



July 9, 2019

Mr. Michael Wright
TRV Corp.
6095 Bodega Avenue
Petaluma, CA 94952

Updated Focused Traffic Study for 6095 Bodega Avenue

Dear Mr. Wright;

W-Trans has completed a focused traffic study that addresses the potential change in trip generation associated with the proposed change in land use for 6095 Bodega Avenue in the County of Sonoma.

Project Description

The proposed project would create a cannabis cultivation facility on a site currently occupied by a single-family dwelling. The site is just over seven acres in size and is located on the south side of Bodega Avenue approximately 5.5 miles west of the Petaluma City Limits. The project, as proposed, would include 10,000 square feet of greenhouse cultivation space and a 4,538 square foot "head house" building that would provide office space, storage area, restrooms, processing facilities, and a 1,000 square foot propagation room. The operation, as anticipated, would have up to six full-time employees that would work traditional hours between 8:00 a.m. and 5:00 p.m. Monday through Friday; one employee would live on-site and another would work remotely most days.

- File Number: UPC17-0018
- Address: 6095 Bodega Avenue, Petaluma CA
- APN: 022-200-002
- Project Name: TRV
- Applicant Name: Two Rock Ventures, Attn: Michael Wright
- Property Owner Name: Fenix Farms, LLC

Trip Generation

Numerous trip generation rates and categories in *Trip Generation Manual*, 10th Edition, 2017, published by the Institute of Transportation Engineers (ITE) were explored in determining the potential change associated with the proposed use. While the 10th Edition of the Manual includes rates for a new land use called "Marijuana Dispensary" (Land Use #882), the proposed project does not include a dispensary component so these rates are not applicable. It was determined that cannabis cultivation is most closely aligned with what would be considered a light industrial use so standard rates for "General Light Industrial" (Land Use #110) were applied to the proposed project.

Consideration was given to evaluating the project based on the total floor area of the cultivation space and the head house building. A review of standard rates for light industrial uses and a comparison of those based on area versus those based on employees indicate that the average ratio between employees and floor space is about 770 square feet per employee. For the project site, this would translate to an anticipated work force of about 19 persons based on a total floor area of 14,538 square feet (10,000 in the greenhouse and 4,538 in the head house). Given that this project expects to have substantially fewer than 19 employees, use of the rates based on total floor area appears unreasonable. However, if only the 4,538 square feet in the head house is used, the resulting employee count is six, which is consistent with the maximum number anticipated for the project so the trip generation estimate for 4,538 square feet of floor space was therefore reviewed.

Application of the rates based on the floor area of the head house building would result in an average of 23 trips per day with three trips during the morning peak hour and three trips during the evening peak hour. Given that the operation would require up to six employees, use of the rates based on the floor area of the head house appear to under-count the number of peak hour trips that could reasonably be expected on days where all six employees are on-site. Generally, one trip per employee can be expected during each peak hour, including an inbound trip to work in the morning and an outbound trip leaving work in the evening.

Because application of standard ITE rates for general light industrial with floor area of the head house as the independent variable results in too few peak hour trips than would be reasonable for the proposed number of employees, the same rates were applied to the floor area of the greenhouse. Based on 10,000 square feet of greenhouse space, the resulting employee count is 13, which is more than twice as much as the proposed number; however, the resulting number of peak hour trips is seven and six during the morning and evening peak hours, respectively, which is generally consistent with expectations for six employees and would represent one trip per employee during each peak hour with an additional trip during the morning peak hour that could represent a delivery or an employee getting dropped off for work. Based on the size of the greenhouse, the proposed project would be expected to generate an average of 50 trips per day, including seven trips during the weekday a.m. peak hour and six trips during the p.m. peak hour; these results are summarized in Table 1.

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
General Light Industrial	10.0 ksf	4.96	50	0.70	7	6	1	0.63	6	1	5

Notes: ksf = 1,000 square feet

It is noted that because the proposed project would be expected to result in less than 10 trips during each peak hour, per *County of Sonoma Traffic Impact Study Guidelines*, a full traffic impact study is not required. Further, while the peak hour trip generation estimate in the table above appears reasonable for the days with all six employees on-site, it is likely that the daily trip generation estimate is high, even for days when all six employees are on-site. Based on site-specific operational parameters, it is anticipated that the project would typically generate about 20 daily trips, consisting of 16 trips for employees and four trips for deliveries.

Site Access

The project site is located on the south side of Bodega Avenue approximately 1,300 feet west of its eastern intersection with Middle Two Rock Road. The section of Bodega Avenue that provides access to the project site is 40 feet wide and has a 12-foot travel lane and eight-foot shoulder in each direction. According to traffic counts available on the County of Sonoma Department of Transportation and Public Works website, the section of Bodega Avenue between King Road and Pepper Road has an average daily traffic (ADT) volume of approximately 5,060.

Sight Distance

At private roads and driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the driveway and the driver of an approaching vehicle. Adequate time should be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along Bodega Avenue at the project driveway were evaluated based on sight distance criteria contained in *A Policy on Geometric Design on Highways and Streets* published by American Association of State Highway and Transportation Officials (AASHTO). The recommended sight distances for minor street approaches that are driveways are based on stopping sight distance, with approach travel speeds used as the basis for

determining the recommended sight distance. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 3.5-foot object height in the center of the approaching lane of the major road. Set-back for the driver at the driveway is 14.5 feet, measured from the edge of the traveled way.

For the *prima facie* 55-miles per hour (mph) speed limit on Bodega Avenue, the recommended stopping sight distance is 500 feet. Based on a review of field conditions, sight distance at the driveway extends more than 600 feet in both directions, which is adequate for speeds in excess of 55 mph. Additionally, adequate sight distance can be achieved in both directions for a following driver to see and react to a vehicle stopped to turn into the project driveway.

Finding – Sight distance is adequate at the project driveway to accommodate all turns into and out of the site.

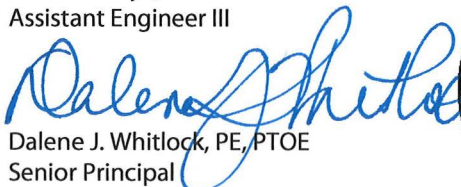
Conclusions

Based on standard ITE rates applied to the greenhouse floor area, the proposed project would be expected to generate an average of 50 trips on a daily basis with seven and six trips during the a.m. and p.m. peak hours, respectively, though it is noted that the daily trip generation estimate is conservative and likely higher than number of daily trips the project would actually generate. Sight distances along Bodega Avenue at the project driveway are more than adequate for the *prima facie* speed limit. Based on the minimal number of peak hour trips expected to be generated by the proposed project, it is reasonable to conclude that the change in land use would have a *less-than-significant* impact on traffic operation.

We hope this information is adequate to address the potential traffic issues associated with the proposed cultivation facility. Please contact us if you have any further questions. Thank you for giving us the opportunity to provide these services.

Sincerely,


Cameron Nye, EIT
Assistant Engineer III


Dalene J. Whitlock, PE, PTOE
Senior Principal

