CONLEY ASSOCIATES

Memorandum

To: Dennis Ring

From: Leslie Grant, Transportation Engineer

CC: Town of Acton Planning Board

Date: December 5, 2007

Re: The Residences at Quail Ridge

Conley Associates, Inc. has prepared the following memorandum to address a comment raised by the Town of Acton at a hearing on Tuesday, November 27, 2007 regarding queue lengths along Great Road westbound at the intersection of Great Road at Skyline Drive. The Board's specific question was if the queue of vehicles waiting to turn onto Skyline Drive from Great Road would impact operations at the intersection of Great Road at Main Street.

Conley Associates, Inc. reviewed the westbound queue on Great Road at the intersection of Great Road at Skyline Drive in the 2012 Build condition during the weekday AM, weekday PM, and Saturday midday peak hours. Conley Associates, Inc. used the intersection analysis completed for the Planning Board and Engineering Department in November of 2007. This analysis assumed that Skyline Drive would be the only access point for the site, included a higher growth rate, and took no credit for the reduction in the number of holes at the golf course.

At the intersection of Great Road at Skyline Drive, the westbound approach of Great Road consists of a single lane that is shared by left turners and through movements. During the highest hour of traffic (weekday PM peak hour), approximately 54 vehicles are expected to turn left onto Skyline Drive from Great Road westbound. This correlates to approximately one vehicle turning left into Skyline Drive every minute. Each vehicle turning left into Skyline Drive is expected to experience approximately 4 seconds of delay. This means that for the one vehicle turning left into Skyline Drive every minute, 56 out of the 60 seconds each minute will be available for through vehicles on Great Road westbound.

During this same peak hour, Great Road westbound is expected to have 1,229 through vehicles. This correlates to one westbound vehicle traveling through the intersection of Great Road at Skyline Drive every 3 seconds. Therefore it is likely that at any one time, there will only be a queue of one vehicle on Great Road westbound at the intersection of Great Road at Skyline Drive. Even assuming that two left turners pulled up to the intersection of Great Road at Skyline Drive, the queue would only be two vehicles. Assuming 25 feet per vehicle, the backup would only be expected to be 25 or 50 feet (assuming two left turners pulled up at the same time) at any one time during the highest peak hour. Because the distance between the intersection of Great Road at Skyline Drive and Great Road at Main Street is approximately 650 feet, it is not expected that this westbound queue would significantly impact the flow of westbound traffic on Great Road from the intersection of Great Road at Main Street.

214 Cambridge Street, Boston, MA 02114 (617) 742-5111
349 Lakewood Drive, Killington, VT 05751 (802) 345-2321
Fax: (617) 742-5333 www.ConleyAssociates.com

The Planning Board also had a question regarding the queue of vehicles waiting to turn right into Skyline Drive from Great Road during the peak hours. The right turn movement onto Skyline Drive from Great Road is not restricted by any other movement or by stop control. Therefore, vehicles turning right onto Skyline Drive are not required to stop and no queue would be expected on Great Road eastbound at the intersection of Great Road at Skyline Drive.

The Board's other question was regarding the impact of an additional access point to the site along Great Road. The proponent previously proposed an additional access point through the Acorn Park neighborhood, which was strongly opposed by those neighbors. Because of that, access to the project site was restricted to Skyline Drive only.

An additional access point would not reduce the number of vehicles turning left onto Great Road. In addition, as shown in previous analysis, any unsignalized approach to Great Road will operate with lengthy delays (LOS F conditions) due to the vehicles turning left onto Great Road. Regardless, if a second access for the Residences at Quail Ridge through the Great Road Condominiums (168 unit condominium development), as suggested by the Planning Board, were proposed, it would not eliminate the LOS F condition at the site driveway. Rather it would likely exacerbate conditions for the 168 unit owners at the condominiums. The current plan for the Residences at Quail Ridge is to limit the impact of those trips to one location (Skyline Drive) and thus will limit the impact to other area residents, by not adding trips to their unsignalized approaches.

Z:\Projects\1318 Quail Ridge Residential\Docs\1318 Memo to PB 2007-12-05.doc