

## CHAPTER 22 ROUNDABOUTS

### CONTENTS

<b>1. INTRODUCTION.....</b>	<b>22-1</b>
Chapter Organization.....	22-1
Related HCM Content.....	22-1
<b>2. CONCEPTS .....</b>	<b>22-2</b>
Capacity Concepts .....	22-2
Level-of-Service Criteria .....	22-9
<b>3. MOTORIZED VEHICLE CORE METHODOLOGY .....</b>	<b>22-10</b>
Scope of the Methodology .....	22-10
Required Input Data and Sources.....	22-14
Computational Steps .....	22-15
<b>4. EXTENSION TO THE MOTORIZED VEHICLE METHODOLOGY .....</b>	<b>22-25</b>
Introduction.....	22-25
Calibration of Capacity Models .....	22-25
<b>5. PEDESTRIAN MODE .....</b>	<b>22-26</b>
<b>6. BICYCLE MODE .....</b>	<b>22-27</b>
<b>7. APPLICATIONS.....</b>	<b>22-28</b>
Types of Analysis.....	22-28
Example Problems .....	22-28
Example Results .....	22-28
<b>8. REFERENCES.....</b>	<b>22-30</b>

## LIST OF EXHIBITS

Exhibit 22-1 Analysis on One Roundabout Leg .....	22-3
Exhibit 22-2 Example of One-Lane Entry Conflicted by One Circulating Lane .....	22-4
Exhibit 22-3 Example of Two-Lane Entry Conflicted by One Circulating Lane .....	22-6
Exhibit 22-4 Example of One-Lane Entry Conflicted by Two Circulating Lanes .....	22-6
Exhibit 22-5 Example of Two-Lane Entry Conflicted by Two Circulating Lanes .....	22-7
Exhibit 22-6 Capacity of Single-Lane and Multilane Entries.....	22-7
Exhibit 22-7 Right-Turn Bypass Lanes .....	22-8
Exhibit 22-8 LOS Criteria: Motorized Vehicle Mode.....	22-9
Exhibit 22-9 Required Input Data, Potential Data Sources, and Default Values for Roundabout Motorized Vehicle Analysis.....	22-14
Exhibit 22-10 Roundabout Methodology .....	22-15
Exhibit 22-11 Passenger Car Equivalencies .....	22-16
Exhibit 22-12 Calculation of Circulating Flow .....	22-17
Exhibit 22-13 Calculation of Exiting Flow.....	22-18
Exhibit 22-14 Assumed (de facto) Lane Assignments .....	22-19
Exhibit 22-15 Volume Assignments for Two-Lane Entries.....	22-19
Exhibit 22-16 Capacity Equations for Entry Lanes .....	22-19
Exhibit 22-17 Capacity Equations for Bypass Lanes.....	22-19
Exhibit 22-18 Model of Entry Capacity Adjustment Factor for Pedestrians Crossing a One-Lane Entry (Assuming Pedestrian Priority).....	22-20
Exhibit 22-19 Illustration of Entry Capacity Adjustment Factor for Pedestrians Crossing a One-Lane Entry (Assuming Pedestrian Priority).....	22-20
Exhibit 22-20 Model of Entry Capacity Adjustment Factor for Pedestrians Crossing a Two-Lane Entry (Assuming Pedestrian Priority) .....	22-21
Exhibit 22-21 Illustration of Entry Capacity Adjustment Factor for Pedestrians Crossing a Two-Lane Entry (Assuming Pedestrian Priority).....	22-21
Exhibit 22-22 Illustration of Capacity for Low Entry Flows and High Circulating Flows .....	22-29