



December 16, 2019

Mr. Adam Moore, P.E.  
Virginia Department of Transportation  
701 VDOT Way  
Charlottesville, VA 22911

**Regarding: River's Edge  
Right Turn Warrant Analysis**

Mr. Moore,

Please find enclosed a warrant analysis for the proposed River's Edge off of U.S. 29 Seminole Trail between Airport Road and Camelot Drive. The purpose of construction at River's Edge is to build 100 multifamily units.

The following items are included with this report:

- VDOT Traffic Data
- ITE Trip Generation Summary
- Warrant Analysis Exhibit
- OTISS Trip Generation Reports

Our analysis shows that a taper is warranted for this project.

If you have any questions you may contact me at [justin@shimp-engineering.com](mailto:justin@shimp-engineering.com) or by phone at 434-953-6116.

Best Regards,

Justin Shimp  
Shimp Engineering, P.C.

The table below summarizes the 2017 VDOT traffic data for the 1.80 mile segment of U.S. 29 Seminole Trail between Airport Road and Camelot Drive, which was used to calculate the peak hour volume (PHV) approaching for the warrant analysis.

Table 1. VDOT traffic data summary – U.S. 29 Seminole Trail

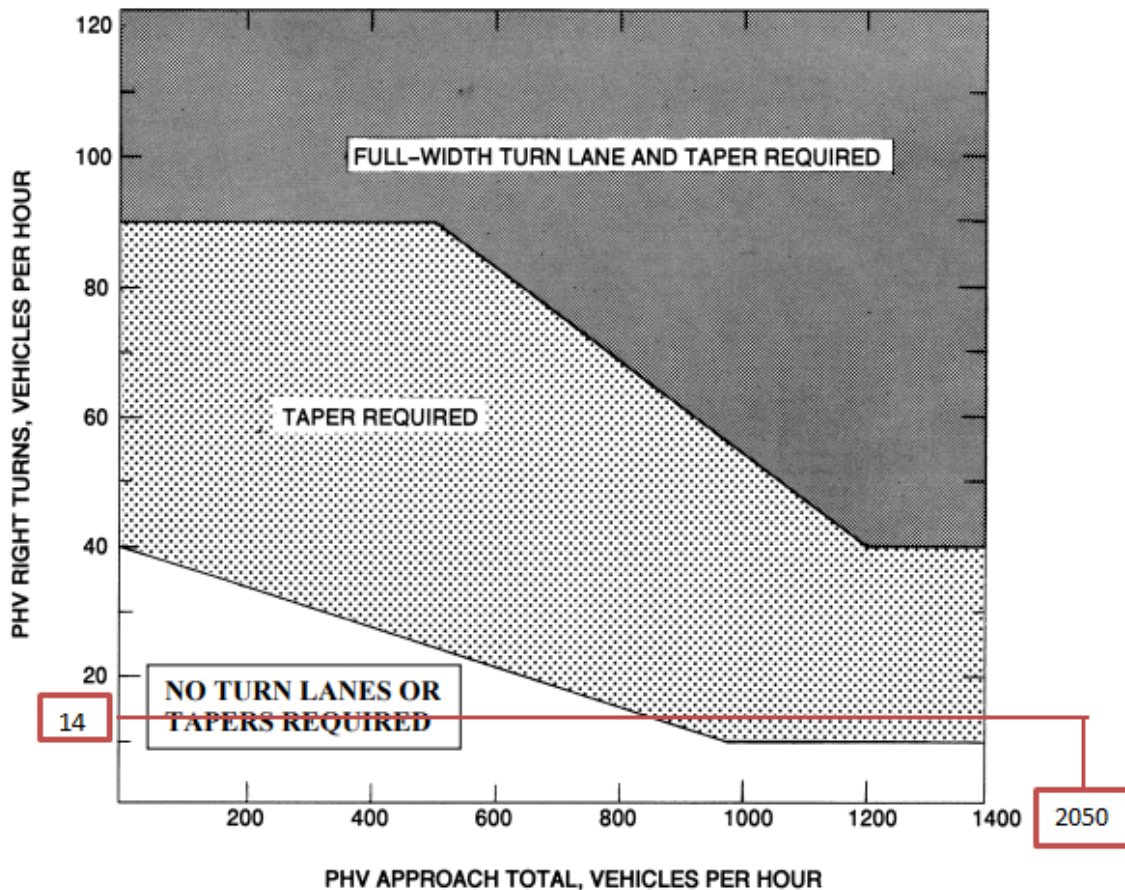
AADT	39000
K factor	0.098
D factor	0.5328
PHV (AADT*K*D)	2036
Design Speed (mph)	55

