

File 117159

June 29, 2019

Samer Chaaya
Royalton Homes Inc.
10114 Highway 26, Unit 4
Collingwood, ON L9Y 3Z1
samer@royaltonhomes.com

Re: Blue Vista, Town of The Blue Mountains
Traffic Impact Study - Addendum Letter

Dear Samer:

Further to your request and that of Grey County, we have reviewed the Blue Vista development plan in consideration of an increase in the total unit count from 133 to 180 residential units (accomplished through changing select single-detached units to semi-detached units. This brief is an update to our initial Traffic Impact Study dated February 27, 2019, and has been prepared to address the potential transportation impacts associated with the increased unit count.

PROPOSED DEVELOPMENT

Site Trips

With the increase in units, the number of vehicle trips generated by the development has been revisited based on the type of use, development size, and trip generation rates as per the *ITE Trip Generation Manual*¹ 10th Edition. It is noted that ITE manual does not provide specific trip rates for semi-detached units, therefore the *single family detached* land use code has been applied to all 180 units.

The associated trip rates and trip estimates considering both 133 and 180 unit counts are provided in Table 1, as is the net increase in trips resulting from the unit change. Overall, the proposed development, should it be increased to 180 units, is expected to generate 178 trips during the weekday Friday PM peak hour and 167 trips during the Saturday peak hour, resulting in a net increase in the order of 43 to 46 peak hour trips (total of inbound and outbound trips) over the 133 unit count scenario

¹ *ITE Trip Generation Manual, 10th Edition*. Institute of Transportation Engineers, September 2017.

Table 1: Blue Vista Trip Generation

TRIP RATES / ESTIMATES	SIZE	FRIDAY PM PEAK HOUR			SAT PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
trip rates	per unit	0.62	0.37	0.99	0.50	0.43	0.93
trip estimates	133 units	83	49	132	67	57	124
trip estimates	180 units	112	66	178	90	77	167
difference	47 units	29	17	46	23	20	43

Trip Distribution & Assignment

The resulting site generated traffic volumes (for 180 units) are illustrated in Figure 1, following the same distribution patterns set out in the previous traffic impact study.

TRAFFIC IMPACTS**Intersection Operations**

To assess the impacts of the increased traffic volumes resulting from the increased unit count, the study area intersections were investigated for the 2035 future total scenario (this is the greatest horizon year and hence has the greatest associated traffic volumes). The 2035 future total volumes are illustrated in Figure 2.

The results of the operational analyses for the 2035 horizon year are provided in Table 2; the operations under 133 units, as presented in the traffic impact study, have been included in Table 3 for comparison purposes. As indicated, the study area intersections will continue to provide good operating conditions (LOS C or better) through 2035 average delays given the projected background growth and additional traffic associated with the Blue Vista development. In comparing the operational analyses, there is little difference in the results (for the most part the associated delays remain comparable) and thus it can be concluded that the traffic generated by the additional 47 residential units will have no appreciable operational impacts on the surrounding road network.



Table 2: Intersection Operations - 2035 Total Traffic Volumes (180 units)

INTERSECTION, CONTROL & MOVEMENT			FRIDAY PEAK HOUR			SATURDAY PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Grey Road 19 & Grey Road 21	roundabout	NB	12	B	0.55	9	A	0.47
		WB	5	A	0.59	5	A	0.60
		SB	9	A	0.34	10	A	0.52
		EB	2	A	0.62	3	A	0.59
		overall	5	A	0.62	6	A	0.59
Monterra Road & Grey Road 21	stop	EB	12	B	0.15	23	C	0.49
Site Access & Grey Road 21	stop	EB	11	B	0.08	12	B	0.11

Table 3: Intersection Operations - 2035 Total Traffic Volumes (133 units)

INTERSECTION, CONTROL & MOVEMENT			FRIDAY PEAK HOUR			SATURDAY PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Grey Road 19 & Grey Road 21	roundabout	NB	11	B	0.54	9	A	0.47
		WB	5	A	0.57	5	A	0.60
		SB	8	A	0.33	10	A	0.52
		EB	2	A	0.61	3	A	0.59
		overall	5	A	0.61	6	A	0.60
Monterra Road & Grey Road 21	stop	EB	12	B	0.14	23	C	0.48
Site Access & Grey Road 21	stop	EB	11	B	0.05	12	B	0.07

Left Turn Lane Requirements

The need for an exclusive left turn lane on Grey Road 21 at the site access point to serve turning traffic was again reviewed based on MTO warrants. Under previous conditions (applying the MTO left turn nomograph reflecting 10% left turns in the advancing volume and a design speed of 70 km/h), a northbound left turn lane with 15 metres of storage is warranted under the 2030 total conditions.

