

Capacity Analysis for Planning of Junctions (CAP-X) Tool

The Federal Highway Administration (FHWA) Office of Operations Research and Development (R&D) has developed an extensive new tool that expands on the previous release of the Alternative Intersection Selection tool in 2009. The Capacity Analysis for Planning of Junctions (CAP-X), as the name suggests, is a tool that can be used to evaluate selected types of innovative junction designs (eight intersections, five interchanges, three roundabouts and two mini-roundabouts) using given peak flow volumes.

The intersections and interchanges are evaluated using the method of critical lane volume summation to provide planning capacity assessment at each crossing. The roundabouts are evaluated using the equations in the Highway Capacity Manual (HCM) 2010 to determine lane capacities, except the three-lane roundabout.

The entire CAP-X tool has been developed using Microsoft Excel; basic knowledge of Excel is necessary to use CAP-X. This workbook is designed to be very simple with only volume counts and number of lanes needed to be entered into the tool. The Excel workbook has 32 spreadsheets that analyze 17 different types of innovative junctions. Some of the key junctions in CAP-X include: displaced left turn, three-lane roundabout, double crossover diamond, and the single point interchange. CAP-X is a simple and cost-effective sketch-planning tool that will help users focus on more effective intersection and interchange designs prior to conducting more demanding traffic simulations.

Users

Traffic Operations Engineers, Highway Design Engineers, Safety Engineers, Traffic Planners, Researchers

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System requirements

9MB hard disk space; Microsoft® Windows® Operating System (XP, 7, or 8); Microsoft Excel® 2010.

Microsoft Excel Viewer

If you do not have Microsoft Excel, [download the viewer](#) for free.



License Agreement

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