Memorandum

To: Mary Laux
   Principal Planner
   ESA | Environmental Science Associates
   (415) 262-2311

From: Mario Tambellini, PE, TE
      Nicole Scappaticci, PE

Date: April 19, 2021

Subject: Draft Wildhaven Yosemite Traffic Impact Analysis Memorandum

INTRODUCTION

This memorandum has been prepared to present the results of a Traffic Impact Analysis (TIA) performed for the Wildhaven Yosemite Project (Project). This memorandum includes a Project trip generation estimate, qualitative analysis of Project Vehicle Miles Traveled (VMT), stopping sight distance and corner sight distance analysis at the Project Access Roadway, and a qualitative review of the Project site access and on-site circulation.

PROJECT DESCRIPTION

The 36-acre Project site is located at 4808 State Route 140 (SR 140) within the census designated place (CDP) of Mariposa, in Mariposa County (County), California. The Project proposes to construct a total of 80 basic wood tent platforms that would support 80 “glamping” style tents. The Project would also construct an event tent, bathhouse, and clubhouse. The Project site is located approximately 45 miles from the entrance to Yosemite National Park and is currently used for the Yosemite Ziplines and Adventure Ranch, which provides tourist-serving recreational activities. The existing Yosemite Ziplines and Adventure Ranch would initially be closed with development of the Project, but may be opened for glamping guests only at some point in the future. The Project plans to be operational year-round. The parcel is located within the Resort Commercial Zone and within the Rural Economic-Recreation sub classification.

The Project envisions development of the following facilities in up to two phases:

Phase 1:

- Up to 100 guests (assuming 2.5 average guests per tent).
- 40 basic wood tent platforms, ranging in size from 10-foot by 20-foot to 12-foot by 24-foot.
- Pitch and furnish 40 canvas tents on top of the tent platforms.
- A 20-foot by 40-foot event tent to house initial reception and clubhouse operations. Guests will check in here and limited retail sales will be offered.
- Design and build a 20-foot by 60-foot rustic post and beam structure for a bathhouse, supporting Phase 1 and Phase 2 for up to 250 people, with a total of up to 20 shower stalls and 16 toilets.
- Septic system to support the bathhouse.

Phase 2:

- Add an additional 40 tents for a total of 80 tents to hold up to 200 guests (assuming 2.5 average guests per tent).
• Design and build a larger, more permanent clubhouse, estimate to be 40-foot by 80-foot. Retail sales and food and beverage service will be offered.

• Build a 10-foot by 10-foot reception kiosk for guest check-in.

Primary access to the Project site would be provided via an existing access roadway (Project Access Roadway) intersection with SR 140.

The proposed Project would employ up to five (5) full time staff and five (5) part time staff, all hired locally. One (1) general manager would live in the on-site house and three (3) maintenance staff would live in RVs on site. The other six (6) would be front desk staff and housekeepers. The Project vicinity map and site plan are included in Attachment A.

PROJECT TRIP GENERATION AND DISTRIBUTION

TRIP RATES

A Project trip generation was prepared for the proposed Project ‘buildout’ of 80 tents. The Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, an industry standard source of trip generation rates, does not provide trip generation rates that adequately capture the trip generation characteristics of the Project site’s unique “glamping” use. As such, this analysis utilizes rates adapted from the Trip Generation for Under Canvas Memorandum (ESA, September 24, 2019), which is included as Attachment A of the Trip Generation for Yosemite Under Canvas EIR Memorandum (ESA, October 4, 2019).

The Trip Generation for Under Canvas memorandum developed trip generation characteristics for peak summer weekend (Friday, Saturday, and Sunday) conditions at an existing glamping facility with attributes similar to the proposed Wildhaven Yosemite Project. The results of the custom trip generation rate study are shown in Table 1.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Unit</th>
<th>Daily Rate¹</th>
<th>Peak Hour of Generator Rate¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>In</td>
</tr>
<tr>
<td>Weighted Average Weekend Summer Peak</td>
<td>Occupied</td>
<td>2.6</td>
<td>0.13</td>
</tr>
<tr>
<td>Tents</td>
<td>Tents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Based on data from the Trip Generation for Yosemite Under Canvas EIR Memorandum (ESA, October 4, 2019).

