Cube Dynasim Case Study

OKI Regional Council — Cincinnati, Ohio

Background

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) is the MPO (metropolitan planning organization) for the Cincinnati metropolitan area. Formed in 1964, OKI currently has 103 member agencies, representing 198 area communities in its eight-county, three-state region. OKI approves about $30M annually for regional projects.

As part of a program to improve transportation services in the region, OKI investigated new approaches for explaining the findings and recommendations from traffic study projects to the public. "Traffic models are a very useful tool for planning professionals, but the results of the models aren't easily understood by most citizens or policy makers," says Mark Policinski, OKI's Executive Director. "We wanted to supplement our model with a tool that would generate information that everyone could understand."

Having used Citilabs software for many years, OKI could easily build traditional models with Cube. While that satisfied many needs, Andy Reser, OKI's modeler, needed a tool for sub-area corridor studies—a tool that could show a project's detailed analyses at public hearings. "We use Citilabs Cube Voyager, and have invested years developing our models," reflected Andy.

"After evaluating competing micro-simulation products, we chose Cube Dynasim because it offered a good balance of technology, productivity and visualization. Cube Dynasim's compatibility with our Cube Voyager model saves time and trouble whenever we move data, which happens a lot." As an example, Cube Voyager's assignment process generates path files and trip matrices, which Cube Dynasim inputs directly.

Introducing any new software, especially a new application category like micro-simulation, creates learning-curve issues. The streamlined data transfer process that Cube Dynasim offered made OKI's adoption of micro-simulation software much easier and faster.

Study

OKI used Cube Dynasim to evaluate a proposed new intersection in the "Uptown Corridor," which

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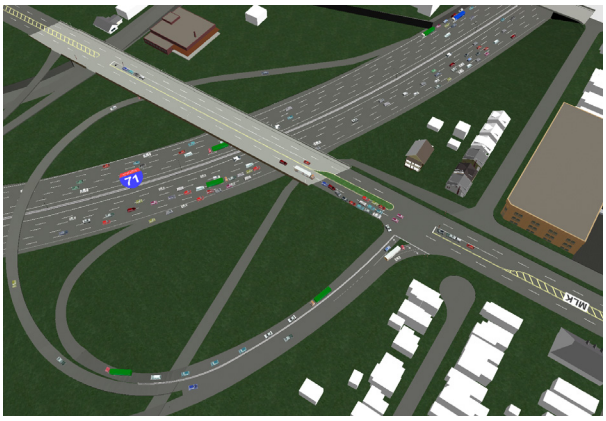
includes access to I-71, to the University of Cincinnati, and to several large hospitals. The corridor provides housing for roughly 70,000 people, and creates about 60,000 jobs. OKI established a corridor advisory committee to direct the study. The committee was composed of elected officials from the affected area, along with business leaders and concerned citizens. OKI wanted to develop and share traffic simulation animations for this key audience.

Cube Dynasim builds its easy-to-understand traffic flow animations based on sound modeling, using pre-existing data sources. OKI used:

- Macro-model — Network and path data
- ArcGIS — Centerline, edge-of-street, building footprint, and layer data
- Sketch-up — 3D building shapes and photos

Results

In this case, the area had significant congestion during both the morning and evening peak periods. In addition, the study area contained several existing major interchanges. The team was very concerned about ensuring that the proposed interchange had a positive effect on neighboring interchanges and intersections. "Among many competing configurations generated by the project team, we chose the most promising new interchange design," Andy Reser elaborated. "We produced a Cube Dynasim animation that included the traffic for the surrounding interchanges and other facilities.



This made our committee members more comfortable with the decision to move forward."

By inserting graphics from several readily-available sources into Cube Dynasim, OKI created easily recognizable animations of traffic, for both the existing network and the proposed new interchange.

"OKI did a remarkable job with their early simulations," observes Matthew Martimo, Citilabs' Director of Traffic Engineering. "They generated some of the most realistic traffic visualizations I have seen. It's particularly impressive because they completed this project with existing staff, supplemented only with an intern familiar with computer graphics systems. For too long, detailed traffic simulation has been an activity that required huge budgets and professionals with years of experience. OKI is illustrating how the use of traffic simulation can enhance planning projects, beyond the more traditional use for analysis of traffic operations."

Future

OKI's future plans for Cube Dynasim include creating traffic simulations for new corridor studies and assisting member governments with local studies. OKI members have already expressed interest in obtaining traffic simulation assistance, especially for local transportation improvements where time and budget constraints do not typically allow for detailed study of preliminary options. For example, OKI might assist local governments that are considering replacing signalized intersections with continuous-flow facilities and roundabouts. OKI modeling staff can provide likely results for those members, helping them decide whether to continue pursuing that option and apply for further funding.

More information

To learn more about OKI's transportation programs, please visit http://www.oki.org/transportation/index.html.

To learn more about Citilabs and Cube Dynasim software, please visit http://www.citilabs.com.