THE PROBLEM

The Indiana route 312 corridor in Hammond, Indiana is a state designated commercial truck route through a largely residential area. In partnership with the City of Hammond and Purdue Calumet’s Center for Innovation through Visualization and Simulation (CIVS) the city is in need of traffic simulation and 3D model to create a video showing the impacts of adding roundabouts to the 312 corridor. The model will include before and after conditions focused on the planned roundabout at two main intersections and will extend west to the Illinois state line, and east to Calumet Avenue.

THE PROJECT

This project integrated Geographic Information Systems (GIS) data, traffic simulation, and 3-D Visualization to show the current and planned traffic conditions and visual impacts of adding two roundabouts to the 312 corridor. Traffic data was collected using current conditions and used with VISSIM software to simulate traffic flow for both the current and future conditions. 3-D models of the corridor and surrounding environment was developed with 3DS Max software to generate an animated visualization. These elements were combined with photos and narration to generate a video showcasing the proposed roundabouts.

THE OUTCOME

The project provided a traffic simulation and 3-D visualization of the 312 corridor under current conditions and with the proposed roundabouts. The simulation and visualization are useful for engineering, planning, and public display. The visualization is expected to be shown at public forms to help the people understand the impacts of the corridor redesign on traffic, safety, pollution, and other important elements.

Collaborators: Robert Rescot, Dept. of Civil Engineering, City of Hammond, American Structurepoint
Students: Jichao “Mike” Wang

Fig.1. Route 312 corridor in Hammond
Fig.2. Visualization of current traffic and environment
Fig.3. Visualization and simulated traffic with the proposed roundabout

This research was partially supported by U.S. Department of Energy Grant DE-NA000741 under the administration of the National Nuclear Security Administration.

Center for Innovation Through Visualization and Simulation
Purdue University Calumet
2200 169th Street, Hammond, IN 46323
219-989-2765

www.purduecal.edu/civs civs@purduecal.edu