

MEMORANDUM

To: Mr. Peter Erb, Zoning Administrator
Fr: Rick Bryant, Criterion 5 Associates
Re: Proposed Hannaford Bros. Supermarket
Hinesburg, VT
Dt: January 19, 2012

Per your request we are responding to comments regarding the Hannaford project forwarded to us in an email message dated February 4, 2012. Our responses are based on a review of traffic information submitted to the Town of Hinesburg by Lamoureux & Dickinson (L&D) on behalf of the applicant.

Project Description

Hannaford Bros. proposes to construct a 36,783 square foot supermarket on Lot 15 of Commerce Park in Hinesburg, Vermont. Commerce Park is a commercial subdivision located in the fork between VT Route 116 and Mechanicsville Road on the north end of Hinesburg village. Commerce Street was constructed to provide access from both Route 116 and Mechanicsville Road to the lots in Commerce Park. Lot 15 is accessed from Commerce Street via a 50 feet wide by 250 ft long right-of-way (Commerce Street Extension) situated between Lot 12 (Dark Star) and Lot 13 (National Bank of Middlebury). This right-of-way is presently used by the National Bank of Middlebury for its entering traffic.

Outstanding Town Issues

Comments received from you are repeated (and in some cases paraphrased) below. Our responses follow each comment in italics.

1. The trip generation forecasts for the Hannaford store prepared by Lamoureux & Dickinson (L&D) have been questioned by Michael Oman. Are the L&D forecasts accurate?

Mr. Oman offers an alternative method for estimating trip generation for the proposed supermarket. Both methods used (by Oman and L&D) are reasonable. Mr. Oman's method is more conservative and suggests that the proposed store will generate vehicle trips at a rate that exceeds the national average for supermarkets. Significant data has been collected by VTrans that shows that supermarkets in Vermont tend to generate less traffic than observed at stores elsewhere across the country. Accordingly, the lower estimates provided by L&D are likely to prove to be more accurate.

2. Are the most recent submission and presentation by L&D based on the most appropriate analytical methods for this application and Hinesburg?

L&D has evaluated traffic operations in the project study area Manual in all of its early submissions using the SYNCHRO traffic model which is based on the Highway Capacity. One feature of this model is a simulation program that can be used as an aid in evaluating a series of intersections in a corridor. L&D's latest submission reports on findings based on application of the simulation model. Application of the SYNCHRO model and its animation tool is appropriate for this project.

Mr. Oman has suggested that the model applied may require further calibration. L&D noted that when they first applied the traffic model it understated the expected queue lengths on Route 116 during peak hours. In an effort to calibrate the model to reflect local conditions, the assumed saturation flow rate for Route 116 southbound at Charlotte Road (the assumed number of vehicles that could pass through the intersection in one hour of green time) was adjusted downward. This resulted in the model generating queue estimates that are closer to reality.

The action taken by L&D to calibrate the traffic model is reasonable and appropriate for this type of study. Arguably, additional time and effort could be invested to further calibrate the model and achieve a greater degree of accuracy in modeling existing conditions. However, this could prove to be a futile effort since vehicle queues on the roadway vary substantially day-to-day based on the observations of the three traffic engineers engaged in this project. (Which queue length should the model seek to replicate, the 1000 feet queue observed by Engineer A on Tuesday or the 1500 feet queue observed by Engineer B on Wednesday?) At this point the model predicts queues that are in the range of observations made by L&D, Oman and Bryant. No further model calibration is warranted.

3. There is ongoing disagreement about the possible uses and traffic they would generate as a result of the contract Hannaford has with Lantman's. The issue is clouded by the existence of a second commercial structure that Lantman's owns to the south which is permitted to share the existing parking and driveways which has not been included in L&D's analysis.

Any discussion of future uses of the Lantman's site and associated site traffic generation at this time is purely speculative. Consequently, the project review process would be best served by the applicant establishing a formal agreement with the Town limiting the "by right" development of the Lantman's site to uses that will generate 100 or fewer peak hour trips. (The 100 trip figure is the figure assumed by L&D in their mitigation analysis.) Such a restriction would not limit site traffic generation to 100 trips but would create an obligation to mitigate, if warranted, any future site traffic generation in excess of 100 trips.