As shown in Table 1, during the weekend summer peak, each occupied tent would generate approximately 2.6 daily vehicle trips and 0.45 trips during the peak hour of the site.

PROJECT OCCUPANCY

Average occupancy estimates for the Project tents during weekday and weekend summer peak conditions and weekday and weekend off-peak conditions were obtained from the Project applicant. Annual average occupancies were then calculated for both weekday and weekend conditions, based on the provided occupancy data, which were then used to find an overall annual average occupancy for the Project. Average occupancy estimates for the Project are shown in Table 2.
### Table 2. Estimated Project Occupancy

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Occupancy¹</th>
<th>Duration (days)²</th>
<th>Annual Average Occupancy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Peak</td>
<td>0.7</td>
<td>88</td>
<td>0.41</td>
</tr>
<tr>
<td>Off-Peak</td>
<td>0.2</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Weekend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Peak</td>
<td>0.8</td>
<td>65</td>
<td>0.57</td>
</tr>
<tr>
<td>Off-Peak</td>
<td>0.4</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Annual Average</td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
</tbody>
</table>

Notes:
1. Based on data provided by the applicant.
2. Project summer peak is May-September and off-peak is October-April.

As shown in **Table 2**, the annual average weekday Project occupancy is estimated to be 41%, annual average weekend Project occupancy is estimated to be 57%, and overall annual average Project occupancy is estimated to be 48%.

**Trip Generation**

Project trip generation for the following conditions are presented in this memorandum:

- **“Worst-Case” Saturday Summer Peak Full-Occupancy Condition**: This condition is analyzed to determine if the Project adds 50 or more peak hour trips to a State highway facility under worst-case conditions. The *Caltrans Guide for the Preparation of Traffic Impact Studies (Caltrans TIS Guidelines)* (December 2002) indicates that if 50 peak hour trips or more are added to a State highway facility, a traffic impact study may be required.

- **Annual Average Condition**: This condition is analyzed to evaluate Project VMT impact, as discussed later in this memorandum.

Project trips for the above conditions were estimated by applying the trip generation rates in **Table 1** to the number of occupied tents assumed in each condition. Existing site trips generated by the Yosemite Ziplines and Adventure Ranch were estimated based on existing site operations and visitor statistic information obtained from the business owner. Existing site trips were subtracted from the proposed Project’s trip generation.

**Table 3** shows the Project trip generation for a “worst-case” Saturday summer peak full-occupancy condition.
Table 3. Project Trip Generation - Saturday Summer Peak Full-Occupancy

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Occupancy</th>
<th>Occupied Tents</th>
<th>Daily Trips</th>
<th>Peak Hour of Generator Trips¹</th>
<th>In</th>
<th>Out</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday Summer Peak - Full Occupancy</td>
<td>100%</td>
<td>80</td>
<td>208</td>
<td></td>
<td>10</td>
<td>26</td>
<td>36</td>
</tr>
<tr>
<td>Existing Site Trips²</td>
<td>-15</td>
<td>-3</td>
<td>-3</td>
<td>-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total New Trips</td>
<td>193</td>
<td>7</td>
<td>23</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Based on trip generation rates in Table 1.
2. Daily summer peak existing trips based on 4,000 annual guests, with 70% of business occurring during the summer peak (May-September), assuming a 2.5 vehicle occupancy and 6 employees during summer peak.

As shown in Table 3, the Project is estimated to generate 30 new trips during the peak hour under “worst-case” Saturday summer peak full-occupancy conditions.

Table 4 shows the Project trip generation under annual average conditions.

