

**TECHNICAL MEMORANDUM****Project: Parking Generation Analysis for Proposed Apartments on Willow Lawn Drive**

Date: March 9, 2022

To: Jason Guillot, Thalhimer

From: Kimley Horn and Associates on behalf of Thalhimer  
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**Introduction**

This memorandum has been prepared to summarize the results of a parking generation analysis for a proposed 5-story apartment building along the western side of Willow Lawn Drive between Fitzhugh Street and W Grace Street in Henrico County, Virginia. The proposed apartment building includes 274 total units, consisting of 156 one-bedroom units, 91 two-bedroom units, and 27 three-bedroom units. The planned apartment building development is designed with 419 parking spaces. The proposed development is less than ½ mile from the GRTC Pulse Bus Rapid Transit station at Willow Lawn Drive and Broad Street, and within ¼ mile from the GRTC Willow Lawn Bus Shelter that serves routes throughout the greater Richmond region. Therefore, we do anticipate some residents using transit in lieu of a personal vehicle.

**Parking Requirement Per Henrico County Code**

The Henrico County code requires that 2.0 parking spaces be provided per dwelling unit for proposed multifamily residential developments. Therefore, per Henrico County code, 548 parking spaces are required for the 274 apartment dwelling units. Given the required allotment of 548 parking spaces, there would be a deficit of 129 parking spaces provided for the 274 apartment units, per Henrico County code.

**ITE Parking Generation Analysis**

The Institute of Transportation Engineers (ITE) *Parking Generation*, 5<sup>th</sup> Edition was referenced to determine the peak period parking demand for the proposed townhomes. The parking generation analysis utilized land use code 221 (Multi-Family Mid-Rise Housing) based on the proposed site development. The ITE fitted curve equation for parking demand was used for the 274 dwelling units. As shown in Table 1, calculating parking demand using the ITE fitted curve equation for parking demand per dwelling unit returns a demand for 359 parking spaces.

**Table 1: Weekday Peak Period Parking Demand, per ITE *Parking Generation*, 5th Edition**

| ITE Land Use Description      | ITE Code | Rate of Parking Demand | Dwelling Units | Peak Parking Demand | Parking Spaces Provided on Site | Surplus Parking Spaces |
|-------------------------------|----------|------------------------|----------------|---------------------|---------------------------------|------------------------|
| Multi-Family Mid-Rise Housing | 221      | 1.31 per dwelling unit | 274            | <b>359</b>          | 419                             | 60                     |

Given that the proposed site provides 419 parking spaces, there would be a surplus of 60 parking spaces assuming ITE “per dwelling unit” rates.

The study team then determined the expected parking demand using ITE rates using the number of total bedrooms supplied in the proposed apartment building. The proposed apartment building consists of 419 bedrooms (156 one-bedroom units, 91 two-bedroom units, and 27 three-bedroom units). The use of bedrooms as the independent variable in determining parking demand is supported by the ITE *Parking Generation*, 5<sup>th</sup> Edition, which suggests that the number of bedrooms are likely correlated to the parking demand generated by a residential site. Calculating the expected parking demand by bedroom accounts for the high proportion of proposed one-bedroom dwelling units, which statistically generate a lower parking demand per dwelling unit than two- or three-bedroom dwelling units.

As shown in Table 2, calculating parking generation using the ITE fitted curve equation for parking demand per bedroom returns a demand for 323 parking spaces. In this scenario, there is an anticipated surplus of 96 parking spaces.

**Table 2: Weekday Peak Period Parking Demand, per ITE *Parking Generation*, 5th Edition**

| ITE Land Use Description      | ITE Code | Rate of Parking Demand | Bedrooms | Peak Parking Demand | Parking Spaces Provided | Surplus Parking Spaces |
|-------------------------------|----------|------------------------|----------|---------------------|-------------------------|------------------------|
| Multi-Family Mid-Rise Housing | 221      | 0.77 per bedroom       | 419      | <b>323</b>          | 419                     | <b>96</b>              |

Next, the 85th percentile weekday rate was used to provide a more conservative estimate of the peak parking demand per bedroom. As shown in Table 3, calculating parking generation using the 85th percentile ITE rate for Multi-Family Mid-Rise Housing returns a demand of 365 parking spaces. Even in the conservative scenario, there is an anticipated surplus of 54 parking spaces.

**Table 3: Weekday Peak Period 85<sup>th</sup> Percentile Parking Demand, per ITE *Parking Generation*, 5th Edition**

| ITE Land Use Description      | ITE Code | Rate of Parking Demand | Bedrooms | Peak Parking Demand | Parking Spaces Provided | Surplus Parking Spaces |
|-------------------------------|----------|------------------------|----------|---------------------|-------------------------|------------------------|
| Multi-Family Mid-Rise Housing | 221      | 0.87 per bedroom       | 419      | <b>365</b>          | 419                     | <b>54</b>              |

**Parking Requirement Conclusion**

Based on the findings of the ITE Parking Generation analysis, the proposed 419 parking spaces provided on the site would meet the anticipated parking demand per ITE *Parking Generation*, 5<sup>th</sup> Edition rates, per dwelling unit or per bedroom. Although the proposed site provides 129 parking spaces less than required by Henrico County code, it is anticipated that the peak parking demand will not surpass the proposed 419 spaces. The conservative parking generation scenario using the ITE 85<sup>th</sup> percentile rate per bedroom for Multi-Family Mid-Rise Housing determined a peak parking demand of 365 spaces, resulting in a surplus of 54 spaces.