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Virginia Beach Finishes Computer Model to Predict Traffic Effects.

The city has taken a leap forward in its ability to predict the impact of road projects on its traffic network with the completion of a computer model that its developers say is almost unrivaled in the country in scope and precision.

First up for the new tool is another look at the Southeastern Parkway and Greenbelt, a 21-mile highway the city has wanted to build for decades, only to be blocked repeatedly by environmental concerns.

The work is the product of a partnership between the city and Old Dominion University's Center for Innovative Transportation Solutions, which opened in 2012 at Town Center. Mike Robinson, the center's director, told the City Council in a presentation Tuesday that he's aware of only four other U.S. cities with such a comprehensive, detailed model of their roads.

Many large-scale traffic models can't depict the movement of individual cars, replicate the daily ebb and flow of traffic or show how signals contribute to congestion.

The Beach model zooms in much closer with a so-called "microscopic" look at all primary and secondary roads in the city, complete with 371 traffic signals programmed to reflect the same timing patterns that real drivers encounter. Vehicle counts from nearly 500 locations and historic accident trends are incorporated into the model.

One simulation that was played for council members showed tiny yellow vehicles lining up and moving through an intersection at Independence Boulevard. Robinson then showed off a three-dimensional feature with a video in which the perspective swooped down from over The Westin and into a vehicle as it looped through Town Center on tree-lined streets.

Smaller, quicker applications might involve running a query to see how bad congestion will be if a road is closed for a public works project. The longer-term goal is to use the model to study the effect of much larger changes to the city's network.

The Southeastern Parkway analysis will take about 20 months "if it goes exactly as planned," Robinson said.

Five scenarios will be modeled, including a look at what traffic will be like in 2034 if the highway is not built. Robinson said it will entail 45 tests, run about 100 or more times each, a workload that would take about 200 days of nonstop processing time on a high-performance computer.

The combined cost of developing the traffic model and conducting the Southeastern Parkway study is \$740,000, all of which will be reimbursed to the city with federal money, said Deputy City Manager Dave Hansen.

BY DAVE FORSTER, MCCLATCHY NEWS SERVICE / JUNE 11, 2014

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