Considering the increased unit count, based on MTO warrant criteria (applying the MTO left turn nomograph reflecting 15% left turns in the advancing volume and a design speed of 70 km/h), the same



northbound left turn lane with 15 metres of storage is warranted under the 2025 total conditions. It is noted that the same is warranted under 2030 and 2035 and total conditions. The completed warrants are provided in Figure 3.

Based on MTO geometric design standards, a left turn lane on a two-lane highway with a design speed of 70 km/h requires 40 metres of parallel lane and 115 metres of taper in addition to the storage requirement identified in the MTO warrant graphs. Thus, the left turn lane should be constructed to an overall length of 170 metres (15m storage + 40m parallel + 115m taper).

As indicated, the increase in residential units will trigger the MTO left turn warrant in 2025 as opposed to 2030 horizon. As in the previous study, the timing for such should be confirmed through ongoing monitoring, recognizing that the assessment considers fairly conservative background growth assumptions.

SUMMARY

This addendum has assessed the potential traffic impacts associated with the increase from 133 to the upper limit of 180 units, within the Blue Vista residential development. Upon completion and assuming 180 units, the development is expected to generate 178 trips during the weekday Friday PM peak hour and 167 trips during the Saturday peak hour, resulting in a net increase in the order of 43 to 46 peak hour trips (total of inbound and outbound trips) over the 133 unit scenario.

In consideration of the minor trip increase, the unit increase will not have any appreciable operational impacts to the surrounding road network.

With respect to the northbound left turn lane previously warranted under 2030 total volumes, the increase in site traffic will now warrant the same left turn lane under 2025 total volumes. As discussed, the timing for left turn lane should be confirmed through ongoing monitoring.

Should you have any questions or comments on the above, please do not hesitate to contact us.

