

Devens Traffic Monitoring Program

2015 Five-Year Traffic Report

DEVENS, MASSACHUSETTS

December 2015

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Executive Summary

Introduction

The 1995 Devens Final Environmental Impact Report (FEIR), issued by the United States Department of the Army, allowed portions of Fort Devens to be redeveloped as a mixed use planned community in accordance with the Devens Reuse Plan. Massachusetts Development Finance Agency (MassDevelopment, formerly The Massachusetts Land Bank) is the public agency with the exclusive responsibility to maintain, control, and redevelop the Devens community. As part of the 1995 FEIR, MassDevelopment committed to a traffic monitoring program at select locations to identify trends (changes) in traffic patterns and traffic volumes in the adjacent communities.

The Devens Base Reuse Plan limited development to 8.5 million square feet, and a daily vehicle-trip threshold of 59,265 trips was calculated based on projected development levels in the EIR. This study is the fourth 5-year Traffic Monitoring Report.

Data Collection

The study area for this report was defined in the EIR. Devens is a regional enterprise zone established by legislation and comprised of parts of Ayer, Shirley, Harvard, and Lancaster. Surrounding towns of Boxborough, Groton, Littleton, and Lunenburg are included in the study area as potential impact communities.

Traffic data were collected during Spring 2015 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:

- Weekday morning (7-9AM) and weekday afternoon (4-6PM) peak period Turning Movement Counts (TMCs) at thirteen (13) intersections internal to Devens, at ten (10) business driveways, and at fourteen (14) intersections in towns surrounding Devens (external);
- 48-hour and 7-day Automatic Traffic Recorder (ATR) counts at key locations consistent with previous reports, located both within Devens and in the surrounding communities;
- Origin-destination studies at each of the five Devens access/egress gates;
- Transportation surveys of both residents and employees of businesses in Devens;
- Commuter rail transit ridership data from the Massachusetts Bay Transportation Authority (MBTA).

Findings

To evaluate the 2015 conditions, the traffic volume data and the results of the capacity analyses were compared to those from previous reports, including the 2000, 2005, and 2010 years. The findings are summarized below:

- Collectively, the traffic volumes on roadways external to Devens have experienced a decrease of 9% in traffic volumes when compared to the 2010 volumes. Additionally, the 7-day traffic volume trends show that the traffic volumes along Route 2 in the vicinity of Devens appear to have peaked in 2004 and have been steadily declining since. This indicates that while Devens continues to generate more traffic each year, roadways external to Devens are experiencing a decrease in traffic volumes.
- Weekday traffic volumes at all Devens Gates have increased by 11% since 2010 (Figure ES-1). Grant Road Gate has seen the largest increase of 39% (+587 vehicles per day). Prior to 2010, traffic growth had been stabilizing. On a daily basis, the distribution of traffic throughout the gates (which are used to access Devens) has remained constant, with Jackson at 47%, Barnum at 20%, Verbeck at 19%, Grant at 8%, and Shirley at 6%.

