

T R A F F I C I M P A C T S T U D Y

QuikTrip 4283

Aurora, Colorado

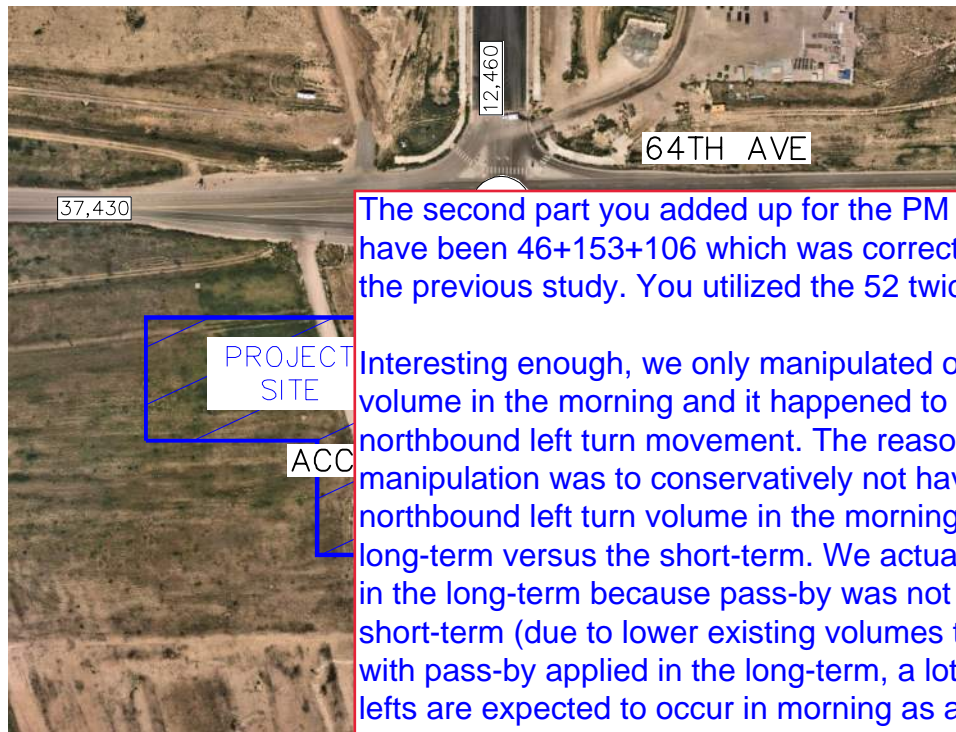
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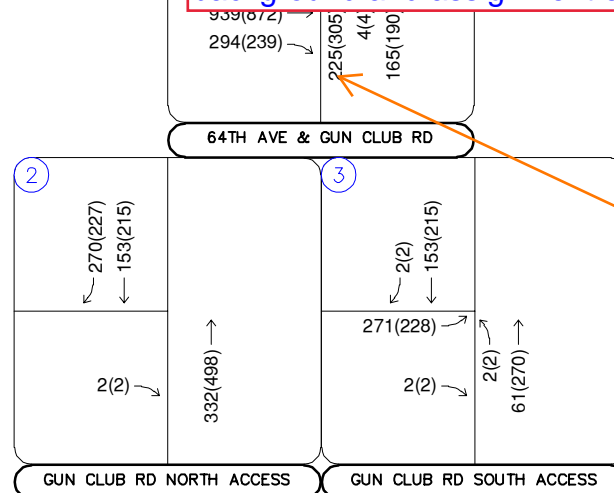
June 2024

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The second part you added up for the PM peak hour should have been 46+153+106 which was correctly represented in the previous study. You utilized the 52 twice from the AM.

Interesting enough, we only manipulated one movement volume in the morning and it happened to be the northbound left turn movement. The reason for this manipulation was to conservatively not have that the northbound left turn volume in the morning be less in the long-term versus the short-term. We actually calculate less in the long-term because pass-by was not applied in the short-term (due to lower existing volumes to pull from). But with pass-by applied in the long-term, a lot less northbound lefts are expected to occur in morning as a good portion of vehicles will enter the site from the west and continue to their trip to the east which increases the northbound right turn movements. This conservatively added volume has now been added to the background figure (and not just inflated on the total volume figure) so that adding up background and assignment equals the total volumes.



Verify volumes. I added background, pass by trips, and non pass by trips.
 $52+41+70=163$ vehicles
 $52+153+106=311$

I only checked this movement.

LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 14
QUIKTRIP 4283
AURORA, COLORADO
2050 TOTAL TRAFFIC VOLUMES

5.3 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area key intersection. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 5** with calculations provided within **Appendix H**.

Table 5 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2026 Calculated Queue (feet)	2026 Recommended Length (feet)	2050 Calculated Queue (feet)	2050 Recommended Length (feet)
64th Ave & Gun Club Rd					
Eastbound Left	350'	282'	350'	282'	350' DL
Eastbound Right	100'/375'	34'	100'/375'	55'	100'/375'
Westbound Left	375'	118'	375'	209' #	375'
Westbound Right	175'	15'	175'	31'	175'
Northbound Left	150'/325' DL	101'	150'/325' DL	141'	150'/325' DL
Northbound Right	25'	52'	25'	68'	25'
Southbound Left	200' DL	176' #	200' DL	162' #	200' DL
Southbound Right	250'/C DR	370' #	250'/C DR	376' #	250'/C DR

DL = Dual Left Turn Lanes; DR = Dual Right Turn Lanes; **Blue** Text = Recommendation
= 95th percentile volume exceeds capacity, queue may be longer.

