

August 27, 2019

Mr. Todd Pendergrass
Chandler Aggregates, Inc.
P.O. Box 77850
Corona, CA 92877

SUBJECT: GILMAN SPRINGS MINE QUEUING ASSESSMENT

Dear Mr. Todd Pendergrass:

This letter serves as a supplement to the [Gilman Springs Mine Traffic Impact Analysis](#) (April 5, 2018) (referred to as “2018 Traffic Study”). Specifically, the purpose of this letter is to evaluate the queuing at the Project Driveway on Gilman Springs Road to determine if the existing storage (160-feet) for the southbound left turn pocket is sufficient to accommodate Project traffic. The Existing plus Ambient Growth plus Project plus Cumulative (EAPC) forecasts published in the 2018 Traffic Study have been utilized for the purposes of this queuing assessment.

SimTraffic uses the input parameters from Synchro to generate random simulations. SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. The random simulations can also be used to determine the average and 95th percentile queues for study area intersections. The 95th percentile queue is not necessarily ever observed; it is simply based on statistical calculations (or Average Queue plus 1.65 standard deviations). Many jurisdictions utilize the 95th percentile queues for design purposes.

The random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths for the left turn lane into the Project site from Gilman Springs Road. The SimTraffic simulations has been recorded 5 times, during the weekday AM and weekday PM peak hours for EAPC traffic conditions, and have been seeded for 30-minutes with 60-minute recording intervals.

Based on the simulations for EAPC traffic conditions, the 95th percentile queue during the AM peak hour is 7-feet while the PM peak hour 95th percentile queue is 20-feet for the southbound left turn lane (the analysis worksheet shows eastbound left turn lane for the southbound left turn movement due to roadway orientation assumptions in the analysis software). As such, the existing 160-foot left turn pocket on Gilman Springs Road which serves the Project has sufficient storage to accommodate Project traffic. The existing 160-foot left turn lane provides enough storage to accommodate 2 WB-67 trucks. The queuing worksheets have been provided in Attachment A.

Mr. Todd Pendergrass
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If you have any questions, please contact me directly at (949) 336-5982.

Respectfully submitted,
URBAN CROSSROADS, INC.

A handwritten signature in black ink that reads "Charlene So". The signature is written in a cursive, flowing style.

Charlene So, PE
Associate Principal

ATTACHMENT A

**EAPC QUEUING ANALYSIS WORKSHEETS FOR PROJECT DRIVEWAY ON GILMAN SPRINGS
ROAD**

Queuing and Blocking Report
EAPC (2019) - AM Peak Hour WITH IMPROVEMENTS

08/22/2019

Intersection: 3: Gilman Springs Rd. & Jack Rabbit Tr.

| Movement | EB | EB | WB | SB |
|-----------------------|-----|------|------|------|
| Directions Served | L | T | TR | LR |
| Maximum Queue (ft) | 11 | 123 | 258 | 31 |
| Average Queue (ft) | 1 | 57 | 114 | 2 |
| 95th Queue (ft) | 7 | 106 | 199 | 15 |
| Link Distance (ft) | | 1732 | 1285 | 1159 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 160 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
EAPC (2019) - PM Peak Hour WITH IMPROVEMENTS

08/22/2019

Intersection: 3: Gilman Springs Rd. & Jack Rabbit Tr.

| Movement | EB | EB | WB | SB |
|-----------------------|-----|------|------|------|
| Directions Served | L | T | TR | LR |
| Maximum Queue (ft) | 36 | 252 | 187 | 39 |
| Average Queue (ft) | 4 | 117 | 64 | 5 |
| 95th Queue (ft) | 20 | 215 | 136 | 24 |
| Link Distance (ft) | | 1732 | 1285 | 1159 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 160 | | | |
| Storage Blk Time (%) | | 2 | | |
| Queuing Penalty (veh) | | 0 | | |

Zone Summary

Zone wide Queuing Penalty: 0