1	2	(100 workers x 0% depart) + (2 Delivery Vehicles depart) = 2
Total	95	2	2	99	
PM Peak Hour:					
Enter	0	1	1	2	(100 workers x 0% arrive) + (2 Delivery Vehicles arrive) = 2
Exit	95	1	1	97	(100 workers x 100% depart x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles depart) = 97
Total	95	2	2	99	
Weekday Daily:					
Enter	105	10	10	125	(100 workers x 100% arrive in AM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (100 workers x 10% return from lunch/errands midday) + (20 Delivery Vehicles arrive) = 125
Exit	105	10	10	125	(100 workers x 100% depart in PM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (100 workers x 10% leave for lunch/errands midday) + (20 Delivery Vehicles depart) = 125
Total	210	20	20	250	

Construction Assumption	AM Peak Hour	PM Peak Hour	Off-Peak Hours	Notes
# of Peak Workers On-Site at One Time:	100	100	100	Assume 100 workers
% Workers Arriving:	100%	0%	10%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Workers Departing:	0%	100%	10%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Carpool[1]:	10.0%	10.0%	0.0%	Assumed 10% carpooling during commuting
Carpool VOR[2]:	2.00	2.00	1.00	Assumed two workers per car during commuting
# Shuttle Trips:	0	0	0	Assumed all workers and deliveries will occur via the construction driveway; no laydown site is proposed
# Semi Truck Deliveries:	1	1	8	Assumed worker hours of operation 7am-5pm and assumed 10 deliveries per day and distributed evenly throughout the day.
# Mid-Size Truck Deliveries:	1	1	8	Assumed worker hours of operation 7am-5pm and assumed 10 deliveries per day and distributed evenly throughout the day.

[1]Enter % per population - formulas above account for VOR

[2]VOR for carpoolers only

NOTE: Assumed a 150 MW AC facility with 16 months of construction and 3 to 4 months of ramp-up/ramp-down construction activity. Peak construction activity assumed to occur over an 8 to 10 month period.

Source: Tetra Tech

Peak Construction Workforce Trip Generation Calculations and Assumptions

Proposed Carriger Solar Facility - Klickitat County, WA

Construction Site Driveway Trips					
	Workforce Trips	Mid-Size Vehicle Deliveries	Semi Tractor Trailer Deliveries	Total	CALCULATIONS
AM Peak Hour:					
Enter	238	1	1	240	(250 workers x 100% arrive x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles arrive) = 240
Exit	0	1	1	2	(250 workers x 0% depart) + (2 Delivery Vehicles depart) = 2
Total	238	2	2	242	
PM Peak Hour:					
Enter	0	1	1	2	(250 workers x 0% arrive) + (2 Delivery Vehicles arrive) = 2
Exit	238	1	1	240	(250 workers x 100% depart x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles depart) = 240
Total	238	2	2	242	
Weekday Daily:					
Enter	263	10	10	283	(250 workers x 100% arrive in AM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (250 workers x 10% return from lunch/errands midday) + (20 Delivery Vehicles arrive) = 283
Exit	263	10	10	283	(250 workers x 100% depart in PM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (250 workers x 10% leave for lunch/errands midday) + (20 Delivery Vehicles depart) = 283
Total	526	20	20	566	

Construction Assumption	AM Peak Hour	PM Peak Hour	Off-Peak Hours	Notes
# of Peak Workers On-Site at One Time:	250	250	250	Assume 250 workers
% Workers Arriving:	100%	0%	10%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Workers Departing:	0%	100%	10%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Carpool[1]:	10.0%	10.0%	0.0%	Assumed 10% carpooling during commuting
Carpool VOR[2]:	2.00	2.00	1.00	Assumed two workers per car during commuting
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# Mid-Size Truck Deliveries:	1	1	8	Assumed worker hours of operation 7am-5pm and assumed 10 deliveries per day and distributed evenly throughout the day.

[1]Enter % per population - formulas above account for VOR

[2]VOR for carpoolers only

NOTE: Assumed a 150 MW AC facility with 16 months of construction and 3 to 4 months of ramp-up/ramp-down construction activity. Peak construction activity assumed to occur over an 8 to 10 month period.