4. The proposed southbound left-turn lane on Route 116 at Lantman's, as proposed, may cause significant northbound traffic delays during the AM peak hour. The reason for this is that in order to create the southbound left-turn lane the center line of Route 116 will be shifted about four feet to the east. This will effectively eliminate the "de facto" left-turn lane headed northbound. This northbound left-turn lane helps minimize traffic delays heading northbound in the AM peak hour.

The applicant has not quantified the potential negative impacts of the centerline shift on traffic operations. At the same time, the applicant has not quantified any positive benefits associated with the proposed lane shift. In fact, early studies submitted by L&D suggests that there may be little or no positive impacts as it was reported that southbound traffic on Route 116 generally bypasses vehicles waiting to turn left into Lantman's with little or no delay under existing conditions. Absent any analysis demonstrating that the positive impacts associated with this change during the PM peak hour outweigh the negative impacts expected during the AM peak hour, the proposed change should not be implemented. Any such analysis, if provided, should also consider the impacts of the change on bicycle traffic as the shoulder area available to cyclists would be diminished with this change. (This issue is also addressed in a later comment.)

5. The applicant has proposed a change in land use of the Lantman's property as traffic mitigation. Reduced traffic volumes entering and exiting the Lantman's site will improve traffic operations at the Route 116/Charlotte Road intersection. However, there is no legal contract in place to provide a hard cap for future traffic generation.

A binding agreement establishing a cap on site traffic generation for the Lantman's site should be provided by the applicant. (See response to Item #3 above.)

6. Comment on the issues that have been raised by Michael Oman in his traffic review of the project.

The two main points articulated by Mr. Oman at the Development Review Board hearings held for the project relate to calibration of the traffic model and trip generation estimates for the proposed supermarket. These two items have been addressed above. (See responses to Item #1 and #2. A separate discussion of Mr. Oman's comments is provided below.)

7. The diversion of traffic from Route 116 southbound to the CVU road and Mechanicsville Road remains of concern to the DRB. Does the CVU Road/Route 116 intersection analysis accurately predict the amount of traffic that will divert trying to avoid the tie-up to the south and going to Hannaford via CVU Road and then down Mechanicsville Road? The DRB is concerned that this diversion will create a potentially dangerous intersection at the Commerce Street and Mechanicsville Road intersection, especially for pedestrians. Is this the case?

The L&D traffic study correctly anticipates that the Route 116/Commerce Street intersection will operate well below capacity. As such, the study does not assume that any southbound traffic will divert away from this intersection to the CVU Road/Mechanicsville Road intersection. However, some site traffic oriented to the north will pass through the Commerce Street/Mechanicsville Road intersection. An increase in traffic volumes at this location will not necessarily make the intersection less safe. The added vehicular volume, and increased pedestrian volume associated with area residents walking to the proposed supermarket, will result in a greater potential for accident occurrence. The applicant should review the extent and condition of existing and proposed pedestrian accommodations at this intersection to ensure compliance with applicable safety standards. Based on this investigation the applicant should recommend and implement appropriate improvements as a condition of project approval.

8. Other traffic will divert trying to avoid Hinesburg Village altogether in order to get to points south. Should the CVU Road/Mechanicsville Road/Richmond Road four-way intersection, Richmond Road and/or North Road be analyzed even project related traffic increases at this location do not reach the 75 vehicle per hour review threshold applied by VTrans?

The Town of Hinesburg is not obligated to abide by the review criteria used by VTrans and can therefore choose to ignore the 75 trip threshold. However, deviations from accepted standards should be justified, perhaps by citing existing congestion or safety issues. Absent any documented existing congestion or safety issues for this location there is no compelling argument to expand the traffic study area to include this intersection. The L&D study indicates that the project will add only 23 PM peak hour vehicle trips to the CVU Road/Mechanicsville Road/Richmond Road intersection or about one third of the VTrans standard.

If southbound traffic seeks to avoid Hinesburg Village altogether and divert to other routes it would mostly likely be due to increased congestion, queues and delays at the Charlotte Road/Route 166 intersection. This is the principal traffic “bottleneck” in the village. Our peer review comments to date have pressed the applicant to provide traffic mitigation such that traffic operations under future Build peak hour conditions will be better than or equal to future No Build conditions. Mitigation currently proposed by the applicant for the Charlotte Road/Route 116 intersection meets this standard. Consequently, with mitigation in place, traffic congestion will be no worse than projected under No Build conditions and no traffic diversions are likely to occur as a result of the proposed supermarket project. Absent any project induced diversions there is no compelling reason to expand the traffic study area to the CVU Road/Mechanicsville Road/Richmond Road intersection.

