

Memorandum

To: Michael Andrade, P.E.
From: Jennifer Conley, P.E.
Date: January 30, 2015
Re: Traffic Impact Analysis Peer Review,
Sunset City Proposed Campground and Motocross/Off-road Park
Brookfield Road, Charlton, Massachusetts

Conley Associates, Inc. has been retained to review the traffic analysis provided with the application for the proposed campground and motocross park in Charlton, Massachusetts. Conley Associates, Inc. is in receipt of the Traffic Impact Analysis prepared by Bristol Traffic & Transportation Consulting LLC prepared in January 2015 (TIA). Conley Associates, Inc. has completed a preliminary review and the findings are provided below:

Introduction

The TIA analyzes the traffic impacts of the proposed 150-site campground with motocross track/off-road park. The access is proposed via Brookfield Road across from #216 Brookfield Road. A secondary emergency-only access is proposed via Bond Sawmill Road. The TIA includes only a detailed analysis of the intersection providing access to the site. No offsite intersections are analyzed in the TIA. Based on the distribution presented later in the TIA, 70 percent of site traffic passes through the intersection of Route 49 at Putnam Road/Brookfield Road.

Existing Conditions

The TIA provides a description of Brookfield Road. Conley Associates, Inc. confirmed that Brookfield Road is as described in the TIA. The TIA includes 24-hour traffic volume counts on Brookfield Road. The data shows that 3,900 vehicles travel on Brookfield Road on a weekday, with 350 vehicles traveling during the weekday AM peak hour and 375 vehicles traveling during the weekday PM peak hour. During Saturday, December 20, 2014, the traffic peaked from 12:00 to 1:00 PM when 270 vehicles passed the site. The collection of data the weekend before Christmas raises a concern as traffic patterns may not represent typical conditions (more shopping trips than typical, less trips overall due to people traveling, typical Saturday school age sports events not being held).

The TIA includes seasonal and growth information for a number of permanent count stations located near the site. The permanent count station information included in the appendix was for the time period 2005 to 2009. The outdated data indicated that average month traffic volumes are five percent higher than December traffic volumes and that summer month traffic volumes are nine percent higher than December traffic volumes. Conley Associates, Inc. reviewed the

traffic volume data from 2009 through 2013 and found that the adjustment from December to a summer month is slightly low, but reasonable.

Future Conditions

The text within the TIA indicates that it used a one percent per year traffic growth rate to increase traffic to 2019 conditions, but provided no backup as to why. In fact, the AM peak hour traffic volumes presented in Figure 4 (Future No Build 2019 Weekday Peak Hour Turning Movement Counts) are a total of ten percent higher than those shown in Figure 2 (Existing No Build 2014 Weekday Peak Hour Turning Movement Counts), or the equivalent of two percent per year. Conley Associates, Inc. reviewed the MassDOT permanent count station information included in the appendix as well as the more recent information collected by Conley Associates, Inc. A background growth rate of one percent per year is appropriate if not conservatively high. A two percent per year growth rate is extremely conservative.

The TIA did not include traffic from any other developments planned in the area. A 55 lot subdivision has been proposed on Jennings Road Extension, which is located just east of the site along Brookfield Road. This project will impact traffic along Brookfield Road and was not included in the TIA.

Capacity Analysis

The capacity analysis procedures outlined and used in the TIA follow industry standards. However, intersection analysis where there is no intersection always results in LOS A conditions with zero delay, so the presentation of the results is unnecessary.

Accident Data

The TIA includes a discussion of crash history at Brookfield Road at the site driveway. As should be expected, there were no crashes reported at that location because there is no site developed there at this time and therefore, no conflict exists. The crash data for the remaining length of Brookfield Road is helpful, however, in showing a higher than average accident rate with a high number of crashes in which a vehicle hit a fixed object. These factors may indicate traveling speeds higher than appropriate for the roadway conditions. Conley Associates, Inc. reviewed the crash data provided in the TIA appendix and did not see any indication of a crash frequency in close proximity to the proposed site.

Existing Sight Distance

The TIA provides a discussion on the Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) available at the proposed site driveway location. Based on the posted speed limit and the grades of Brookfield Road at the site location, the TIA calculated the required SSD as approximately 235 feet and the required ISD as 390 feet. The TIA included measurements of the actual field-measured SSD and ISD and indicates that the SSD is met but that the ISD is not met approaching the site from east.

The TIA continues to indicate the 85th percentile speed, that is the speed at which 85 percent of the traffic is traveling below, is 46-47 miles per hour. The TIA did not determine the resulting required SSD, but Conley Associates, Inc. estimates that it would be approximately 360 feet. The TIA measured SSD was only 295 feet approaching the site from the east. The TIA indicates that the posted speed limit should be reduced to 30 miles per hour and that there should be additional police officer presence to encourage compliance with the posted speed. Conley Associates, Inc. finds that the SSD for the posted speed is met at this location and, even at that posted speed, the prevailing speed is significantly higher.