Source: Tetra Tech

TRIP DISTRIBUTION CALCULATIONS

Carriger Solar Project
Worker Population Gravity Model

								LOCAL TRAVEL ROUTES																	
								To/From West						To/From North	To/From East				To/From South					
County	Census Tract	State	Total Population	Estimated Drive Time to Site	% Population in Drive Time Zone	Effective Population in Drive Time Zone	% of Total Population	14 to 142	14 to 97 to old 97	14 to 97	84 to 14 to 142	84 to 14 to 97	84 to 14 to 97 to old 97	97	14 to 97	14 to 97 to old 97	84 to 14 to 97	84 to 14 to 97 to old 97	97	97 to old 97	197 to 84	197 to 84 to old 97	100% CHECK	Total
Benton County	116	WA	835	1:15	61.0%	509	0.277%								50%	50%							100%	0.3%
Benton County	117.01	WA	3,012	1:25	41.6%	1254	0.682%							100%									100%	0.7%
Benton County	117.02	WA	5,132	1:25	41.6%	2136	1.162%							100%									100%	1.2%
Benton County	118.01	WA	3,655	1:30	26.3%	960	0.522%							100%									100%	0.5%
Benton County	118.02	WA	2,665	1:25	41.6%	1109	0.604%							100%									100%	0.6%
Benton County	119	WA	6,325	1:30	26.3%	1661	0.904%							100%									100%	0.9%
Benton County	120	WA	21	1:30	26.3%	6	0.003%							100%									100%	0.0%
Morrow County	9701.01	OR	5,034	1:15	61.0%	3070	1.670%										50%	50%					100%	1.7%
Morrow County	9701.02	OR	3,676	1:20	52.5%	1931	1.051%										50%	50%					100%	1.1%
Morrow County	9702	OR	3,165	1:30	26.3%	831	0.452%										50%	50%					100%	0.5%
Clackamas County	243.04	OR	2,251	1:30	26.3%	591	0.322%				50%	25%	25%										100%	0.3%
Hood River County	9501	OR	4,449	1:25	41.6%	1852	1.008%				50%	25%	25%										100%	1.0%
Hood River County	9502.01	OR	3,862	1:15	61.0%	2355	1.281%				50%	25%	25%										100%	1.3%
Hood River County	9502.02	OR	3,825	1:15	61.0%	2333	1.269%				50%	25%	25%										100%	1.3%
Hood River County	9503.01	OR	3,597	1:05	73.7%	2652	1.443%				50%	25%	25%										100%	1.4%
Hood River County	9503.02	OR	2,725	1:15	61.0%	1662	0.904%				50%	25%	25%										100%	0.9%
Hood River County	9504	OR	5,519	1:10	67.9%	3747	2.039%				50%	25%	25%										100%	2.0%
Multnomah County	105	OR	3,947	1:30	26.3%	1037	0.564%				50%	25%	25%										100%	0.6%
Skamania County	9501	WA	104	1:20	52.5%	55	0.030%	50%	25%	25%													100%	0.0%
Skamania County	9502	WA	5,048	40 Mins	94.2%	4753	2.586%	50%	25%	25%													100%	2.6%
Skamania County	9503	WA	2,015	35 Mins	97.2%	1958	1.066%	50%	25%	25%													100%	1.1%
Skamania County	9504	WA	2,279	30 Mins	100.0%	2279	1.240%	50%	25%	25%													100%	1.2%
Skamania County	9505	WA	2,590	35 Mins	97.2%	2517	1.370%	50%	25%	25%													100%	1.4%
Gilliam County	9601	OR	1,995	1:20	52.5%	1048	0.570%												50%	50%			100%	0.6%
Klickitat County	9501.01	WA	1,538	35 Mins	97.2%	1495	0.813%								25%	25%	25%	25%					100%	0.8%
Klickitat County	9501.02	WA	3,507	20 Mins or less	100.0%	3507	1.908%							100%									100%	1.9%
Klickitat County	9501.03	WA	4,189	20 Mins or less	100.0%	4189	2.279%								25%	25%	25%	25%					100%	2.3%
Klickitat County	9502	WA	4,383	40 Mins	94.2%	4127	2.245%												25%	25%	25%	25%	100%	2.2%
Klickitat County	9503.01	WA	3,465	1:00	78.8%	2730	1.485%												25%	25%	25%	25%	100%	1.5%
Klickitat County	9503.02	WA	5,396	1:10	67.9%	3664	1.993%												25%	25%	25%	25%	100%	2.0%
Sherman County	9501	OR	1,870	55 Mins	83.3%	1557	0.847%												50%	50%			100%	0.8%
Wasco County	9701	OR	4,234	45 Mins	90.9%	3847	2.093%				50%	25%	25%										100%	2.1%
Wasco County	9702	OR	3,099	50 Mins	87.3%	2704	1.471%				50%	25%	25%										100%	1.5%
Wasco County	9703	OR	2,932	50 Mins	87.3%	2558	1.392%				50%	25%	25%										100%	1.4%
Wasco County	9704	OR	3,130	50 Mins	87.3%	2731	1.486%				50%	25%	25%										100%	1.5%
Wasco County	9705	OR	3,813	55 Mins	83.3%	3175	1.727%				50%	25%	25%										100%	1.7%
Wasco County	9706	OR	3,007	1:00	78.8%	2369	1.289%				50%	25%	25%										100%	1.3%
Wasco County	9707	OR	1,913	1:10	67.9%	1299	0.707%				50%	25%	25%										100%	0.7%
Wasco County	9708	OR	4,542	1:30	26.3%	1193	0.649%												25%	25%	25%	25%	100%	0.6%

