



## MEMORANDUM

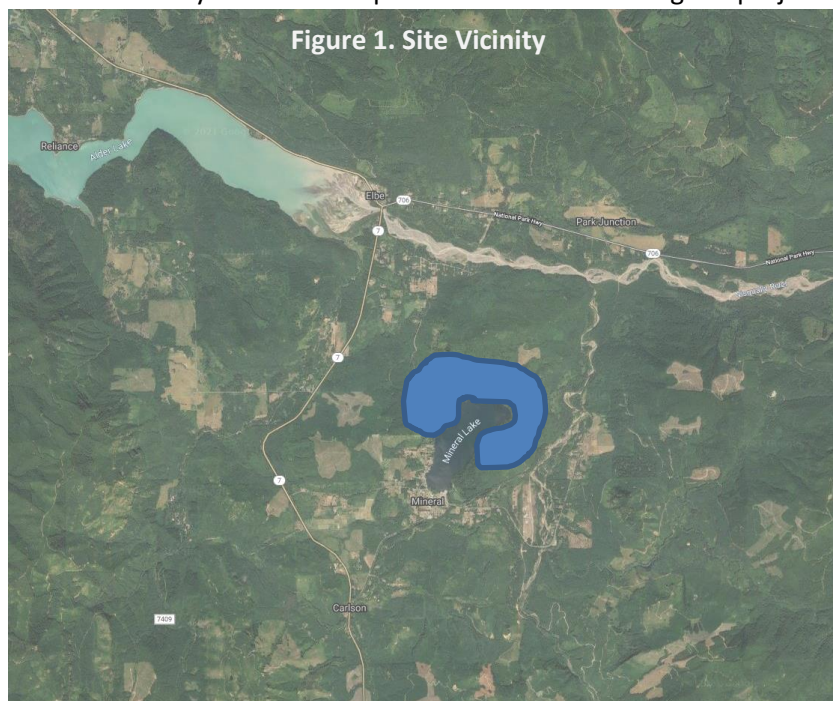
**TO:** Lewis County  
**FROM:** Ryan Shea, PTP, Senior Transportation Planner  
**DATE:** March 30, 2021  
**PROJECT #:** SCJ # 3375.01  
**SUBJECT:** Mineral Lake YMCA Camp – Trip Generation Memo

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### Introduction

YMCA of Greater Seattle is pursuing a Comprehensive Land map amendment for a Master Plan Resort overlay of Forest Resource Land to support a proposed YMCA youth and family camp. As a part of this effort a SEPA checklist was completed and submitted in December of 2020. Lewis County issued a letter of incompleteness on February 11, 2021, which cited, among other issues, the lack of detail on impacts of the project on local roadways, specifically, Mineral Hill Road, Mineral Road, and SR 7. This Trip Generation Memo will document the anticipated trip potential of the proposed YMCA camp and the distribution and assignment of that traffic to the local roadways.

**Figure 1** illustrates the site vicinity and the transportation network serving the project area.





## Proposed Development

The proposed YMCA youth and family camp is anticipated to accommodate 400 campers and 100 staff members at full build out. Peak usage is anticipated to occur the late spring and summer months. During this timeframe camps will typically be one week in length. On typical weekdays during each camp there will be very little vehicular activity entering or leaving the site. Peak traffic activity will occur on the weekend when one camp ends (typically Saturday morning) and the next camp begins (typically Sunday afternoon).

Access to the camp will be provided by one full access driveway on Mineral Hill Road.

## Project Traffic Characteristics

The two project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network. These are discussed in the following paragraphs.

## Site Generated Traffic Volumes

Typically vehicle trip generation is most commonly estimated using the trip generation rates contained in the current (10<sup>th</sup>) edition of the *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). However, the ITE manual does not contain information related to summer camps as this type of land use is very unique and usually tied to the individual characteristics of a specific camp. To determine the trip generation potential of the proposed YMCA summer camp, alternative data sources were explored. An independent trip generation study for a summer camp in northern California (Kidder Creek Orchard Camp in Siskiyou County) was reviewed. The operations of this camp were compared to the expected operations of the proposed YMCA camp to determine the applicability of the specific trip generation rates developed from actual counts taken at this camp. Below is a description of the observed travel characteristics for the Kidder Creek Orchard Camp followed by a discussion of an alternate trip generation approach for the proposed Mineral Lake YMCA camp.

### *Kidder Creek Orchard Camp:*

Kidder Creek Orchard Camp prepared a traffic impact analysis for a camp expansion in December of 2015. To determine the level of traffic increase associated with a camp expansion proposed at that time a study was prepared to document and describe the existing trip-making experience of the camp. Traffic volumes were collected for a typical Saturday during peak summer activity for the camp (July 2015) and both daily and PM peak hourly trip generation rates per camper were determined. Based on the camp size at that time they calculated the following trip rates:

- Daily trip rate – 1.72
- Peak hour trip rate – 0.33

The camp reported 42.5% of campers arrived via bus or van on the day of the count.

### *Proposed Mineral Lake YMCA Camp:*



At full build out the proposed Mineral Lake YMCA camp will accommodate 400 campers and 100 staff. Based on other camps operated by the YMCA they expect approximately 70% of the campers will arrive by bus. For those campers that arrive via passenger vehicle they typically see approximately 20% either carpool or be families with multiple campers. Most staff will remain at the camp for the entire peak summer season. They will each have one day off each week, which typically occurs on the weekend between camps. Staff are generally not allowed to leave the camp except for their day off and typically half of the camp staff will elect to leave the camp on a given weekend. Approximately 10% of the staff will live locally and drive to/from the camp each day.

