



Memorandum

Date: March 6, 2015

To: Roger Fernandes, Town of Hingham

From: John G. Morgan Jr., P.E., PTOE

Re: Traffic Build-Out Analysis
Derby Street Corridor
MassDOT Project #607309
Hingham, MA

CHA has prepared this Memorandum to clarify the details of the “Build-Out” traffic capacity analysis performed to evaluate the effectiveness of the proposed infrastructure improvements for the Derby Street corridor that are included in the Transportation Improvement Program (TIP) project 25% Design. This sensitivity analysis was performed to examine how well the proposed intersections would expect to operate with additional traffic beyond that which was included in the Functional Design Report (FDR) as known developments (Auto dealership at 141 Derby street) and annual background growth (estimated at 1.0% per year compounded). The following is a summary of the assumptions and methodology used in performing the “Build-Out” analysis:

- Assumed a 1.5 million s.f. Business Park to be constructed on land on north side of Derby Street with multiple access points including Derby Street (via Old Derby Street) and Whiting Street in Hingham and Pleasant Street in Weymouth.
- It was estimated that 50% of the traffic from the potential development would access and egress from Derby Street.
- Institute of Transportation Engineers (ITE) Land Use Code 770 Business Park was used to estimate the projected trip generation for the potential development.
- The Build-Out capacity analysis was performed for the same 10-year horizon that was analyzed in the FDR. Although MassDOT recommends planning for a 15 to 25 year horizon for larger projects, a 10-year horizon (7-year minimum) is typically utilized for MassDOT projects involving signalization. To determine projected volumes for the Build-Out analysis, the trips generated by a potential Business Park were added to the 2022 horizon year volumes that were included in the FDR.

- The capacity analysis assumed that a traffic signal would be constructed at the intersection of Derby Street and Old Derby Street for access to the developable land and would be coordinated with the other signals on Derby Street.
- Weekday morning, weekday evening and Saturday mid-day Build-Out analyses were performed. The results of the analyses indicated that all signalized intersections within the project limits would operate at overall LOS “C” or better in each of the peak hour periods.