Traffic Control Lessons for High School Students (September 2008)
July 2009 Addendum

In 2009, the Intelligent Traffic Systems Institute (ITS) developed a new traffic game, Gridlock Buster, to expand the reach of the Institute’s work and introduce new audiences to traffic control. This game, while an exciting and unique experience on its own, can also serve as an engaging introduction to the more robust lessons intended for classroom use. Gridlock Buster can be found at the ITS Institute’s web page, http://www.its.umn.edu/trafficcontrolgame.

Students can play the game from the beginning without instruction. Teachers can simply allow them to explore the game and work through its levels. Students can replay levels as they see fit, and can strive to complete levels, increase their point totals, and earn gold medals for achieving certain point thresholds. Some students will be able to finish all eight levels of the game within approximately 30 minutes. Few, if any, will be able to win a gold medal for each level in that amount of time, and they can return to levels to try to improve their scores. Others will struggle to get past “rush hour.” We recommend allowing students approximately 40 minutes to play the game. This does not have to be entirely during class time. Remind students that they can access the game from any computer at any time.

In the higher levels of the game, students gain access to a timing device and an override button to control the intersections. The timing device makes it easy to complete the level, but generally scores will be well below the targets for gold medals. Students should be encouraged to use both the timing and override to maximize their scores. Challenging them to earn the gold medal will provide the students with the best introduction to the engineer’s concept of offset that is described and used in the lessons.
The game serves as an effective introduction to the traffic concepts addressed in the early activities of Lesson 1. From the game, it is recommended that high school students begin Lesson 1, Activity 3. Middle school, and perhaps some high school students may be better off starting with Lesson 1, Activity 2, depending on their comfort with the scientific method and experimental design. A presentation is available to use with students that can assist with the transition by introducing key terms and relating them to the game and the simulation. It is highly recommended that teachers use the presentation or something similar to insure concept transfer.

After students complete Lesson 1, Activity 3, the class can continue with the lessons as originally designed. Teachers may wish to use Gridlock Buster playing time as an incentive for quality work.