**TrafficSim3D**

3D Visualization and Simulation of Microsimulation Traffic Models:

Currently, we use an OpenSceneGraph (OSG) based urban visualization tool (developed in-house at CCR) to meet the needs of urban planners, architects, and transportation officials in the Transportation Design and Planning process. OSG is an open source toolkit that provides the basis for creating graphical applications to view and manipulate a variety of models. We have used OSG to create TrafficSim3D, a software package designed specifically for urban planning. With TrafficSim3D, we are able to import and view existing and proposed structures, terrain and roadways and “fly” around the virtual model interactively and in real time. In addition, we have the capability to toggle on and off different proposed scenarios for any of these entities. We have also recently added the capability to interface TrafficSim3D with an inexpensive driving simulator consisting of a steering console, accelerator pedal, and brake pedal (much as used in computer games). In addition to being able to use the driving simulator to navigate through the simulation, it also provides the driver with feedback in the form of vibration of the steering wheel that occurs, for example, when riding over rough terrain such as rumble strips on the side of the road.

In terms of traffic analysis, TrafficSim3D is able to directly import the output of the traffic micro-simulation package, VISSIM, and display the movement of cars, trucks, pedestrians, bicycles and light rail throughout the traffic network. Indeed, by clicking on a car in the simulation, the user can place them self inside the car and experience the simulation from the driver’s perspective. The simulations created with TrafficSim3D are easily distributed, in the form of an executable file, which is self-installing, and can be downloaded from a website and installed on the user’s PC (Windows, Mac, or Linux OS). It is designed to run on most modern laptops in order to facilitate its use by transportation professionals in public presentations. TrafficSim3D has been designed to be extensible and as such, we can, and often do, add new features as individual projects require them.