



Memorandum

To: Jay Szklut
 Town of Belmont
 Date: March 16, 2006

From: Charles Kalauskas, P.E.
 Sam Offei-Addo, P.E.
 Proj. No: 2.8078.10

Re: Proposed Residential Development
 Traffic Impact Study Peer Review

15 Elkins Street
Boston, MA 02127

Tel: 617-896-4300
800-288-8123

Fax: 617-896-4301

BSC Group (BSC) has been retained by the Town of Belmont to perform a review of the traffic analyses for the proposed 300-unit residential apartment development project known as the Residences at Acorn Park. BSC has reviewed a report entitled *Traffic Impact and Access Study, Proposed Residential Development, Belmont MA*, dated January 2006, prepared by Vanasse and Associates Inc., for O'Neil Properties. In addition, a site plan prepared by Rizzo Associates dated December 6, 2006, was reviewed.

Traffic Impact and Access Study Review

General Comments

The traffic study employed traffic engineering methodology that is in general conformance with accepted industry standards. BSC reviewed transportation issues for the previous development proposals for the site, and the new traffic study has incorporated several comments made by BSC during the original and subsequent reviews of the project traffic analyses.

As noted in the traffic study, the change in the proposed development from office/R&D to residential represents a significant decrease in project generated traffic volumes and patterns and consequently the impacts on the local roadway network. Nevertheless, there would be some impacts on traffic operations in the residential neighborhoods of Belmont, and the primary goal of this review is to ensure that these impacts are properly identified and adequately mitigated. Other transportation issues include pedestrian and bicycle safety and access, on site circulation, and connectivity of the project site to neighboring areas in Belmont.

The study area contained in the report included intersections in the Towns of Arlington and Belmont as well as the City of Cambridge. BSC is limiting the review comments to those intersections located in the Town of Belmont.

Specific Comments

BSC offers the following comments based upon the review of the VAI traffic report:

Existing Conditions

The status of Acorn Park Drive as a public roadway or private way is not clear from the submission. This is important because it could affect such considerations such as pedestrian access, and the routes for trip distribution.

private

Existing Traffic Volumes

A comparison between traffic data obtained in 2001 and 2005 for Frontage Road/Acorn Park Drive shows a significant reduction in the number of vehicles turning right from Frontage Road onto Acorn Park Drive during the morning peak hour. Is this due to current vacancies in the Acorn park area and were these taken into account in the study?

will be studied further

Motor Vehicle Crash Data

The report indicates that the crash rate data at the intersection of Acorn Park Drive/Frontage Road has a motor vehicle crash rate (1.05) that exceeds the average MassHighway crash rate for District 4 (0.87), which includes the Town of Belmont. This intersection provides the primary access to the proposed project site. A detailed evaluation of the safety of this intersection is needed to identify the cause of the high crash rate, and if possible, recommend the necessary remedial action.

Absolute # is low but will be looked at further

Existing Public Transportation System

The proposed project site is located within a quarter of a mile of the MBTA Alewife Station, which is the terminal for a number of bus routes, and the Red Line subway as discussed in the traffic report. A bicycle lane is marked on the shoulder of Acorn Park Drive. Connections to the bus terminal and the pedestrian paths in the area should be clearly shown on a map and any safety deficiencies identified. The proponent should also show the locations of existing bus stops with the bus route identified in the vicinity of the project site.

will be identified as site plans developed

Background Traffic

The traffic report contained information on specific development projects by others that would impact traffic in the study area as well as general traffic growth. Proposed roadway improvements on the local roadway network are also included in the report. There is however, no mention of the on-going reconstruction of the entire length of Pleasant Street including two of the intersections being studied.

Trip Generation

Standard data published by the Institute of Transportation Engineers (ITE) was used to determine the number of trips that would be generated by the proposed residential development. The report assumes 95 percent of the trips from the site would be by automobiles with the rest using other means of transportation such as public transit, walking or bicycling. With the proximity of the project to public transit, BSC concurs that the automobile trips appear to be conservative.

Trip Distribution

The report states that the directional distribution of project trips was based on 2000 US Census journey to work data in addition to existing traffic patterns within the area. While BSC concurs with this methodology in general, the specific route assignment should take into consideration travel times between points in the roadway network. It appears that a high proportion (28% out of 32%) of those traveling on Route 2 east from the site are

using Acorn Park Drive onto the Alewife Station off-ramp and through the access roads in the vicinity of the Alewife MBTA station before turning onto Alewife Brook Parkway. Traffic congestion experienced in the Alewife area tends to impact all of the area roadways during the peak hours offering little advantage of one travel route over another. Therefore we expect approximately equal percentages to exit via the signalized intersection of Acorn Park Drive and Frontage Road /Route 2 on ramp, and Acorn Park Drive/Alewife Station Off Ramp. Also, it is not clear from the report if Acorn Park Drive is a public or a private way. What would be the implications for the trip distribution assumptions if Acorn Park Drive were a private roadway and might be closed to through traffic?