As shown in the table above, all reported vehicle queues are anticipated to remain within the existing turn lane lengths throughout the 2050 horizon.

This needs better explanation with this exceeding the turn bay.

5.4 CDOT Turn Bay Length Analysis

The City of Aurora defaults to Colorado Department of Transportation

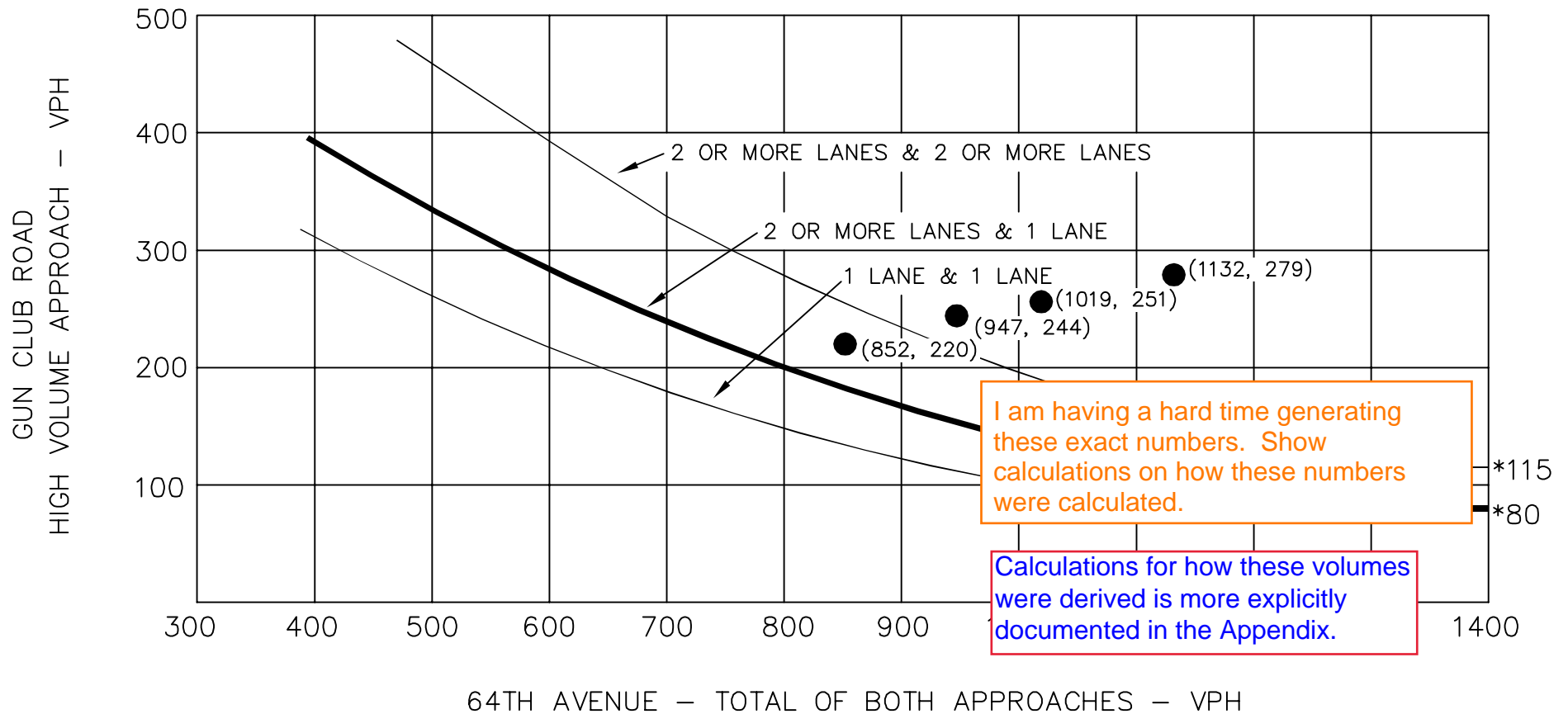
Access Code for their arterial streets. As the City of Aurora classifies 64th Avenue as an arterial street, the auxiliary lane lengths were evaluated per the State Highway Access Code. Since the auxiliary turn auxiliary lanes are provided under existing conditions, the analysis was not evaluated per the State Highway Access Code.

Since this channelized separation from the through lane is not actually a designated right turn lane, the operational analysis has been updated as a shared through/right turn lane.

The requirements of the State Highway Access Code are based upon the state-designated functional classification of the roadway. As 64th Avenue is not a state-maintained roadway, the roadway speed, size, and other characteristics were used to evaluate what functional classification and requirements are most applicable. 64th Avenue is expected to best fit the Non-Rural Highway (NR-B) state functional classification with capacity for moderate travel speeds and ultimately relatively moderate to high traffic volumes. The speed limit along 64th Avenue is 40 mph in the vicinity of the project.

Scale: 1=100

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME



64TH AVENUE & GUN CLUB ROAD
SIGNAL WARRANT ANALYSIS
FOUR HOUR VOLUME WARRANT

* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

● 2026 TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009