

SHERRILL BLVD MEDICAL OFFICE
KNOXVILLE, TENNESSEE

TRAFFIC IMPACT STUDY

Submitted to:

Realty Trust Group
2220 Sutherland Avenue
Knoxville, TN 37919



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Summary and Conclusion

This report studied the proposed development of 100,000 square feet of medical office space. This development will be phased over the next few years, but the study commissioned will address the buildout of 100,000 square feet of medical office. Traffic was generated and distributed to the adjacent road network for projected 2019 and 2030 horizon years, consistent with the planned Parkwest Medical Center expansion included in the background traffic conditions.

Traffic projections indicated that the additional trips would be less than 5-percent to study intersections except for the intersections of Cedar Bluff Road at Parkwest Boulevard and Sherrill Boulevard and the intersections of Sherrill Boulevard at Christian Academy Boulevard/Park 40 North Boulevard. The most significant impact will be to the intersection of Sherrill Boulevard and Christian Academy Boulevard, which currently fails during the AM peak hour and will serve the site development to access Sherrill Boulevard and Cedar Bluff Road. For the Parkwest Boulevard intersection with Cedar Bluff Road, current plans by TDOT and the possible geometric improvement for the Parkwest Boulevard approach would increase capacity and reduce the projected delays. For the Parkwest Boulevard approach to Cedar Bluff Road, during the AM peak hour, the thru-right lane currently fails. The current lane assignment is inefficient for the Parkwest Boulevard approach as any right-turn traffic can be impeded during the right-turn overlap with any thru traffic present. With the current split phasing of the intersection, the reassignment of the thru movement to the left-turn lane would permit the greater efficiency of the overlap phase. In addition, the assignment of the right-turn lane to the northbound left-turn phase would permit the left-turn movement to operate with the heavier right turn movement.

The site should have less than a 5-percent impact on the critical peaks for the Sherrill Boulevard intersection with Dutchtown Road. This intersection currently experiences long queues on the Pellissippi Parkway northbound off-ramp during the AM peak hour and poor levels of service for the Sherrill Boulevard through movements. The reassignment of the approach lanes from the off-ramp can mitigate the lower LOS and achieve greater approach efficiency.

In general, the proposed medical office trips, plus anticipated growth of background traffic can be absorbed into the road network without creating unacceptable delays. An annual growth rate of 5-percent over the next few years and 2.5-percent over the next 10-15 years was assumed based on historical trends. The medical office should have minimal impact on study intersections thereby having a limited impact. The proposed medical office has minimal impact on the capacity ratios of many of the study intersections with only a few exceptions. Existing and background conditions did create the need for several possible improvements that would mitigate failing intersections or critical movements.

The medical office development may develop with an initial possible phase of 30,000 square feet with access to Sherrill Boulevard. This study conducted analyses to determine the necessary mitigation of the possible Phase 1 impact. Traffic was generated and assigned for this initial medical office space and the access to Sherrill Boulevard. Access is found to operate at an acceptable level of service for the peak hours. Signalization for the intersection of Sherrill Boulevard and Christian Academy Boulevard/Park 40 North Boulevard is found not warranted with this initial phase. The entering right-turn movement from Sherrill Boulevard to the site should be provided a minimum of a right-turn taper. The initial phase is found to have a minimal impact and can operate with the site access improvements identified in this study.

Recommendations for the site access and improving the traffic conditions in the study area include the following:

Phase 1 (30,000sf) Site Access

1. Provide a 100-foot left-turn lane on Sherrill Boulevard for the proposed unrestricted western access.
2. Provide a minimum of a right-turn taper from Sherril Boulevard to the proposed site access.

Site Buildout (100,000sf) and Study Area

1. Provide a 100-foot right-turn lane from Sherrill Boulevard to the right-turn access driveway.

2. Signalize the intersection of Christian Academy Boulevard with Sherrill Boulevard. Signalization should include a 100-foot westbound left-turn lane.
3. Increase the southbound left-turn storage from Christian Academy Boulevard to eastbound Sherrill Boulevard. The provision of a two-way left-turn on Christian Academy Boulevard between Sherrill Boulevard and the Christian Academy Boulevard site access would provide for this increased storage and accommodate left-turn traffic to the site.
4. Minimize landscaping, using low growing vegetation, and signing at the proposed street accesses to ensure that safe sight distance is provided. The access to Sherrill Boulevard should maintain a minimum 450-foot line of sight. The Christian Academy Boulevard driveway location and right of way clearance should provide a minimum 300-foot line of sight.
5. Signalize the intersection of Christian Academy Boulevard with Dutchtown Road, an existing mitigation recommendation. Reassign the through traffic from Parkwest Boulevard from the shared thru-right-turn lane to the left-turn lane thereby improving the right-turn overlap efficiency.
6. Reassign a southbound right-turn lane from the northbound Pellissippi Parkway off-ramp at Dutchtown Road for a through lane and the existing through lane to a shared left/through lane. This would require an added departure lane on Sherrill Boulevard for approximately 500 feet to match the current 4-lane section of Sherrill Boulevard. Further improvements to address 2030 buildout traffic might include adding a departure lane for the northbound Pellissippi Parkway on-ramp and the reassignment of a left-turn lane to a shared left/through lane on the northbound Sherrill Boulevard approach.
7. Intersection design should conform to the recommended standards and practices of the Tennessee Department of Transportation, American Association of State Highway and Transportation Officials, the Institute of Transportation Engineers, and the Knoxville, Engineering Department and Public Works, Knox County Public Works and Engineering, and the Tennessee Department of Transportation.

The recommended improvements are provided in concept plans prepared for the development and are provided in the Appendix of this report.