## Trip Generation Calculation

An assessment of potential trip generation for the proposed Mineral Lake YMCA camp was calculated in two different ways:

- Option 1 - using the trip rate data from the Kidder Creek Orchard Camp, and
- Option 2 - based on the specific travel characteristics expected for the proposed camp.

To provide a conservative analysis the trip generation calculations the maximum capacity of the proposed YMCA camp is assumed.

The peak hour and daily trip generation using the Kidder Creek Orchard Camp trip rate data is shown in **Table 1** below. It should be noted that this trip generation is based on all campers arriving and departing on the same day and assumes that only 42.5 percent of campers will arrive by bus or vanpool.

**Table 1. Kidder Creek Orchard Trip Generation Estimation**

Time Period	Trip Rate	Size	Total 1-Day Trips
Daily	1.73	500	865
Peak Hour	0.33	500	165

Note: Rates are based on 42.5% camper arrivals/departures by bus or vanpool. All arrivals and departures occur on the same day.

Given the larger portion of campers anticipated to arrive at the YMCA camp via bus, a separate trip generation estimate using the specific travel characteristics of the proposed YMCA camp has been prepared. This calculation assumes the following:

- Based on input from the YMCA, 70% of campers would travel via bus.  $70\% * 400$  campers = 280 campers. Assuming 50 campers per bus this would result in 6 buses.
- The remaining 120 campers would travel via passenger vehicle. Assuming 20% would be in a carpool or represent a multiple camper family yields 96 passenger vehicles during arrival times and departures ( $80\% * 120$  campers = 96).
- 90% of the staff will remain on site all summer.  $90\% * 100$  staff = 90 staff.
  - Half of the resident staff may travel each weekend and assuming that each would travel along yields 45 vehicles traveling after camper departure or before camper arrival ( $50\% * 90$  staff = 45).



- 10% of staff will live locally and travel to the camp each day which represents 10 vehicles arriving or departing likely during peak travel hours ( $10\% * 100 = 10$ ).

Assuming that each staff member would travel alone this would result in 157 vehicles each day, which would result in 314 daily trips. For the Kidder Creek Orchard Camp, the peak hour of activity represents approximately 20% of the daily volume. Assuming this same relationship would result in 63 peak hour trips.

A summary of this calculation is provided in **Table 2**.

**Table 2. Proposed YMCA Trip Generation Estimation**

Time Period	1-Day Trip Rate <sup>1</sup>	Size	Total 1-Day Trips <sup>1</sup>	2-Day Trip Rate <sup>2</sup>	Total 2-Day Trips <sup>2</sup>
Daily	0.63	500	<b>314</b>	1.26	<b>628</b>
Peak Hour	0.13	500	<b>63</b>	0.25	<b>126</b>

1. Represents a single day for start of camp arrivals or end of camp departures.
2. Combined trips for both end of camp departures and start of camp arrivals.

A comparison of the two trip estimation methods indicates that the Kidder Creek Orchard Camp trip estimation results in a higher trip total. Beyond the specific differences related to the existing Kidder Creek Orchard Camp and the proposed YMCA camp at Mineral Lake, this trip total difference is largely due to the difference is how many campers travel to/from the camp via bus versus passenger vehicle. Given the similarity in results after accounting for the different camper travel characteristics, the breakdown calculation for the proposed YMCA camp is the assumed trip generation. This trip generation represents max occupancy of the camp and would occur each Saturday and Sunday during the peak summer months.

## Local Roadway Assessment

It is anticipated that the majority of vehicle activity will be travelling to/from the north to the Seattle area as the camp would be owned and operated by the Seattle YMCA. However, the camp traffic is made up of different elements that will behave differently. Below is a summary of the different trip types and how they are expected to travel to/from the camp:

- 12 daily trips (4%) would be from buses. These trips are expected to happen during the peak hour of the activity and travel to/from the north.
- 192 daily trips (61%) would be from passenger cars transporting campers. These trips are expected to span a 3-4 hour period and predominantly travel to/from the north.
- 90 daily trips (29%) of the trips would be resident staff trips. These trips are expected to occur before or after the peak camper activity and travel north and south of the camp.
- 20 daily trips (6%) would be from local staff. These trips are expected to occur outside the peak camper activity and travel north and south of the camp.

Based on the trip generation summary the peak hour of the camp on a peak activity weekend day will be 63 trips, representing the peak hour of camper arrival/departure activity. This would be split evenly between entering and exiting trips, resulting in approximately 30 trips entering and exiting the site.



Given this level of volume increase, and that the majority of this traffic will enter from the north, a left-turn pocket may be an appropriate improvement on SR 7 and/or Mineral Hill Road. This improvement should be evaluated when the proposed YMCA camp proceeds into a formal traffic study.

Thank you for reviewing the enclosed materials. We have prepared this information for your review in anticipation of a traffic scoping discussion to finalize the requirements of a Traffic Impact Analysis for the development.

If you have any questions or need additional information, please call me at 360.352.1465.

Respectfully,

SCJ Alliance

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