

SIDRA INTERSECTION

Two-Day Training Workshop Contents (USA)

Workshop Day 1

Introduction to the Workshop

SIDRA INTERSECTION Introduction

Workshop objectives, software status, principles and philosophy.

SIDRA INTERSECTION User Interface

Projects, Sites, Networks and Routes. Overview of User Interface and Site Input dialogs.. Movement Classes. Site Origin-Destination Movements. Approach and Exit lane numbers. Strip islands and roundabout splitter islands. Volume Data Settings.

Using SIDRA INTERSECTION:

Example - Roundabout with Bus Bypass Lane

Design Life Analysis. Variable Run.
HCM 6, HCM 2010 and SIDRA Standard roundabout capacity models.

Input Parameters

Approach Distance and Exit Distance. Grade data. Approach Short Lane Length. Approach short lane model. Exit Short Lane Length (approach lane underutilisation). Free Queue parameter. Roundabout geometry parameters.

Using SIDRA INTERSECTION:

Example - Signalized Intersection with Bus Lane

Fixed-Time Analysis Method. Flow Scale Analysis. Lane Disciplines.
Input Comparison and Output Comparison.

Network Data

Lane Blockage and Capacity Constraint. Paired Intersections. Network Connections. Network Movements. Extra Bunching.

Using SIDRA INTERSECTION:

Example - Two-Site Network (Signals and Roundabout)

Configure Network. Process. Inspect Network Displays, Network Summary and Site Output for Network (lane blockage, capacity adjustment and capacity constraint effects). Inspect Network Flows (upstream and downstream flows, inflow / outflow). Define Eastbound and Westbound Routes. Inspect Route Displays and Route Summary.

Roundabout Modeling Issues

SIDRA Standard and HCM 6/ HCM 2010 capacity model options. Driver Behaviour Parameters in SIDRA Standard Roundabout Capacity Model. Effect of roundabout geometry and increased demand flow rates on capacity. Capacity constraint. Unbalanced flows. Roundabout metering signals. Roundabout model calibration parameters.

Using SIDRA INTERSECTION:

Example - Stop-Sign Controlled T-Intersection

Apply TWSC Calibration. Pedestrians at sign-controlled intersections. Process and inspect Lane Summary. Compare input and output values of the Follow-up Headway and Critical Gap parameters. Discussion on TWSC parameters.

Modeling of Signalized Intersection Networks

Signal Coordination parameters. Signal platoon model. Platoon dispersion. Effect of midblock inflow. Stopline travel time. Network Timing. Common Control Group dialogs.

Using SIDRA INTERSECTION:

Example - Freeway Diamond Interchange (Signalized)

Special User Movement Classes. Lane Disciplines and Lane Movements. Operation under a single signal controller (Common Control Group). Inspect CCG, Network, and Route output reports and displays.

Discussion

End of Workshop Day 1

Workshop Day 2

Introduction to Workshop Day 2

Using SIDRA INTERSECTION:

Example - Roundabout Interchange

Use templates to form an interchange, use Special Movement Classes

Roundabout Design Review

Discussion: Midblock lane change calculations

Using SIDRA INTERSECTION:

Example - Roundabout with Signalized Pedestrian Crossings

Lane Changes on roundabout exit and the effect of unequal lane use at downstream Site. Lane Changes report.

Using SIDRA INTERSECTION:

Example - Staggered T Roundabouts

Special Movement Classes using Network OD Volumes. Lane Changes with equal and unequal lane use on external approaches.

Using SIDRA INTERSECTION:

Example - Large Network

Form the Network in any possible configuration without connection error.

Using SIDRA INTERSECTION:

Example - Large Network (preset)

Open the preset example and use the **Network Routes** dialog. Inspect Network Summary and Network Displays **By Routes**. Network Cycle Time and Offset calculations.

Using SIDRA INTERSECTION:

Various Network Model Examples

Two-Way Sign Control Between Two Signals (Two-Way Sign Control model; Signal platoons in continuous lanes; Excess Back of Queue for upstream continuous lanes). Staged Crossing at Two-Way Sign Control. Fully Signalized Roundabout. Diverging Diamond Interchange.

Discussion: Model Calibration Overview

Using SIDRA INTERSECTION:

Print All. Report preparation. User Models. Input Comparison and Output Comparison. VOLUMES, ANNUAL SUMS and OUTPUT COMPARISON Utilities.

End of Workshop