Data Source: Tetra Tech; American Community Survey 2021 1-Year Population Esitimates

Carriger Solar Project
Worker Population Gravity Model

								LOCAL TRAVEL ROUTES														
								To/From West						To/From North	To/From East				To/From South			
County	Census Tract	State	Total Population	Estimated Drive Time to Site	% Population in Drive Time Zone	Effective Population in Drive Time Zone	% of Total Population	14 to 142	14 to 97 to old 97	14 to 97	84 to 14 to 142	84 to 14 to 97	84 to 14 to 97 to old 97	97	14 to 97	14 to 97 to old 97	84 to 14 to 97	84 to 14 to 97 to old 97	97	97 to old 97	197 to 84	197 to 84 to old 97	100% CHECK	Total
Yakima County	1	WA	3,072	1:15	61.0%	1873	1.019%							100%								100%	1.0%
Yakima County	2	WA	5,595	1:25	41.6%	2329	1.267%							100%								100%	1.3%
Yakima County	3.01	WA	2,473	1:30	26.3%	650	0.353%							100%								100%	0.4%
Yakima County	3.02	WA	2,283	1:30	26.3%	600	0.326%							100%								100%	0.3%
Yakima County	4.01	WA	5,958	1:30	26.3%	1565	0.851%							100%								100%	0.9%
Yakima County	5	WA	4,599	1:30	26.3%	1208	0.657%							100%								100%	0.7%
Yakima County	6	WA	5,696	1:25	41.6%	2371	1.290%							100%								100%	1.3%
Yakima County	7	WA	7,077	1:25	41.6%	2946	1.603%							100%								100%	1.6%
Yakima County	8	WA	4,484	1:30	26.3%	1178	0.641%							100%								100%	0.6%
Yakima County	9.02	WA	4,507	1:30	26.3%	1184	0.644%							100%								100%	0.6%
Yakima County	10	WA	6,499	1:30	26.3%	1707	0.929%							100%								100%	0.9%
Yakima County	11	WA	7,361	1:30	26.3%	1933	1.052%							100%								100%	1.1%
Yakima County	12.01	WA	4,723	1:25	41.6%	1966	1.070%							100%								100%	1.1%
Yakima County	12.02	WA	7,051	1:25	41.6%	2935	1.597%							100%								100%	1.6%
Yakima County	13	WA	2,653	1:20	52.5%	1394	0.758%							100%								100%	0.8%
Yakima County	14	WA	4,099	1:20	52.5%	2153	1.172%							100%								100%	1.2%
Yakima County	15.02	WA	2,658	1:20	52.5%	1396	0.760%							100%								100%	0.8%
Yakima County	15.03	WA	4,558	1:20	52.5%	2394	1.303%							100%								100%	1.3%
Yakima County	15.04	WA	2,894	1:25	41.6%	1205	0.655%							100%								100%	0.7%
Yakima County	16.01	WA	2,537	1:30	26.3%	666	0.363%							100%								100%	0.4%
Yakima County	16.02	WA	8,633	1:25	41.6%	3594	1.955%							100%								100%	2.0%
Yakima County	17.02	WA	6,565	1:30	26.3%	1724	0.938%							100%								100%	0.9%
Yakima County	18.01	WA	4,419	1:30	26.3%	1161	0.631%							100%								100%	0.6%
Yakima County	18.02	WA	2,933	1:25	41.6%	1221	0.664%							100%								100%	0.7%
Yakima County	19.01	WA	3,680	1:20	52.5%	1933	1.052%							100%								100%	1.1%
