Devens Traffic Monitoring Program
2012 Biennial Traffic Report
Devens, Massachusetts

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EXECUTIVE SUMMARY

Introduction

This 2012 Traffic Study Report is the ninth in a series of Traffic Monitoring Reports conducted for Devens and the surrounding communities. The purpose of this study is to observe and quantify current traffic patterns in and around Devens that may have changed given the redevelopment of the former military base. This study focuses on comparing current traffic volumes with those projected in the 1994 Environmental Impact Report (EIR) and those observed in previous Reuse Plan Traffic Monitoring Reports.

The study area was identified as part of the EIR and comports with the previous studies, and includes the communities of Shirley, Ayer, Harvard, Lancaster, Lunenburg, Groton, Littleton, and Boxborough.

Data Collection

Traffic data were collected during Spring 2012 in the study area in order to develop an understanding of traffic operations at critical roadways and intersections within the study area. The following data were collected for this study:

- Intersection turning movement and vehicle classification counts at 14 locations outside of Devens during the 7-9 AM and 4-6 PM peak periods. The peak hour traffic volumes occurring during one hour (peak hour) were identified for each intersection for both the morning and evening peak periods. The peak hour traffic volumes were used to perform intersection level-of-service (LOS) capacity analyses.
- Vehicle volume and classification counts were performed for 48 consecutive hours along 14 roadways within Devens and in the surrounding communities. The counts have been used to determine Average Weekday Traffic Volumes on study roadways.
- Vehicle volume and classification counts were performed for seven consecutive days along six roadways in communities surrounding Devens. The counts have been used to determine Average Weekday and Weekend Traffic Volumes on study roadways.
- Devens development data were collected to make trip generation estimates for the planned community. The trip estimates were compared with actual traffic count data to assess the level of Devens' trip making on surrounding roadways compared to typical development levels.

Findings

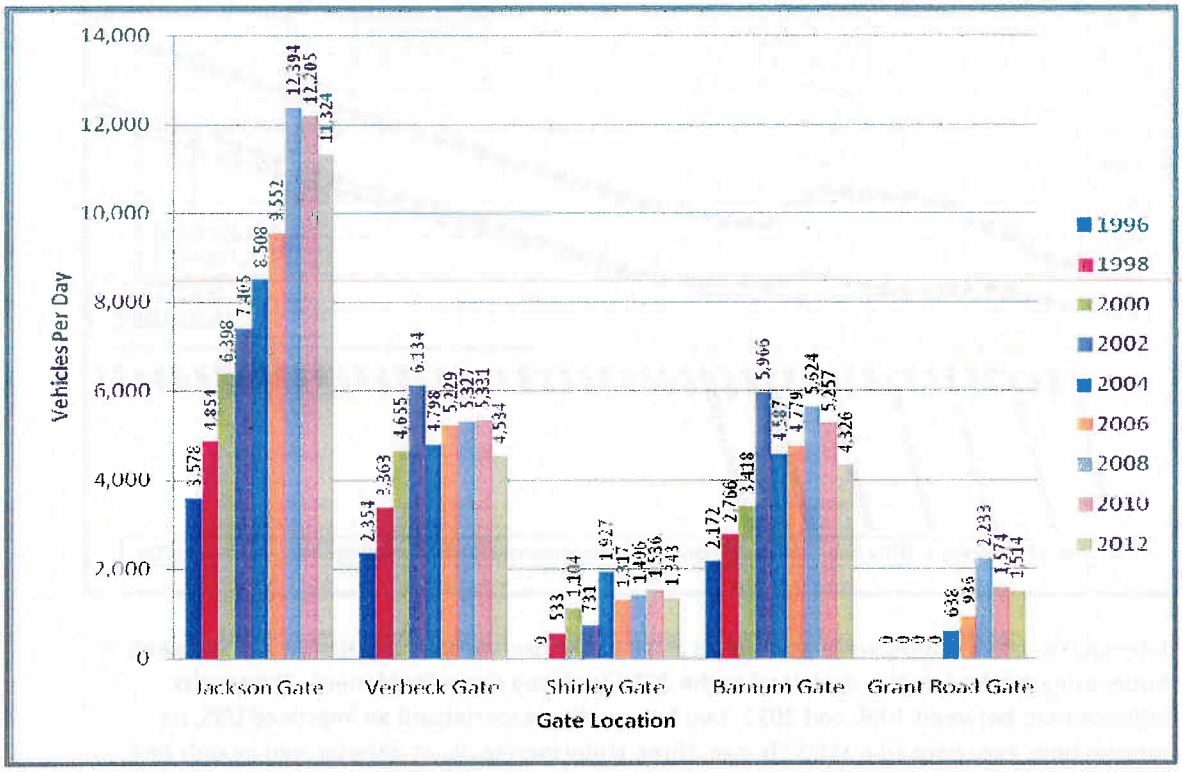
To evaluate the 2012 conditions, the traffic volume data and capacity analysis results were compared to previous reports, including the 2010 and 1996 (baseline) report. The findings include:

- The occupied development in Devens has increased from 3,662,758 square feet in 2010 to 4,139,959 square feet in 2012. Unlike in years past, when increases in occupied development were due to new construction, this year's increase is mainly due to occupation of properties previously unoccupied in 2010.
- Average weekday traffic volumes on the surrounding numbered routes (Routes 2, 2A/110, and 110/111) have increased by 14% since 1996 but are currently decreasing from their peak in 2004

at an average rate of 2.4% per year, indicating that Devens-generated traffic is not significantly affecting volumes on Route 2. Planning studies commonly assume a background growth rate of about 1% per year.