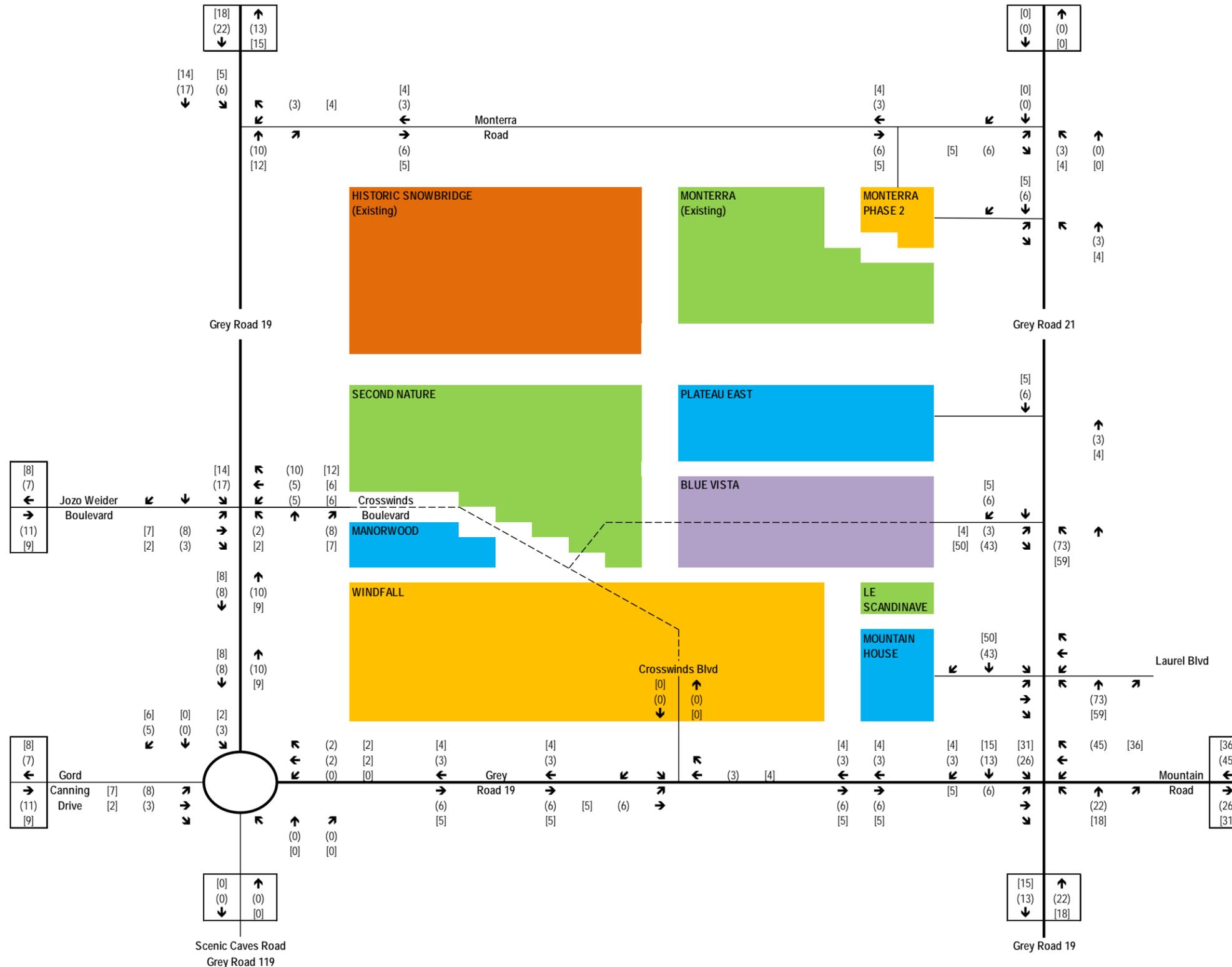
Yours truly,

Tatham Engineering Limited



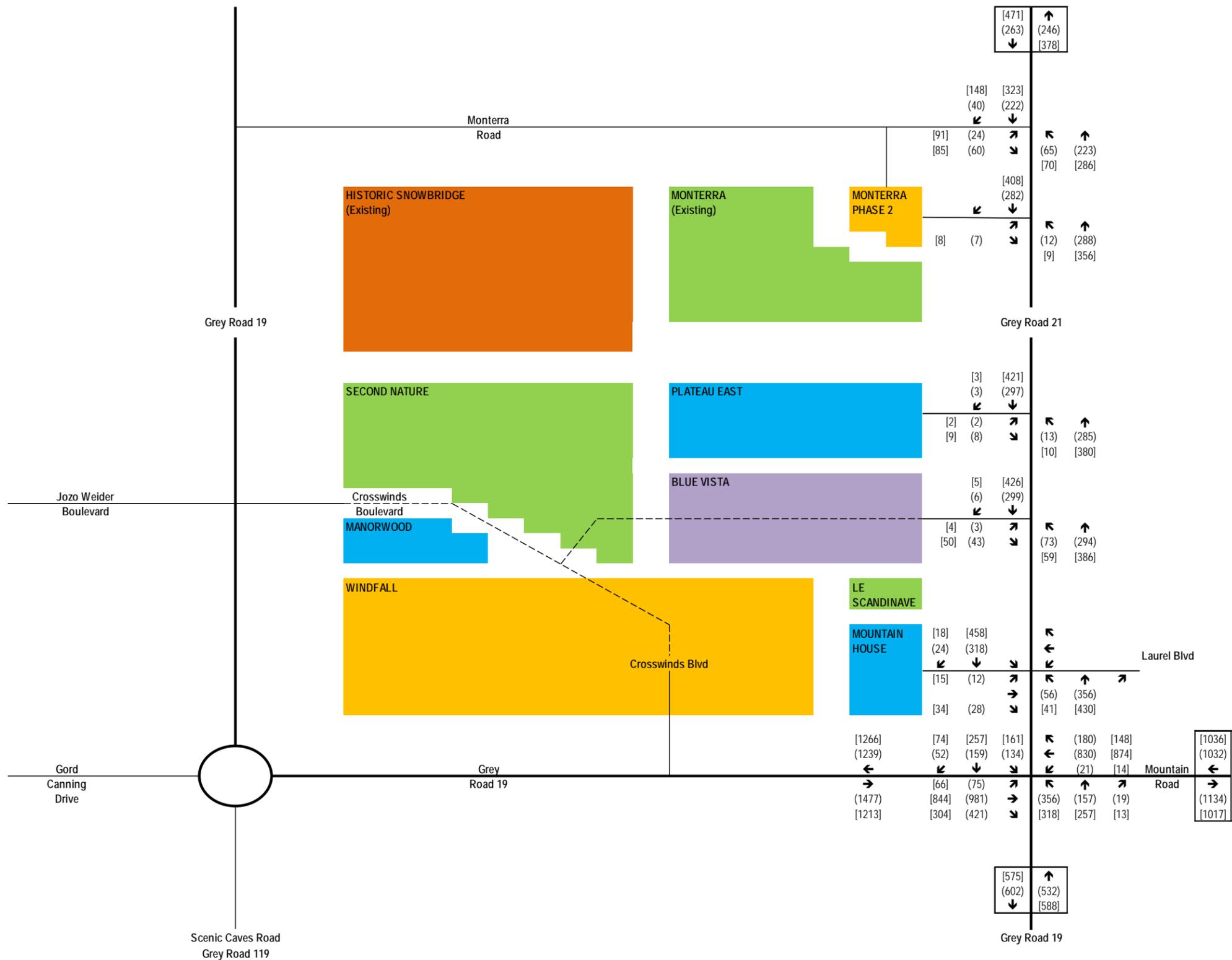
Michael Cullip, B.Eng. & Mgmt, M.Eng, P.Eng.
Vice President Head Office Operations
JL/DP





Blue Vista Residential Development
 Figure 1: Development Traffic Volumes (180 units)