Traffic Operation Analysis

- As mentioned earlier, Pleasant Street is under construction and the lane configuration and signal phasing used in the VAI traffic study for the Brighton Street westbound approach at Pleasant Street is incorrect. A separate right-turn lane does not exist today nor would it be in the future that would permit a formal overlapping phase. Right turning traffic on Brighton Street would be able make "right-turn on red" except during the pedestrian phase. The analysis should be revised to reflect the proposed lane and signal configuration for this intersection.
- Brighton Street at Cross Street was recently reconstructed, and the applicant should verify that the roadway widths and the signal timing/phasing used in the report are accurate.
- The traffic report assumes that planned improvements at several of the study area intersections by the Cambridge Discovery Park project would be in place under the future No-Build and Build conditions. The proponent should commit to making these improvements if they are not put on place by Cambridge Discovery Park prior to the issuance of the Certificate of Occupancy.

Proposed Mitigation

- The creation of a new ramp off of Route 2 eastbound with direct access to Acorn Park Drive was proposed in the 2003 Draft Environmental Impact Report (DEIR) filed with the Massachusetts Environmental Protection Act, under the previous office/R&D proposal for the project site. Under the proposal, vehicles would predominantly employ Route 2 as the primary access/egress to the site. The creation of a direct connection from the existing Route 2 eastbound off-ramp to Acorn Park Drive should significantly reduce traffic on Lake Street. This connection was not mentioned in the current report for the residential development. BSC recommends that the Town and the proponent should consider pursuing the construction of this new access ramp. *not in play!*
- Improvements at the Brighton Street and Cross Road intersection should include bicycle accommodation on all the approaches.

- Traffic operations at the intersection of Cross Street and Lake Street currently operate at level of Service F and are expected to be worse in the future build condition if no mitigation measures are implemented. During the earlier review process, it was determined that traffic signals may be warranted at this location and that further discussions would be pursued with the Town and other parties due to the potential for additional cut-through traffic. The proponent and the Town should continue to investigate the traffic signalization at this intersection since traffic operations are expected to worsen in the future.
- The traffic study contains a number of Transportation Demand Management (TDM) measures designed to reduce the number of single occupancy vehicles. While the proponent should be commended for these commitments, more detailed information should be provided to the Town. One of the commitments is to provide shuttle bus/van service between the site and the MBTA's Alewife Station. More information on the frequency and cost to the residents, if it is not a free service, should be provided to the Town for their review. In addition, more specifics should be provided with regards to what the study calls a "safe and inviting pedestrian environment" on site and in front of the site.
- As part of the reconstruction of Pleasant Street, emergency vehicle preemption systems are to be installed at each of the signalized intersections. The proponent should explore with the Town the possibility of installing an emergency preemption system at the intersection of Brighton Street and Cross Street to facilitate fire truck access to the project site.

will be done

Site Plan Review

BSC has reviewed site plan for the project prepared by Rizzo Associates, dated December 6, 2005 with respect traffic issues and offer the following comments:

Pedestrian and Bicycle Access

- The site plan shows a proposed sidewalk along Acorn Park Drive in front of the project site, but not connected to any existing sidewalk. The proposed sidewalk should, at a minimum, be extended to Frontage Road. In addition, handicap access ramps should be shown at the driveway entrances where crosswalks are proposed.
- There are no sidewalks in front of Buildings A and E. Is it the intent to have pedestrian access by way of the sidewalk to the back of the buildings? Please clarify.
- The proponent should show bicycle connections from the project site to other parts of Belmont.
- The location and number of bicycle racks should be shown on the site plan.

Parking and Circulation

- The throat length of the center drive with the angled parking appears to be too short and could result in conflicts with entering and exiting vehicles. Consider removing the two parking spaces nearest to Acorn Park Drive.
- The site plan shows three proposed closely spaced driveways within 300 feet. Acorn Park Road, according to the traffic study would experience a significant increase in traffic from the Cambridge Discovery Park and other developments in the future. The number of driveways and their spacing should be reconsidered to provide safer access to the development and also reduce the number of conflict points along Acorn Park Drive.
- The access to the underground parking garages for Buildings D and E as well as Buildings A and E are very close together. There are several movements into and out of these garages that would be hard to make, especially in the presence of other vehicles. The proponent should re-evaluate the layout at these entrances and if possible provide more separation between them.

General Connections to the Community

The location of the proposed development does not offer convenient pedestrian access to the neighboring areas in Belmont. Pedestrians would have to walk over a long distance via the sidewalk along Frontage Road to get to the neighboring areas in Belmont. The applicant should work with the Town and the Department of Conservation and Recreation to explore the construction of a pedestrian/bicycle path from the site, over the Little River to the Hill Street neighborhood. Such a connection would provide a shorter and more convenient access for residents of the proposed apartment community to the neighboring areas of Belmont. For example the distance for a resident walking to the Belmont High School from the site by way of Frontage Road, Cross Street, and Brighton Street is approximately 7,500 feet. In comparison a path over the Little River through Hill Street to Brighton Street to the High School would be approximately 3,700 feet, only half the distance and time to make this trip.

cc: J. Dirk, VAI