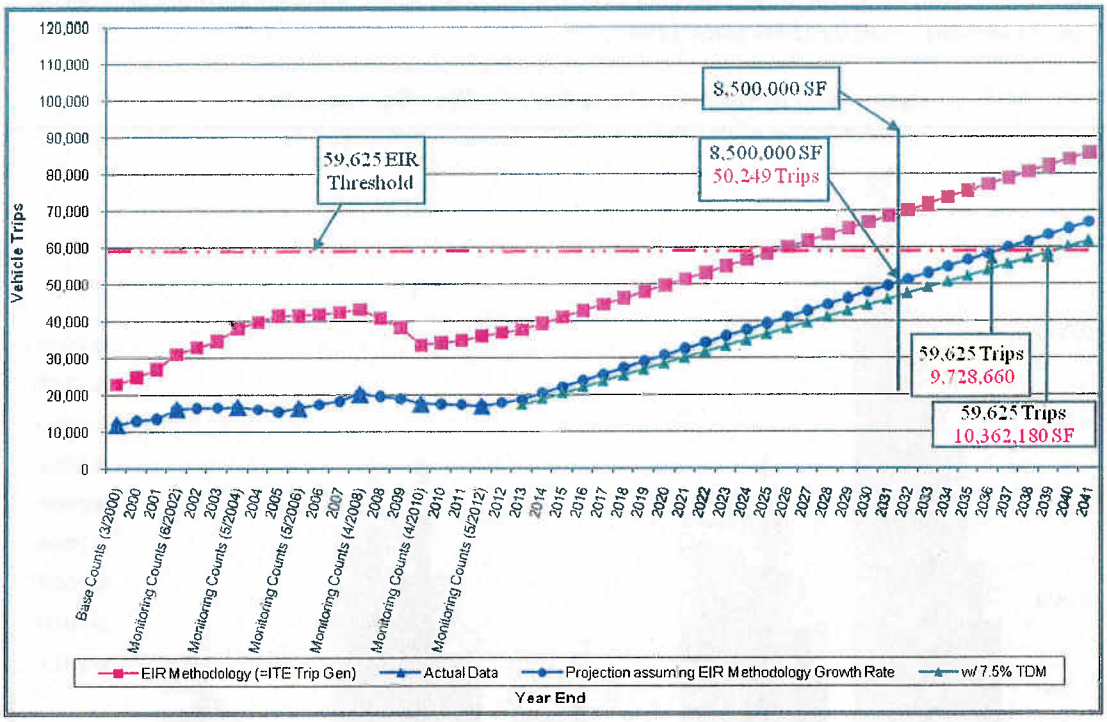
- Average weekday traffic volumes (internal and external) are up a total of 0.5% since 1996 but are currently declining from their 2004 peak at an average rate of 1.4% per year. Over the last two years, the decline has been even steeper: 4% per year.
- Cumulative average weekday traffic volumes on local roadways (outside of Devens) are down 6% since 1996. Volumes peaked in 2004 but have decreased by approximately 2% per year since then. The decline has increased to 3 percent per year from 2010 to 2012. There are some isolated roadways and intersections that have shown an increase in traffic volumes since 2010 (see table 2-3), but, overall, this pattern indicates that Devens-generated traffic is not significantly affecting traffic volumes on local roadways.
- Study intersection traffic volumes (outside of Devens) are down 0.6% in the AM peak and down 8.2% in the PM peak since 1996. During that period, peak traffic volumes have been flat with only minor year-to-year fluctuations. Since the 2010 study, volumes have decreased by 1.7% during the AM peak hour and 3.9% during the PM peak hour.
- Traffic volumes through the five Devens' gates experienced decreased average weekday traffic volumes between 2010 and 2012 (Figure ES-1). Devens' gate average weekday traffic volumes have decreased by about eleven percent over the past two years. Volumes through all Devens' gates have increased by 184% since 1996.

Figure ES-1: Average Weekday Daily Traffic – Devens Gates



- The average total weekday daily truck traffic volumes through all Devens gates have increased by 27 percent since 2010, but remain much lower than volumes observed in 2004/2006/2008. Barnum and Jackson gates continue to serve the highest volumes of heavy vehicles.
- Daily vehicle trips generated by Devens development were estimated using Institute of Transportation Engineers (ITE) trip generation rates. The current 4,139,959 square feet of development in 2012 is estimated to generate about 35,900 daily trips. When compared to the actual trips generated counted through Devens gates (15,668), this indicates that Devens development is generating off-site traffic at a rate of 44 percent of that to a comparable development's tripmaking activity.
- Based on discussions with the MassDevelopment Real Estate Office, much of the remaining development in Devens will consist of smaller research and development land uses. It is assumed that development at Devens will proceed, on average, at 225,000 square feet per year, mainly consisting of research and development type facilities. Based on measured traffic volume data, the current development, and projected development patterns noted above, the EIR trip threshold of 59,625 trips per day would not be reached until 2036 (Figure ES-2). Implementation of traffic demand management techniques (TDM) projects this threshold to be met in 2039.

Figure ES-2: Devens Build-Out Summary by Year - Trips



- Intersection LOS analyses were performed at 14 study intersections for the AM and PM peak hours using methodologies explained in the 2000 *Highway Capacity Manual*. The results indicate that, between 1996 and 2012, two intersection experienced an improved LOS, six intersections experienced no LOS change, three study intersections deteriorated by only one level, and three intersections have deteriorated by more than one level. It should be noted that a portion of this LOS degradation occurred between 2008 and 2012 when the number of trips generated by Devens was decreasing.