Table 4. Project Trip Generation – Annual Average Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Occupancy</th>
<th>Occupied Tents</th>
<th>Daily Trips</th>
<th>Peak Hour of Generator Trips¹</th>
<th>In</th>
<th>Out</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Average</td>
<td>48%</td>
<td>38</td>
<td>99</td>
<td></td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Existing Site Trips²</td>
<td>-9</td>
<td>-1</td>
<td>-1</td>
<td>-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total New Trips</td>
<td>90</td>
<td>4</td>
<td>11</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Based on trip generation rates in Table 1.
2. Daily annual average existing trips based on 4,000 annual guests, assuming a 2.5 vehicle occupancy, and an annual average of 3 employees.

As shown in Table 4, the Project is estimated to generate 90 daily trips on an annualized average basis, with an annual average of 15 site peak hour trips (4 inbound and 11 outbound).

Weekday, Saturday, and Sunday summer peak and annual average Project trip generations are included in this memorandum as Attachment B for use in the Project air quality analysis.

**PROJECT TRIP DISTRIBUTION**

Based on the location of the Project site and surrounding attractions, the Project trips are estimated to observe the following distribution:

- 70% to/from SR 140 east of the Project Access Roadway. This direction leads to the town/CDP of Mariposa and the entrance to Yosemite National Park.
- 30% to/from SR 140 west of the Project Access Roadway. This direction leads to the City of Merced and State Route 99.

**LEVEL OF SERVICE (LOS) ANALYSIS**

The Caltrans TIS Guidelines state that if 50 peak hour trips or more are added to a State highway facility, a traffic impact study may be required. As the Project is estimated to generate fewer than 50 peak hour trips under “Worst-Case” Saturday Summer Peak Full-Occupancy Conditions, the Project is subject to the following criteria outlined in the Caltrans TIS Guidelines:
If one (1) to 49 peak hour trips are added to a State highway facility, a full traffic impact study may be required if any of the following conditions are met with the addition of Project trips:

a. Affected State highway facilities experience significant delay; unstable or forced traffic flow conditions (Level of Service (LOS) “E” or “F”).

b. The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).

c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).

SR 140 does not currently operate at LOS E or F conditions in the vicinity of the Project and is not anticipated to operate at LOS E or F with addition of Project trips. Additionally, as the Project trips would utilize the existing Project Access Roadway, the Project would not create additional risk for a traffic incident or change the local circulation network in a way that would impact a State highway facility. Therefore, preparation of a full traffic impact study, including analysis of LOS, is not required.

**VMT ANALYSIS**

Senate Bill 743 (SB 743), signed in 2013, required changes to California Environmental Quality Act (CEQA) guidelines on the measurement and identification of transportation impacts due to new projects in California. Revised CEQA Guidelines were adopted in 2018 which identified VMT as the most appropriate metric to evaluate transportation impacts. Statewide implementation of assessment of VMT as a metric of transportation impact occurred for all jurisdictions on July 1, 2020. The Governor’s Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory) (December 2018), contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. As the County has not currently adopted guidelines for the analysis of VMT due to new developments, VMT analysis for the proposed Project has been performed in accordance with guidance from the OPR Technical Advisory.

The OPR Technical Advisory states that “Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.” As shown in Table 4, the Project is estimated to generate fewer than 110 daily trips on an annualized average basis, and as such, VMT impact due to the Project is assumed to be less-than-significant. Trip generation was considered under annual average conditions for the Project VMT analysis as it provides the best estimate of Project traffic on a long-term basis (i.e. not a temporary or seasonal condition).

**SIGHT DISTANCE ANALYSIS**

This section analyzes the existing SR 140/Project Access Roadway intersection, which will be utilized as the main access point to the Project from SR 140, to determine if adequate sight distance currently exists at the intersection. Any existing sight distances below minimum distances specified by the Caltrans Highway Design Manual, 7th Edition (HDM) have been identified and possible improvements have been recommended.