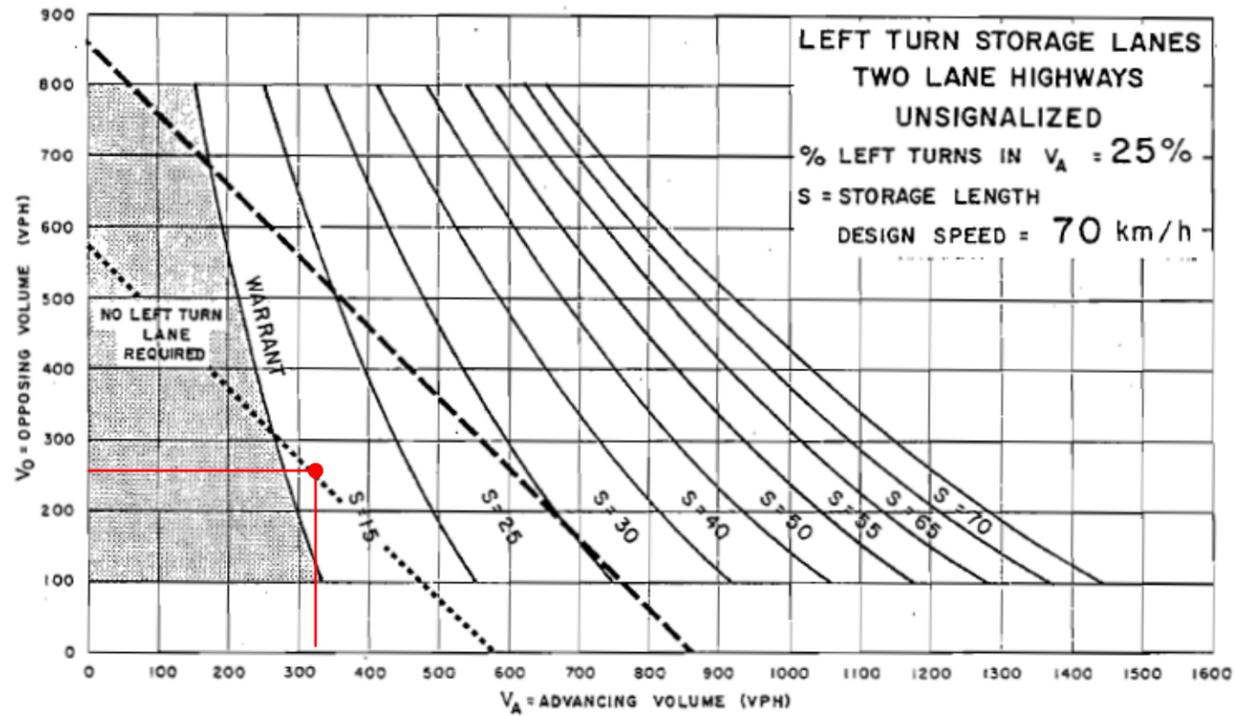




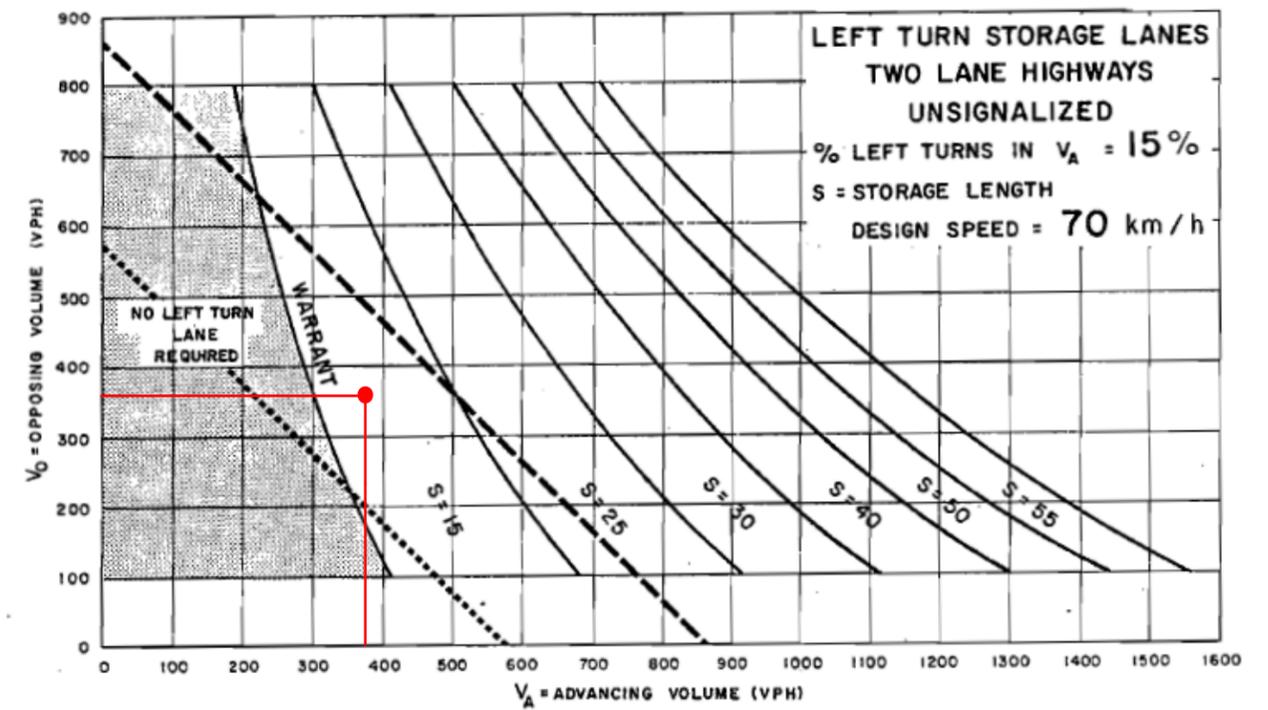
(100) Friday PM peak hour
 [100] Saturday peak hour