Below is the ITE trip generation summary table that was used in combination with the direction factor of U.S. 29 Seminole Trail to determine the PHV right and left turns into the establishment. The OTISS graphs showing the source of this information are included as Figures 2 and 3.

Table 2. ITE trip generation summary table

Use Description	ITE	Qty	AM			PM		
			in	out	Total	in	out	Total
Multifamily Housing	221	100 Units	9	26	35	26	17	43
Right Turn			4			14		
Left Turn			5			12		

The higher number of right turns into River’s Edge was used in the right turn lane warrant analysis, shown in Figure 1 below.



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

**LEGEND**

**PHV**- - Peak Hour Volume (also Design Hourly Volume equivalent)

**Adjustment for Right Turns**

If PHV is not known use formula:  $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.

**FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)**

Figure 1. Warrant for right turn treatment (4-lane highway)

The figure above shows that a taper is required for the site. The right turns were taken from Table 2, and the PHV approach total includes additional traffic that is to be generated by the site.

The following two figures display the source of the estimated trips generated by the River's Edge development.

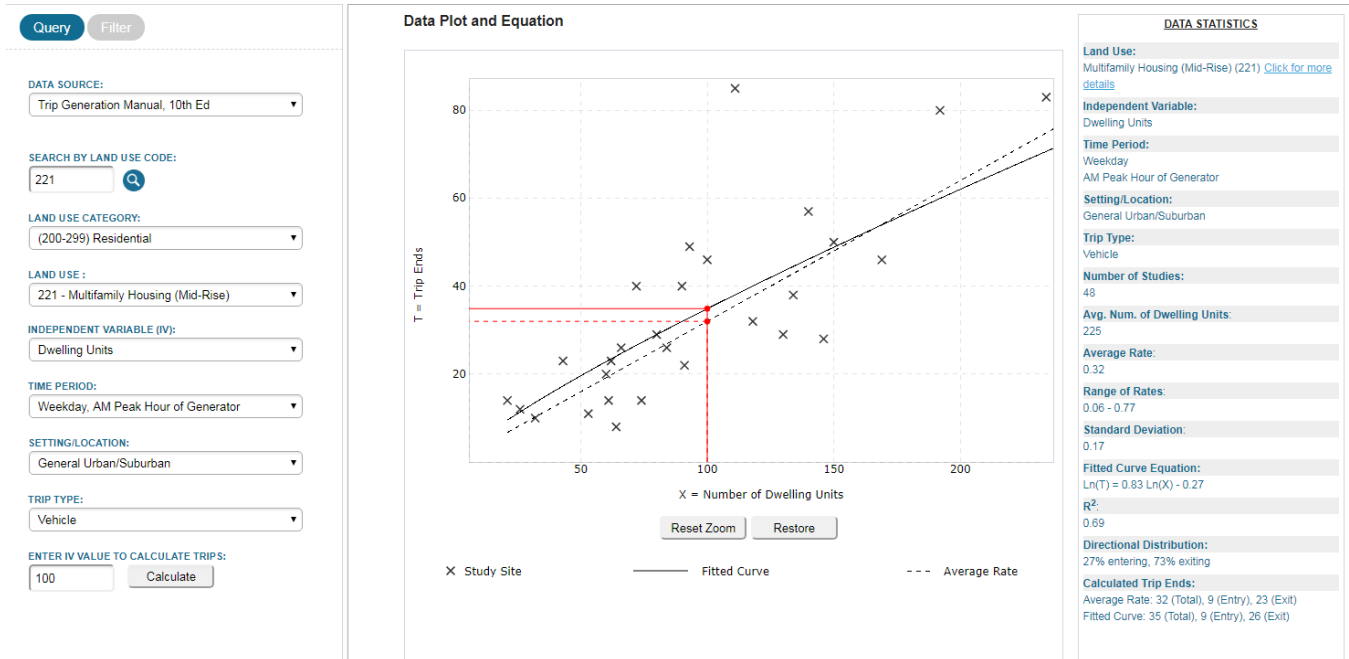


Figure 2. OTISS trip generator A.M. peak hour

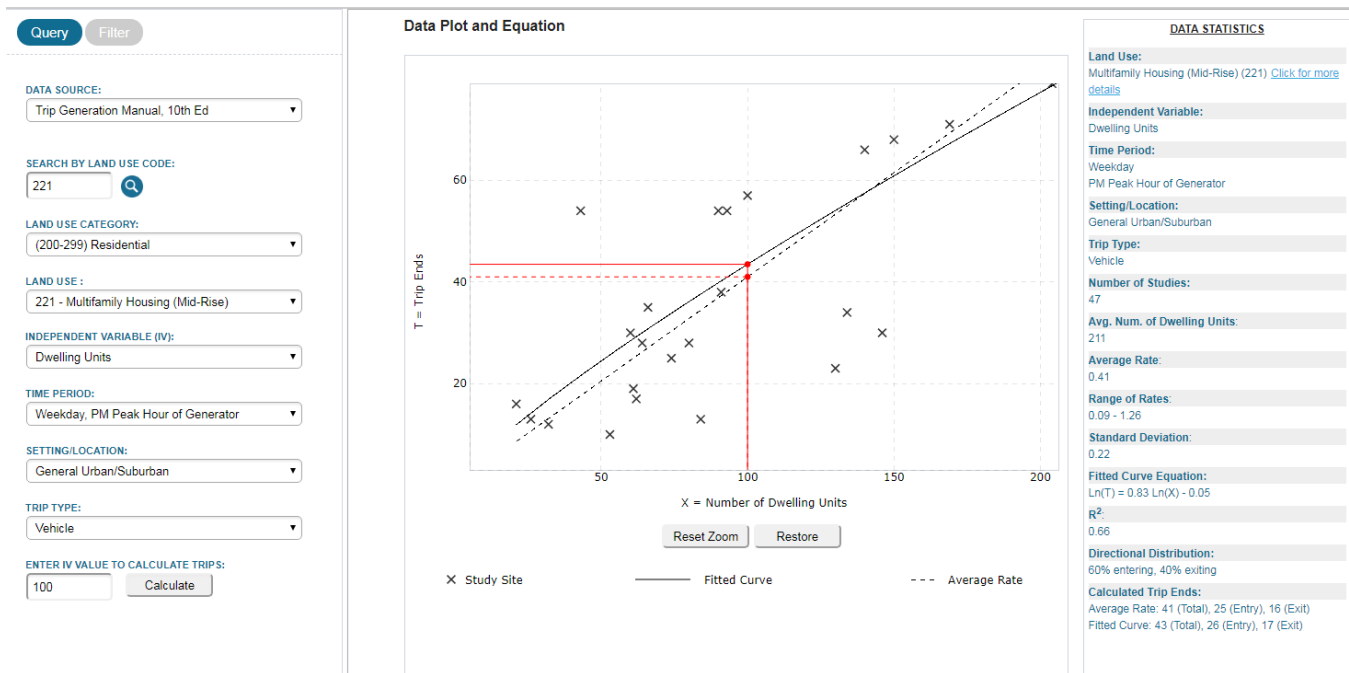


Figure 3. OTISS trip generator P.M. peak hour