9. The Commerce Street westbound right-turn lane at Route 116 should remain exclusively for right-turning traffic. Under the L&D plan shared use of this lane by through and right-turning vehicles is proposed. With this configuration, through traffic waiting for a green signal phase may impede right-turning traffic that might otherwise proceed with little or no delay. This may “solve the peak hour Hannaford issue” but penalize all right-turning traffic during all hours of the day.

Based on a review of the traffic projections provided by L&D, the existing westbound exclusive right-turn lane can remain in place without causing a significant change in peak hour operating conditions relative to the projected Build with Mitigation conditions. Accordingly, the exclusive right-turn lane should remain in place. As noted above, the intersection is projected to operate well below capacity under Build conditions so there is no need to try to capture the nominal increase in capacity that the proposed lane use change would provide.

10. Are the pedestrian crossings and signal timings consistent with the “pedestrian friendly” tenet of the town plan and village growth area zoning?

Existing traffic signals on Route 116 at Commerce Street and at Charlotte Road incorporate exclusive pedestrian walk phases. The durations of the walk phases are sufficient to allow pedestrians to safely cross the intersecting streets. (Walk times are based on an assumed walking speed of four feet per second and the width of the street

crossed.) Mitigation proposed by the applicant at these two intersections will not eliminate or alter the existing signal walk phases. Consequently, the proposed mitigation measures maintain the existing level of “pedestrian friendliness” provided at these intersections with one minor exception. The original mitigation plans call for a lengthening of the signal cycle lengths at these two intersections. Any time added to the cycle length would increase the time that a pedestrian must wait for the “walk” phase to activate. The longer cycle length was intended to reduce vehicular traffic delays but would impose longer delays for pedestrians. As such, the necessity for the longer cycle length should be reconsidered by the applicant.

Improvements proposed at the Charlotte Road/Route 116 intersection also include relocating the sidewalk across the Lantman’s exit driveway. This change is proposed to improve the efficiency of traffic flow on the Lantman’s driveway and to reduce a sight line constraint that puts pedestrians at risk where the sidewalk crosses the driveway. The change in the sidewalk offers both benefits and detriments. Reducing the sight line constraint provides a safer pedestrian environment but the alignment shift creates a longer travel path for pedestrians traveling north-south along the east side of Route 116. The applicant should evaluate means to lessen the abruptness of the proposed “jog” in the sidewalk align to create a smoother and more direct pedestrian pathway.

11. A larger issue is not only can Hannaford’s traffic be accommodated, but what will the overall future traffic situation become. Since we don’t have easy fixes, and anticipate other growth, is some allocation of resources needed and even possible? Not all relatively small projects are as able to fund improvements as the Middlebury Bank did when they installed the traffic lights out of their own pocket. The costs for the required improvements could curtail creation of other local services that the new zoning intended to allow. Are there any intersections where the built result for Hannaford creates situations that are so close to the tipping point a relatively small project could end up being responsible for major improvements?

Standard practice in the preparation of traffic impact studies includes traffic projections to a future design year. Consistent with this practice the L&D study includes a five-year traffic projection. For this projection, traffic from known and approved development projects in the site vicinity is considered as is an overall background growth rate. The overall growth rate applied was three percent and three specific development proposals were considered. Accordingly, the study has accounted for some future development in the Town. It does not account for all potential future development nor is it standard practice to require a developer to study the full development potential of a community.

Some communities address concerns of cumulative impacts through traffic impact fees. A transportation master plan is first prepared to determine the infrastructure required to support full build out of the community. All or a portion of the cost to create this new infrastructure is then allocated to future development projects based on a set formula. Through this system, current projects may help fund improvements that are triggered by future projects.

To our knowledge the Town of Hinesburg does not have an impact fee formula in place. However, the Town may still have the ability to place conditions on a project requiring the applicant to make funds available to fund future improvements. The Town should seek a legal determination relative to this option.

As noted in previous comments, the Mechanicsville Road and Silver Street intersection approaches to Route 116 experience long delays during peak periods and may be candidates for signalization in the future. We have already recommended that the applicant at least be required to monitor traffic conditions at the Mechanicsville Road intersection after the supermarket project is built to reassess the need for signalization.

