

## 1.221J / 11.527J / ESD.201J Transportation Systems

FALL 2004

### ASSIGNMENT 2A: Transportation System Fundamentals

**Date assigned:** (Lecture 3)

**Date due:** (Lecture 4)

**Value:** **6 points**

The main objective of this assignment is to help you prepare for Lecture 4. Your assignment is to read the cited articles and answer the following questions, to be handed in at the beginning of Lecture 4. You probably want to print a second copy to keep for your use during the Lecture 4 discussion.

1. The Poole article begins by noting that “Driving on the nation’s highways has nearly doubled over the past two decades, while road capacity has increased only 5%. No wonder we are stuck in traffic.” It is not surprising we have increased congestion; the question is how does the highway system function at all?! Discuss. (2 points, one page maximum)
2. Anthony Downs argues it is difficult or impossible to improve congestion simply by building more lanes. In the short run, he says, congestion may be improved but that is a short-lived phenomenon. Discuss what he suggests will happen in the long run. (1 point, one page limit)
3. Most of you know what a high-occupancy vehicle (HOV) lane is. Cars with more than a certain number of occupants (usually 2 or 3) can ride in the HOV lane. Others cannot, so this lane is less congested (in principle). A high-occupancy toll (HOT) lane allows cars with fewer than the required number of occupants to ride in the HOV lane for a **toll**. Discuss how you might decide how to set the toll. Also, discuss the argument postulated by some that HOT lanes should **not** allow high-occupancy vehicles to ride for free. (3 points, two page limit)

As with Assignment 1, clarity and presentation will be factored into the grading of this assignment.

## **Article 1:**

### **Back-seat driver: 'Stuck in Traffic' author makes case for congestion**

**By Tony Bizjak, Sacramento Bee  
August 16, 2004**

## **Article 2:**

### **What the Traffic Will Bear**

**By Robert W. Poole, Jr., Forbes Magazine, Forbes Magazine  
May 10, 2004**