**Corner Sight Distance (CSD)**

At unsignalized intersections, a substantially clear line of sight should be maintained between the driver of a vehicle on the minor road and the driver of an approaching vehicle on the major road that has no stop. Minimum corner sight distance (CSD) indicated in the HDM is the distance needed, based on design speed of approaching traffic and other factors, to provide enough time for the stopped vehicle on the minor road to turn onto the major road without requiring through traffic to radically alter their speed. The visibility required for this maneuver forms a CSD clear sight triangle.
Minimum CSD at the SR 140/Project Access Roadway intersection was calculated based on equations and variables outlined in Section 405.1 of the Caltrans HDM. The “Left-turn from Stop” CSD case was evaluated because it is the most conservative case (i.e. requires the longest sight distance) and because the SR 140/Project Access Roadway intersection is full-access. The design speed of SR 140 was conservatively assumed to be 10 miles per hour (mph) higher than the posted speed limit of 55 mph (i.e. design speed was assumed to be 65 mph). Actual CSD, which represents the distance along SR 140 that a vehicle stopped at the stop bar on the Project Access Roadway can see oncoming traffic under existing conditions, was measured off of an aerial image. Table 5 shows the minimum required and actual CSD values. Attachment C illustrates the corresponding CSD sight triangle.

### Table 5. Corner Sight Distance at the SR 140/Project Access Roadway Intersection

<table>
<thead>
<tr>
<th>Corner Sight Distance Case</th>
<th>Direction of CSD Triangle</th>
<th>Direction of Approaching Traffic</th>
<th>Design Speed¹ (mph)</th>
<th>Minimum Required Sight Distance (ft)²</th>
<th>Actual Sight Distance (ft)</th>
<th>Corner Sight Distance Met?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left turn from Project Access Roadway onto SR 140</td>
<td>West</td>
<td>Eastbound</td>
<td>65</td>
<td>765'</td>
<td>765'+</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Notes:**
1 Design speed is assumed to be posted speed limit plus 10 mph.
2 CSD = 1.47*(Design Speed)*(Time Gap) = 1.47*65*(7.5+0.5) = 765 ft

**BOLD** text indicates actual sight distance is less than minimum sight distance.

As shown in Table 5, actual CSD at the SR 140/Project Access Roadway intersection is greater than minimum CSD when looking to the west of the intersection (i.e. viewing eastbound approaching traffic). This case was analyzed as it includes a vehicle movement that involves a direct conflict with mainline traffic (i.e. vehicles making a northbound left-turn from the Project Access Roadway would conflict with vehicles making eastbound through movements on SR 140).

CSD for traffic approaching from the westbound direction on SR 140 was not analyzed, as there is no direct conflict between vehicles making left-turn egress movements from the Project Access Roadway and vehicles traveling westbound on SR 140 due to the presence of an existing westbound acceleration lane at the intersection. Similarly, CSD for a “Right-turn from Stop” case was not analyzed as there is no direct conflict between vehicles making right-turn egress movements from the Project Access Roadway and vehicles traveling eastbound on SR 140 due to the presence of an existing eastbound acceleration lane at the intersection.

**Stopping Sight Distance (SSD)**

Minimum stopping sight distance (SSD) is the distance required by the user, traveling at a given speed, to bring the vehicle to a stop after an object ½-foot high on the road becomes visible. Minimum SSD for the eastbound direction of SR 140 in the vicinity of the SR 140/Project Access Roadway intersection was calculated based on data contained in Sections 201.2 and 201.3 of the Caltrans HDM. SSD for traffic approaching from the westbound direction on SR 140 was not analyzed, as there is no direct conflict between vehicles turning into/out of the Project Access Roadway and vehicles traveling westbound on SR 140 due to the presence of an existing westbound acceleration lane and westbound left-turn pocket at the intersection. The design speed of SR 140 was conservatively assumed to be 10 mph higher than the posted speed limit of 55 mph (i.e. design speed was assumed to be 65 mph). Actual SSD, which represents the distance that an eastbound approaching vehicle can see a conflicting vehicle at the intersection, or which represents the distance that a vehicle making a westbound left-turn into the Project Access Driveway can see an on-coming eastbound vehicle, was measured off of an aerial image. Table 6 shows the minimum and actual SSD values. Attachment D illustrates the corresponding SSD sight lines and visible areas.
<table>
<thead>
<tr>
<th>Stop Sight Distance Case</th>
<th>Speed¹ (mph)</th>
<th>Minimum Required Sight Distance (ft)</th>
<th>Actual Sight Distance (ft)</th>
<th>Stopping Sight Distance Met?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 140 – Eastbound Approaching Vehicles²</td>
<td>65</td>
<td>660’</td>
<td>660’+</td>
<td>Yes</td>
</tr>
<tr>
<td>SR 140 – Westbound Left-turn into the Project Access Roadway³</td>
<td>65</td>
<td>660’</td>
<td>660’+</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
1. Design speed is assumed to be posted speed limit plus 10 mph.
2. The sight distance required for a vehicle traveling eastbound on SR 140 to come to a stop after an object becomes visible at the SR 140/Project Access Roadway intersection.
3. The sight distance required for a westbound vehicle on SR 140 making a left-turn into the Project Access Roadway to view an approaching eastbound vehicle on SR 140.