Blue Vista Residential Development
 Figure 2: 2035 Total Traffic Volumes

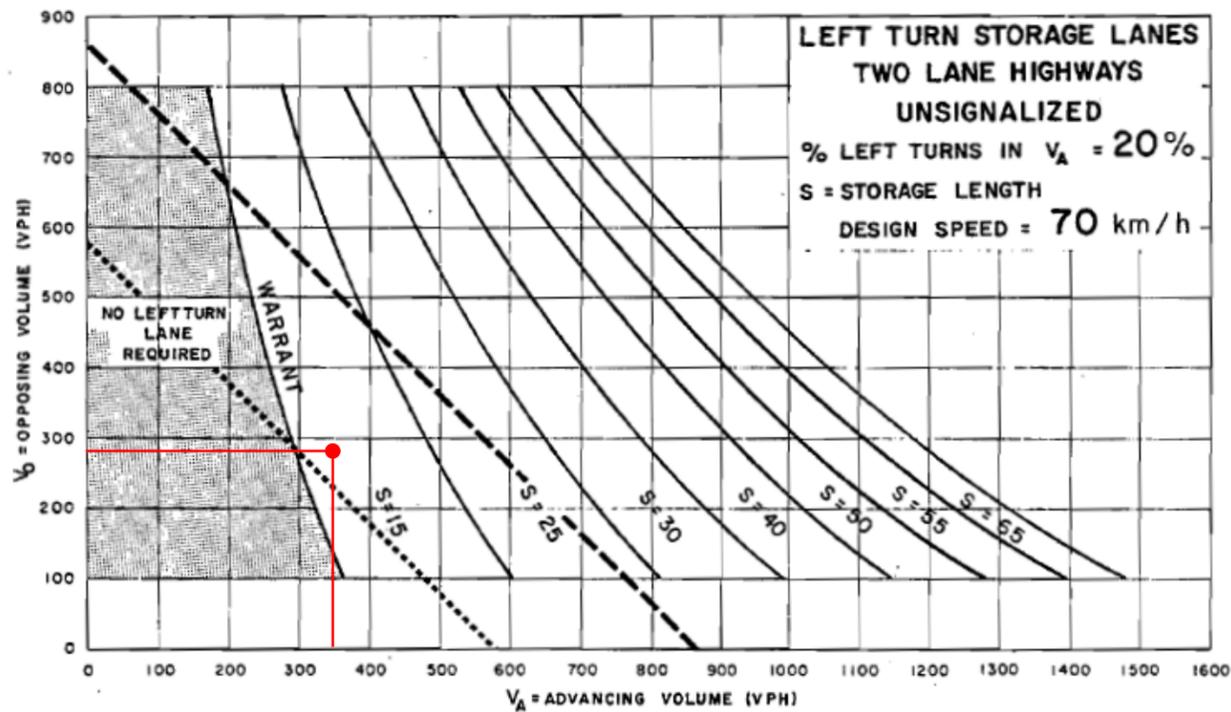




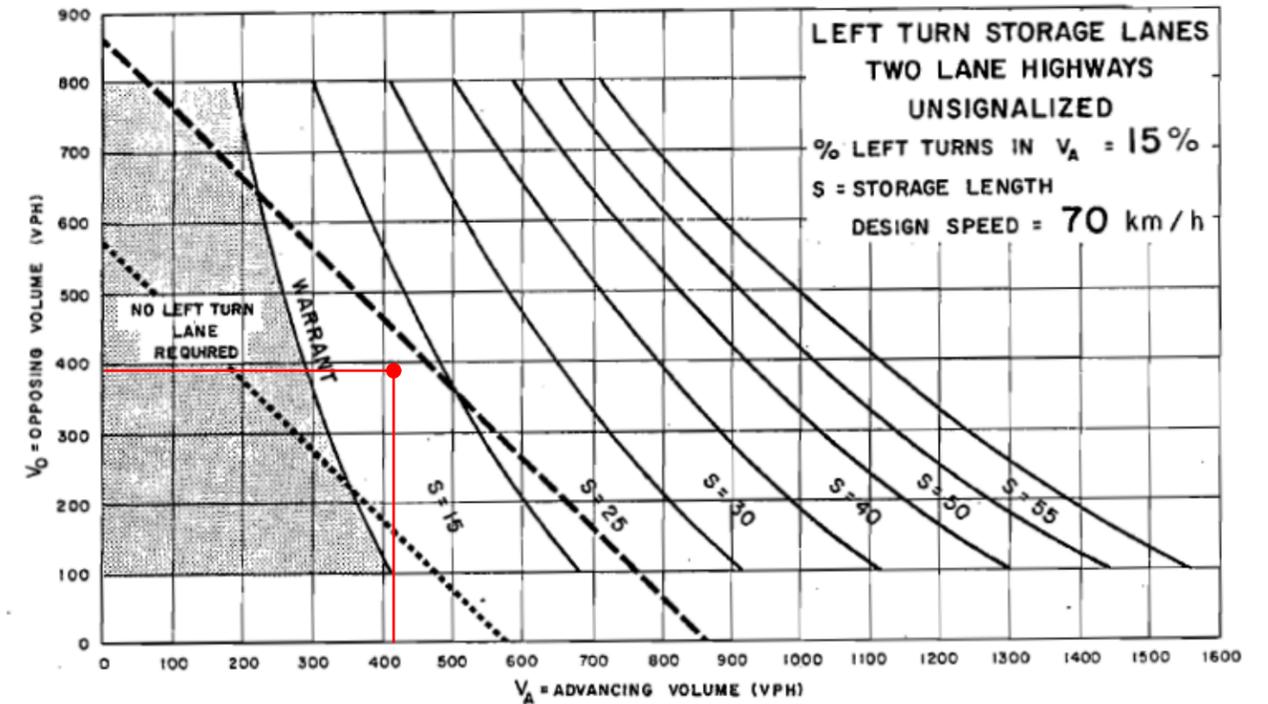
