



Town of Lexington

Frequently Asked Questions: HARTWELL AREA TRAFFIC

The following questions and answers explore the many basics concerning traffic.

1. What does level of service mean?

Level of service is a standard means of measuring the delay a driver experiences when traveling through an intersection. . The standardized measure of level of service ranges from A to F. In a suburban setting the expected functioning level of service range is C-E, which means a delay of 20 to 80 seconds at a traffic light for motorists. Generally, an E represents an intersection operating at capacity or approaching its capacity. Each intersection's level of service is determined by the configuration of the intersection, and the ability of an intersection to accommodate the traffic demand that is placed upon it.

(Source: Massachusetts Highway Department, Project Development and Design Guide, 2006)

2. What is the level of service at Hartwell Avenue/Bedford Street?

This intersection has not had a signal upgrade in more than twenty years. The overall level of service at the jug handle is E in the weekday morning and afternoon peak hours. In the morning the Bedford Street eastbound traffic experiences the longest delay of one minute and thirty seconds and queues of over 800 feet. Bedford Street is a state controlled roadway (Routet 4/225). The level of service rating is based on the current configuration of this intersection and its ability to handle the traffic demand imposed upon it.

(Source: Hartwell Avenue Corridor Study, BSC Group, 2007)

3. What is the level of service at Hartwell Avenue/Maguire Road?

Most commuters on Maguire Road experience level of service F, with delays in excess of two minutes during the morning peak hour. Traffic going straight through on Hartwell Avenue experience very little delay and travel in an almost continuous stream, with few available gaps for Maguire Road traffic in the morning. During the evening, the intersection is usually controlled by a traffic officer, who makes the intersection operate similar to a signalized intersection. The overall level of service during the evening commuter peak hour is C.

The level of service rating is based on the current configuration of this intersection and its ability to handle the demand.

(Source: Hartwell Avenue Corridor Study, BSC Group, 2007)

4. What is the level of service at Hartwell Avenue/Wood Street?

The delay on Wood Street approach is over two minutes during both the weekday morning and evening peak hours. Very long queues are present on Wood Street during the evening peak hour. The level of service is F for this intersection. The level of service rating is based on the current configuration of this intersection and its ability to handle the traffic volume demands.

(Source: Hartwell Avenue Corridor Study, BSC Group, 2007)

5. What can be done to eliminate or cut down on through traffic and reduce the vehicle trips?

Trip reduction measures are used to address congestion and air quality; these are typically demand management actions such as shuttles, carpools, subsidized mass transit, telecommuting, bicycling and staggered work hours.

Far fewer trips are generated by mixed-use and multi-functional land uses. This is due the location of food, retail, and business services within a relatively short walking distance of one another.

. Traffic calming measures, which are physical measures, can reduce speeds and improve driver attentiveness. Traffic management measures, which are turn restrictions and other measures, can redirect or restrict traffic flows.

(Source: Hartwell Avenue Corridor Study, BSC Group, 2007 and Massachusetts Highway Department, Project Development and Design Guide, 2006))

6. What can be done to alleviate the congestion?

The Hartwell Avenue/Bedford Street signals are more than twenty years old and there is no overall bicycle or pedestrian accommodation in the area. The regional roadway of Bedford Street has not been updated to handle the increasing volumes of traffic from Bedford and other communities to the north and west of Lexington. Comparing traffic volume counts from Massachusetts Highway Department at the Hartwell Avenue/Bedford Street intersection show a 7% decrease in volume in the morning and a 18% decrease in the afternoon since 1997. The lane striping of a segment of Hartwell Avenue in October of 2007 has reduced the travel speed on the roadway and created a delineated lane for bicycle commuting. Changing the signal at the Hartwell/Bedford intersection from a fixed-time signal to a vehicle, pedestrian and bicycle-actuated control may add capacity and reduce queues. Installing traffic signals at Hartwell Avenue/Maguire Road and Hartwell Avenue/Wood Street will improve traffic operations at these locations and reduce congestion*

(*Source: Massachusetts Highway Department, Project Development and Design Guide, 2006)

7. Under the existing signals and roadway conditions what can be expected from a re- zoning?

In 2007 the Town's Hartwell Avenue Corridor Study modeled a half percent growth rate compounded annually for ten years. The model assumed maintaining the existing roadway configuration. The model showed Hartwell Avenue at Bedford Street having an overall increase of 18 seconds in the morning and 30 seconds during the evening peak hour respectively, and will continue to operate at level of service F. Wood Street at Hartwell Avenue currently experience long delays and these will increase if no improvements are constructed at this intersection.

(Source: Hartwell Avenue Corridor Study, BSC Group, 2007)

8. What are the current plans for the Hartwell Avenue area roadways?

Currently, the Town has requested State and Federal funds to provide new traffic signals and sidewalks at the intersections of Hartwell/Wood and Hartwell/Maguire. In 1997 plans to upgrade Bedford Street were proposed. These plans involved the widening of Bedford Street to five lane from the I-95 interchange to Hartwell Avenue, the widening of Hartwell Avenue between Bedford Street and Maguire Road, new traffic signals at the intersection of Eldred Street and Bedford Street, upgrades to the traffic signals at the jug handle with a new signal phasing and “loop detectors” on the highways ramps to detect queues and adjust the signal timing accordingly. While there was no bicycle accommodation, there was a provision for a sidewalk. The state was supportive of funding this upgrade when first proposed, but will now require the addition of some form of bicycle accommodation.

(Source: Economic Development Department, Town of Lexington)

9. What are the businesses currently doing to reduce single occupancy travel?

Recently, several of the Hartwell Avenue area businesses and employees of the Hanscom Air Force Base took part in an employee survey to gauge interest and routing for private transit service. Approximately 20% were interested in taking part in a transit service and another 40% had possible interest. The single largest private employer, MIT Lincoln Laboratories, operates shuttles for their employees to Cambridge. Another business operates a shuttle bus between its locations in Waltham and Lexington.

(Source: Economic Development Department, Town of Lexington)

10. How much traffic is generated, on average, by a residential neighborhood?

A neighborhood with 100 houses generates a traffic volume of approximately 960 vehicles per day during the workweek and approximately 1000 vehicle trips per day on the weekends.

(Source: ITE Trip Generation Manual, 2003)