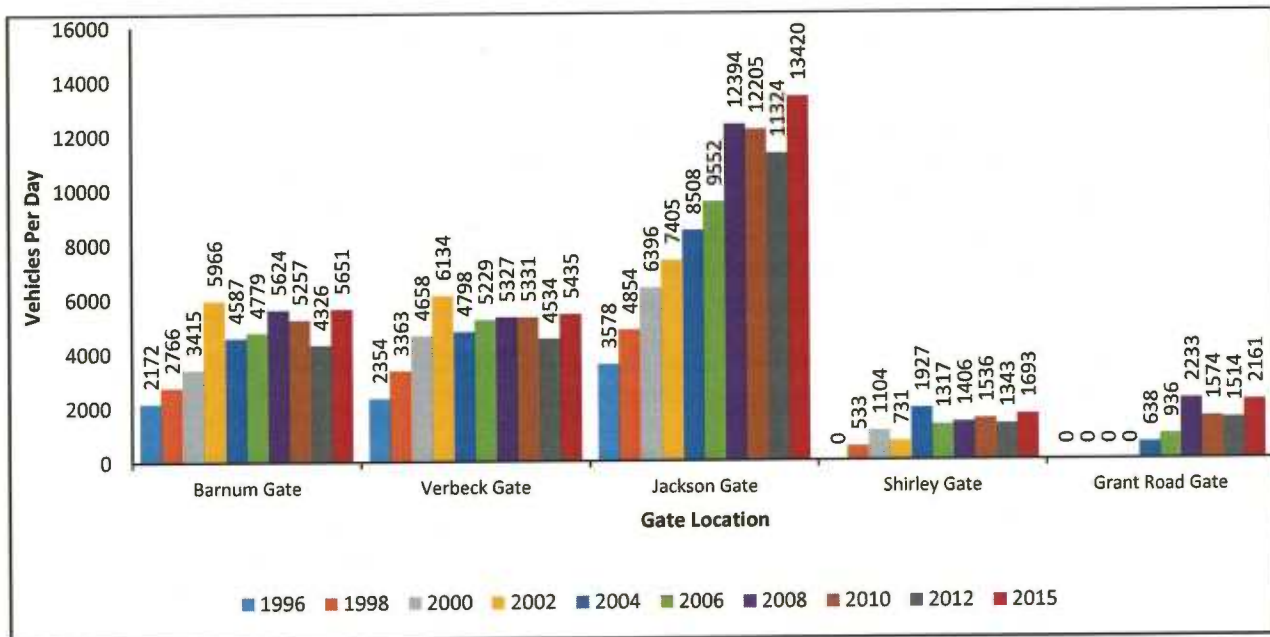


Figure ES-1: Average Weekday Daily Traffic – Devens Gates

- Overall, average weekday daily truck traffic has increased by 55% (+1,149) per day since 2010. 85% of truck traffic passes through Jackson Gate (55%) and Barnum Gate (30%). Truck traffic in Devens has increased at all gates with the exception of Verbeck Gate, which experienced a 51% decrease in truck volume. Grant and Jackson Gates experienced the most significant increases in truck traffic, having seen increases of 123% and 121% respectively.
- It was determined that in 2015, 34 percent of vehicles which enter Devens use Devens roadways as cut-through routes. This percentage has increased by 2 percent from 2010 and by 14 percent from 2005. The total number of cut-through trips decreased between the times

of 9:00 AM and 2:00 PM, suggesting that fewer drivers are using Devens as a cut-through during non-peak hour times than in 2010. This shows that Devens is used as a cut-through mainly by commuters traveling to and from the regional highway network. The highest number of cut-through trips occur during the afternoon peak hour. Overall, cut-through traffic continues to increase every year.

- Transportation surveys prepared by MassDevelopment were distributed to residents and employees of businesses in Devens. The purpose of the surveys was to collect information about commutes to and from Devens. The results of the survey, which were received from 670 people (81 residents and 589 employees) are summarized below:
 - 86 percent drive, 12 percent carpool, 1 percent walk, 1 percent drive to transit, and none travel by bicycle;
 - Jackson Gate continues to be the most utilized gate, used by 54% of those surveyed. This percentage excludes surveys taken by employees of Quiet Logistics (427 of 589 total business surveys), where 98% indicated that they use Barnum Gate to commute to work. Since the gates no longer physically exist, employees may have confused “Barnum Gate” with “Barnum Road.” It is suggested that in the future, the transportation surveys clarify “gate” locations. Due to this discrepancy, figures for results both including and excluding Quiet Logistics employees have been included.
- The Massachusetts Bay Transportation Authority (MBTA) Fitchburg commuter rail line services Devens and the surrounding communities at four stations: Ayer, Shirley, North Leominster, and Fitchburg. Between 2009 and 2013, daily boardings have fluctuated each year. Between 2009 and 2010, ridership decreased by 13%. It then increased by 26% in 2011, but fell by 11% in 2012. The latest MBTA data available (2013) shows an increase of 10% since 2012.
- The occupied development in Devens has increased 1.05 million square feet from 3,662,758 square feet in 2010 to 4,708,099 square feet in 2015.
- Using ITE trip generation rates, it is estimated that existing Devens developments would generate 37,207 vehicle-trips on weekdays. After being adjusted for cut-through trips, the actual traffic counts at the gates indicate an average weekday daily traffic volume of 18,718 vehicle-trips in 2015. This means that Devens is currently generating traffic at a rate of 50% of what ITE projects a comparable development would generate. In 2010, results indicated that Devens was generating traffic at a rate of 53% of what a comparable development would generate.
- Previous reports utilized a yearly build-out projection of 225,000 square feet per year. Conversations with MassDevelopment indicate that this rate should be held for the 2015 5-Year Traffic Monitoring Report. Using this rate, measured traffic volume data, and current development, it is estimated that the 59,625 vehicle-trip threshold would not be reached until 2039, assuming 10,109,900 square feet of occupied development in Devens. With implementation of Traffic Demand Management Strategies reducing traffic volumes by 7.5%, this threshold is not expected to be reached until 2042. (Figure ES-2).

- The 2005 5-year Traffic Monitoring Report estimated that this threshold would be reached in 2014 with 7,360,854 square feet of development. This shows that Devens is currently generating significantly less traffic and being developed at a slower rate than projected. The Scenario 2 build-out limit of 8,500,000 square feet is projected to be reached in 2032, corresponding with an AWDT of 47,390 trips per day based on projections from actual data.