2025 Total Traffic - Friday Peak



2025 Total Traffic - Saturday Peak

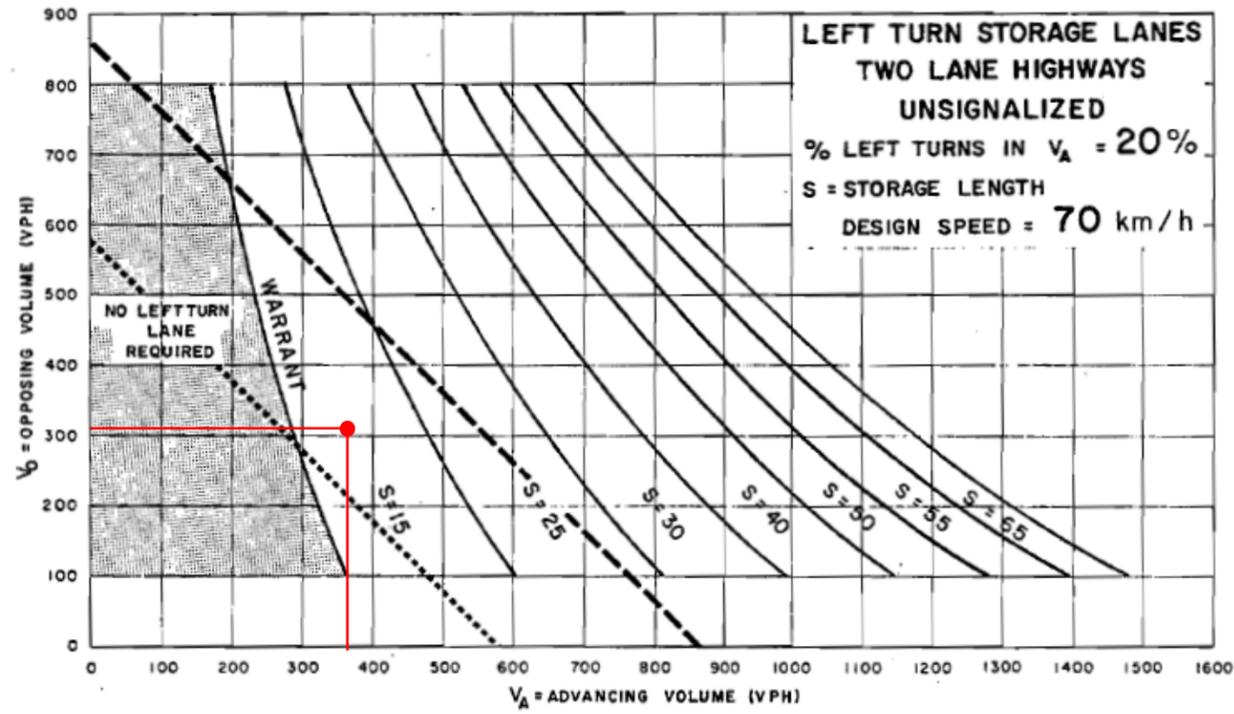


2030 Total Traffic - Friday Peak