As shown in Table 6, actual SSD at the SR 140/Project Access Roadway intersection exceeds minimum SSD for all cases analyzed.

PROJECT SITE ACCESS AND CIRCULATION

Internal Project site circulation was reviewed to assess on-site vehicle turning radii, internal roadway widths, emergency access, and potential conflicts. Review of the Project site plan indicates that vehicles would enter the site via the existing 30-foot wide Project Access Roadway that leads to an existing parking area that would be expanded in Phase 2 of the Project. There are approximately 34 existing on-site parking stalls with 48 additional stalls planned for Phase 1 and Phase 2.

Phase 1 and Phase 2 of the Project include construction of two-way dirt roads constructed to fire code requirements that connect the parking areas and the proposed tent areas.

CONCLUSION

The Project proposes to construct a total of 80 basic wood tent platforms that would support 80 “glamping” style tents. The Project would also construct an event tent, bathhouse, and clubhouse. The Project would complete the development over two phases. Primary access to the site would be provided via an existing access roadway intersection with SR 140.

The Project is estimated to generate less than 50 trips during the peak hour under “worst-case” Saturday summer peak full-occupancy conditions and therefore would not require a full traffic impact study or evaluation of LOS per Caltrans guidelines.

On an annual average basis, the Project is estimated to 90 daily trips with 15 site peak hour trips (4 inbound and 11 outbound). In accordance with OPR guidance, VMT impact due to the Project is assumed to be less-than-significant, as the Project is estimated to generate fewer than 110 daily trips on an annualized average basis.

Minimum CSD and SSD requirements were shown to be met at the Project Access Roadway.
ATTACHMENT A
Project Vicinity Map and Site Plan
Applicant:
Brian Lawrence
Co-Founder, Wildhaven
(978) 857-1035 Brian@ccc.camp

Project Address:
4808 CA-140
Mariposa, CA 95338

APN: 012-180-0560
Parcel Size: 36.31 acres

General Vicinity Map
Wildhaven® Yosemite Site Plan

PRE-APPLICATION
SITE PLAN

Project Address:
4808 CA-140
Mariposa, CA 95338

APN: 012-180-0560
Parcel Size: 36.31 ac.

Applicant:
Brian Lawrence
Co-Founder, Wildhaven
(978) 857-1035
Brian@ccc.camp

Site plan notes attached.
## ATTACHMENT B

### Additional Project Trip Generations

<table>
<thead>
<tr>
<th>Wildhaven Yosemite Trip Generations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Weekday Summer Peak</td>
</tr>
<tr>
<td>Saturday Summer Peak</td>
</tr>
<tr>
<td>Sunday Summer Peak</td>
</tr>
<tr>
<td>Weekday Annual Average</td>
</tr>
<tr>
<td>Saturday Annual Average</td>
</tr>
<tr>
<td>Sunday Annual Average</td>
</tr>
</tbody>
</table>

### Notes:

1. Based on trip generation rates in Table 1.
ATTACHMENT C
Corner Sight Distance
ATTACHMENT D
Stopping Sight Distance