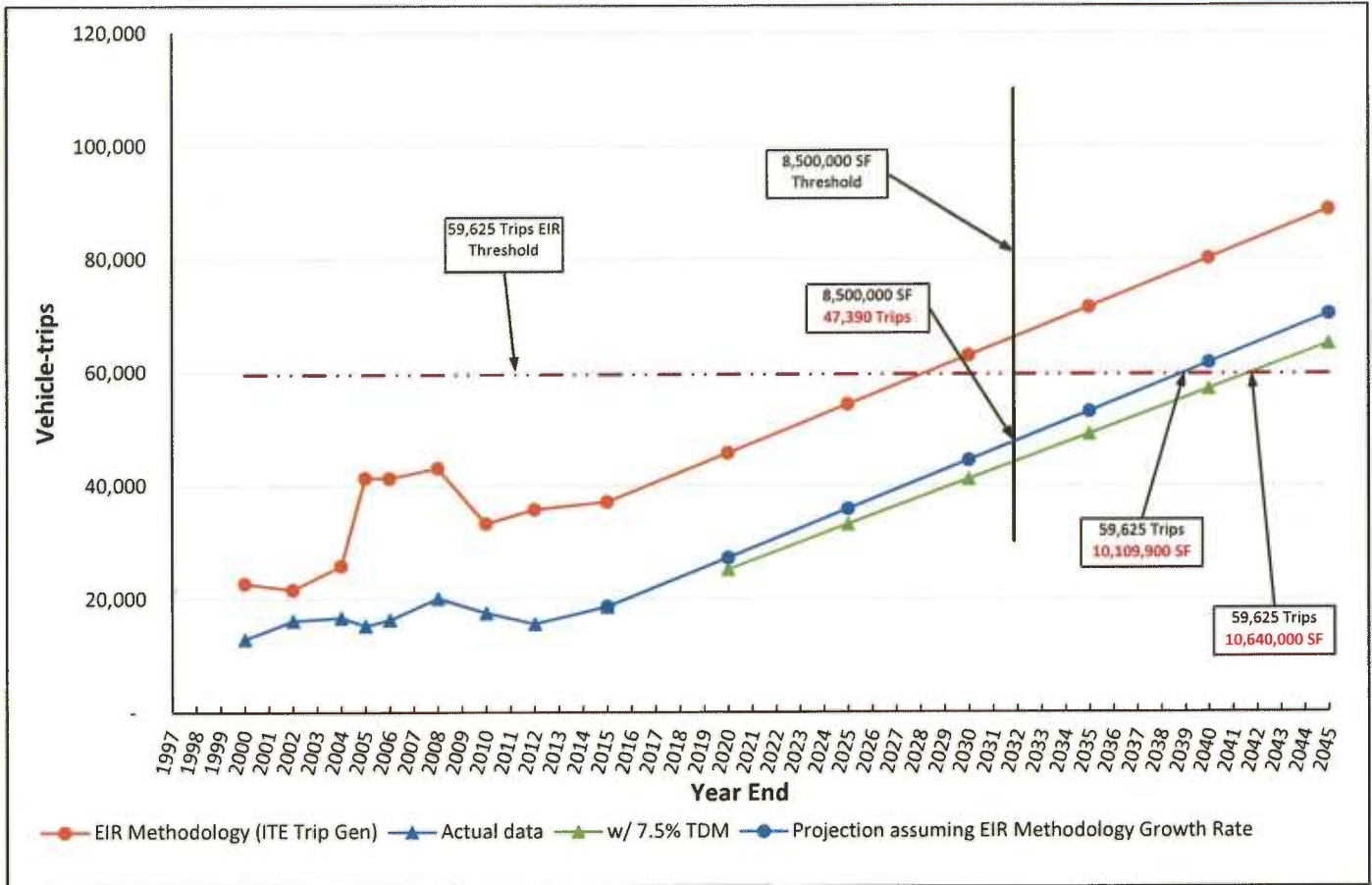


Figure ES-2: Devens Build-Out Summary by Year – Trips

- Intersection Level of Service analyses were performed at fourteen study intersections external to Devens for the morning and evening peak hours using methodologies from the 2000 Highway Capacity Manual. The results indicate that eight of the fourteen analyzed intersections experience no change in level of service from 1996 to 2015. Three study intersections have deteriorated by only one level of service and three study intersections have deteriorated by two or more levels of service.
- Based on the review of the past 20 years of data, traffic in the regional roadway network has remained steady or in some instances decreased. Trips associated with the development of Devens have increased less than anticipated, resulting in minimal impacts on surrounding roadways and intersections.