Yakima County	19.02	WA	6,678	1:20	52.5%	3508	1.909%							100%								100%	1.9%
Yakima County	20.03	WA	5,057	1:20	52.5%	2656	1.445%							100%								100%	1.4%
Yakima County	20.04	WA	4,734	1:25	41.6%	1971	1.072%							100%								100%	1.1%
Yakima County	20.05	WA	2,544	1:20	52.5%	1336	0.727%							100%								100%	0.7%
Yakima County	20.06	WA	6,934	1:15	61.0%	4229	2.301%							100%								100%	2.3%
Yakima County	21.01	WA	2,468	1:25	41.6%	1027	0.559%							100%								100%	0.6%
Yakima County	21.03	WA	2,709	1:15	61.0%	1652	0.899%							100%								100%	0.9%
Yakima County	21.04	WA	5,099	1:10	67.9%	3462	1.884%							100%								100%	1.9%
Yakima County	22.01	WA	5,153	1:10	67.9%	3499	1.903%							100%								100%	1.9%
Yakima County	22.02	WA	2,017	1:15	61.0%	1230	0.669%							100%								100%	0.7%
Yakima County	27.01	WA	3,466	1:10	67.9%	2353	1.280%							100%								100%	1.3%
Yakima County	28.03	WA	5,809	1:30	26.3%	1526	0.830%							100%								100%	0.8%
Yakima County	29	WA	7,131	1:30	26.3%	1873	1.019%							100%								100%	1.0%
Yakima County	30.02	WA	4,085	1:30	26.3%	1073	0.584%							100%								100%	0.6%
Yakima County	31	WA	5,297	1:30	26.3%	1391	0.757%							100%								100%	0.8%
Yakima County	32	WA	7,012	1:25	41.6%	2919	1.588%							100%								100%	1.6%
Yakima County	34	WA	5,228	1:30	26.3%	1373	0.747%							100%								100%	0.7%
Yakima County	9400.01	WA	6,534	55 Mins	83.3%	5440	2.960%							100%								100%	3.0%
Yakima County	9400.02	WA	4,762	1:10	67.9%	3233	1.759%							100%								100%	1.8%
Yakima County	9400.03	WA	3,292	1:30	26.3%	865	0.470%							100%								100%	0.5%
Yakima County	9400.05	WA	4,776	1:05	73.7%	3522	1.916%							100%								100%	1.9%
Yakima County	9400.06	WA	4,758	1:05	73.7%	3508	1.909%							100%								100%	1.9%
Yakima County	9400.07	WA	3,449	1:15	61.0%	2103	1.144%							100%								100%	1.1%
Yakima County	9400.08	WA	2,149	1:15	61.0%	1311	0.713%							100%								100%	0.7%
		Total	**356,892**			**183,798**	**100.00%**	**3.15%**	**1.57%**	**1.57%**	**9.50%**	**4.75%**	**4.75%**	**60.38%**	**0.91%**	**0.91%**	**2.36%**	**2.36%**	**2.30%**	**2.30%**	**1.59%**	**1.59%**	100%	**100.00%**
							Use	**3%**	**2%**	**2%**	**9%**	**5%**	**5%**	**60%**	**1%**	**1%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	100%	

Data Source: Tetra Tech; American Community Survey 2021 1-Year Population Esitimates

LOGARITHMIC GRAVITY ASSUMPTIONS	
Travel time to Site (approx.)	Adjustment Factor (0-100%)
20 Mins or less	100.00%
25 Mins	100.00%
30 Mins	100.00%
35 Mins	97.19%
40 Mins	94.16%
45 Mins	90.86%
50 Mins	87.25%
55 Mins	83.26%
1:00	78.79%
1:05	73.74%
1:10	67.89%
1:15	60.99%
1:20	52.53%
1:25	41.63%
1:30	26.26%
greater than 1:30	0.00%