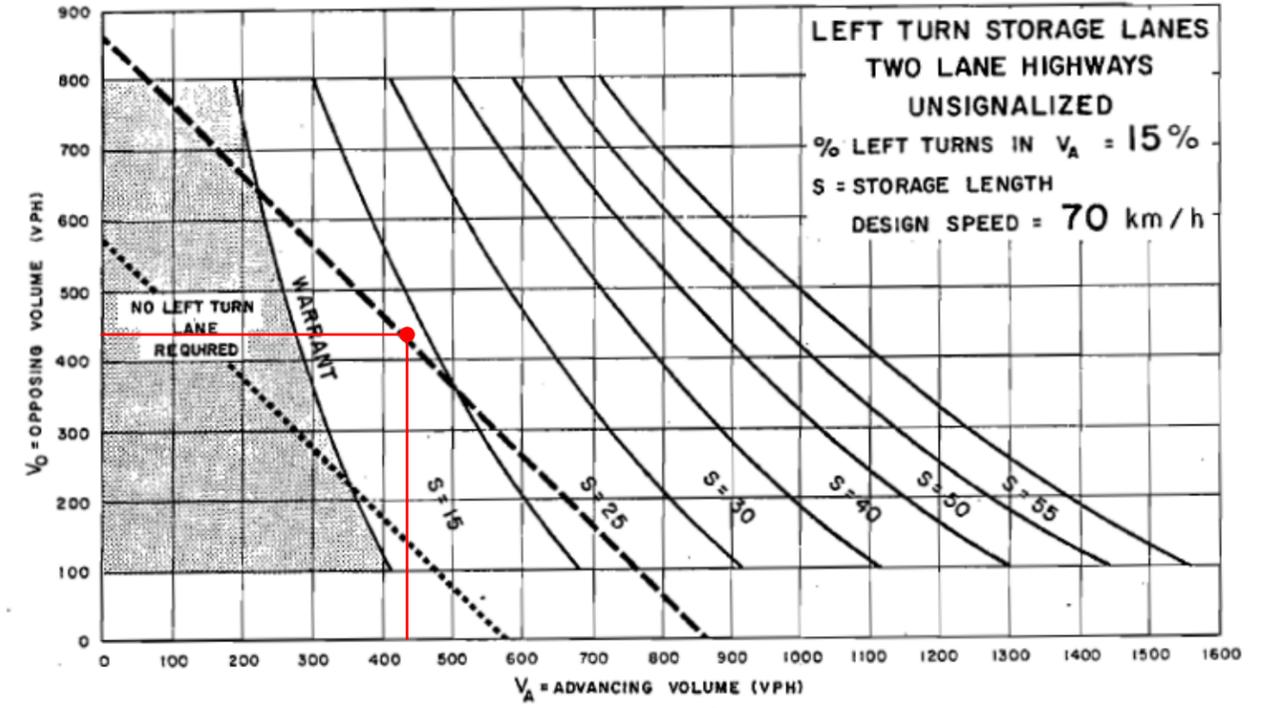


2030 Total Traffic - Saturday Peak





2035 Total Traffic - Friday Peak



2035 Total Traffic - Saturday Peak