The applicant has proposed mitigation for the Charlotte Road/Route 116 intersection in the form of signal phasing changes that in combination with an assumed reduction in traffic volumes generated at the Lantman's site will improve traffic operations at the intersection relative to No Build conditions. Examination of the capacity analysis worksheets provided by L&D indicates that the impacts of the supermarket project at this location are fully mitigated by the assumed land use change for the Lantman's site. The signal phasing change further increases the intersection capacity by five percent. In this regard, the phasing change would provide roadway capacity that can support other future development (and/or an increase in future through traffic generated by neighboring communities.) The mitigation proposed at this location can be implemented for a relatively low cost. The Town may want to consider this when evaluating the total mitigation package for the project.

Oman Analytics

Michael Oman of Oman Analytics submitted a memorandum to the Hinesburg DRB dated December 19, 2011 citing what he considers to be outstanding issues regarding the traffic analysis. Our comments with respect to Mr. Oman's issues are provided below.

Calibration and Simulation

Mr. Oman believes that the current traffic model does not adequately replicate existing vehicle queuing conditions observed in the study corridor. As noted above, the model employed is sufficiently accurate for the purpose of this study which is to determine whether or not the project is providing appropriate traffic mitigation. The queues observed on Route 116 southbound during the PM peak hour are being created by the bottleneck at Charlotte Road. The applicant has proposed mitigation to address project impacts at this location.

Future Traffic Conditions

Mr. Oman points out that the project has impacts at the Route 116 intersections with Mechanicsville Road and with Silver Street that are not being mitigated. We concur with this observation and have suggested in previous comments that the applicant offer mitigation for these locations. Future monitoring of traffic operations after the supermarket is built to determine if signal warrants are met is suggested as a minimum commitment.

Trip Generation

Mr. Oman has submitted alternative calculations that suggest a higher trip forecast for the project than assumed in the L&D study. As noted above, we find both methodologies to be valid. Based on trip generation data available from VTrans for other supermarkets in Vermont we have more confidence in the L&D figures.

Northbound Vehicle Queues

Mr. Oman notes that northbound queues on Route 116 at Charlotte Road are predicted to spill back to Silver Street during the PM peak hour and may be even longer during the AM peak hour assuming no reduction in traffic generated at the existing Lantman's site. We concur with this observation but recognize that the observation may be inconsequential if the applicant agrees to put conditions on future Lantman's site traffic generation as noted above.

We asked L&D to provide us with capacity analysis results for AM peak hour conditions at this location. The results show that under No Build and Build with Mitigation conditions the 95th percentile queue on the Route 116 northbound approach to Charlotte Road exceeds 1000 feet and will reach the Silver Street intersection. Accordingly, we are not recommending the proposed centerline shift at the Charlotte Road/Route 116 intersection as it could potentially lengthen the morning northbound queues.

Northbound De Facto Lanes Charlotte Road

Mr. Oman provides arguments as to why the proposed centerline shift on Route 116 at Charlotte Road may impact northbound traffic flows. As discussed above, we concur with his observations and advise against shifting the centerline.

L&D Response

L&D issued a memorandum dated December 11, 2011 responding to the LHI (Rick Bryant) comments dated August 8, 2011. In reviewing the response it appears that L&D misunderstood the general intent of most of our comments. Overall, L&D chose to provide new analyses and/or to defend assumptions in their original analyses. Our goal was to not seek new analyses at this time but to have the applicant consider our suggestions if and when design work begins on the approved traffic mitigation.

Our primary concern at the Commerce Street/Route 116 intersection is that the mitigation design process include a sensitivity analysis to consider: traffic diversions from Mechanicsville Road to Commerce Street; a higher distribution of site traffic oriented to the north; and, full build out of remaining parcels in Commerce Park as may be anticipated under the Act 250 permit for the park. Considering these factors in the design is likely to lead to the provision of turn lanes that are longer than anticipated in the current conceptual plans. The response from L&D already acknowledges that the Commerce Street left-turn lane may be longer than originally anticipated. A longer than anticipated southbound left-turn lane at this location could impact the culvert under Route 116. The applicant should acknowledge this possibility and agree to cover the cost of any required culvert widening.