Site Related Traffic

The TIA estimated the impact of the site development by applying trip rates from the Institute of Transportation Engineers (ITE) publication Trip Generation to the 150-site campground. Conley Associates, Inc. verified that the trip rates were properly applied and the estimates for the campground component were estimated properly.

The estimates for the motocross and off road park assumed 30 to 50 vehicles will visit the site on a weekday and 80 to 120 vehicles on a weekend day without a scheduled event and 250 to 300 vehicles during an event weekend day. It is not clear if these figures include all employees, participants and spectators. No other location is provided as backup for these assumptions. Conley Associates, Inc. does not know if these estimates are reasonable for a facility of this type.

Online research does not reveal if this traffic level (including all employee/participant/spectator trips) is appropriate; however, the facilities reviewed online included late afternoon and evening events which would result in different peaking characteristics than is assumed in the TIA. It is likely that the business model for the proposed events has a typical arrival and departing time. Knowing the typical hours of events would result in the likely peak hours of the events. The TIA effectively spreads the arrivals and departures over a twelve hour day. It seems likely that there would be more of a typical peak arrival and departure period on both event days and non-event days.

The TIA assumed that a portion of the attendees would be staying at the campground which Conley Associates, Inc. finds to be reasonable.

The TIA indicates that site trips were distributed based on knowledge of the nearby highway system. Conley Associates, Inc. reviewed the routes that would be taken to the site from nearby population centers and found that the distribution would likely be oriented more heavily to and from the east on Brookfield Road. The TIA assertion that the distribution of trips to and from more regional destinations in western Massachusetts, Connecticut, and eastern Massachusetts would be oriented to and from Route 49 is correct. Conley Associates, Inc. does not know the draw of a facility of this type, so cannot comment on the distribution.

Capacity Analysis

The TIA includes a Build condition capacity analysis for the weekday AM and PM peak hours and weekend AM and PM peak hours. The levels of service under all conditions were LOS B with low delays exiting the site driveway. Conley Associates, Inc. spot-checked the analyses. For the traffic volumes presented in the TIA, the analysis was completed accurately. The site driveway intersection is operating with plenty of excess capacity.

Site Plan

Conley Associates, Inc. reviewed the site plan prepared by Bertin Engineering dated December 9, 2014. The site is served by a 24 foot wide single access driveway from Brookfield Road with separate driveways off of it serving each portion of the site and connecting to each other. The motocross portion of the site is served by approximately 210 parking spaces. The campground portion of the site consists of 150 camping sites as well as approximately 20 parking spaces in the vicinity of the office. Additional information should be provided as to how a spectator will be directed between the two sites.

Conclusions

Conley Associates, Inc. has reviewed the TIA as outlined above. As described, the TIA followed the typical steps of a Traffic Impact Assessment. Conley Associates, Inc. has a number of outstanding concerns as listed below:

1. The data collection taking place on the weekend before Christmas raises a concern because it is unlikely that traffic patterns were representative of other Saturdays. The TIA did account properly for the adjustment of a Saturday in December to a Saturday in the summer.
2. The TIA did not account for other developments proposed in the area, specifically the Jennings Road Extension subdivision.
3. There is a demonstrated safety concern along Brookfield Road, likely due to high speeds. The proposed lowering of the speed limit will probably be ineffective as vehicles are currently traveling over 10 miles per hour over the posted speed limit. Enforcement through police presence and/or speed feedback signs should be considered.
4. The location of the site driveway at the crest of the hill will ensure the longest sight lines along Brookfield Road, but the sight lines will still be below the minimum required for the speed that vehicles are currently traveling. Other access points should be considered, if possible.
5. In the event that another driveway location is not possible, the proponent should consider signage to alert drivers to the presence of their driveway with significant traffic entering Brookfield Road during events and/or in a permanent fashion.
6. Additional information on other facilities should be reviewed regarding number of attendees and distribution over the course of the day. The estimates may be appropriate, but further explanation and backup is required. The proponent should verify that the traffic distribution to the interstate system is appropriate.

7. Based on the trip generation and distribution presented in the TIA, during the peak hour, approximately 40 vehicles are expected to pass through the intersection of Route 49 at Putnam Road/Brookfield Road. In the event that the Town of Charlton has a concern regarding the safety or operation of this location, Conley Associates, Inc. would recommend this intersection be included in the study area for this project. As outlined above, a modification to the trip generation and distribution may be required. Such a modification may alter this recommendation.