

# DESIGNING & IMPLEMENTING



## ROUNDABOUTS

RTE IS CELEBRATING OUR **NEW OFFICE IN ARIZONA**  
BY HOSTING A

**3-DAY SEMINAR ON ROUNDABOUTS & DESIGN**

**AUGUST 29<sup>TH</sup>, 30<sup>TH</sup> AND 31<sup>ST</sup>, 2007**

**LOCATION:**

**PRESCOTT RESORT & CONFERENCE CENTER**

1500 Highway 69, Prescott, AZ, 86301

Hotel Phone & Reservations: 1-800-96PINES

(Limited Number of Special Room Rates Apply at \$60/Night)

**INSTRUCTOR: SCOTT RITCHIE, P.E.**

[WWW.ROUNDABOUTS.US](http://WWW.ROUNDABOUTS.US)



## A NEW TOOL IN OUR TOOLBOX

This three-day seminar/workshop will emphasize both basic and advanced design principles. Attendees will start with understanding roundabouts and basic parameters followed by complex design principles and safety issues. The course will cover a large range of topics that must be addressed by modern roundabout designers to ensure safe and efficient modern roundabout operation.

There will be both hands-on design exercises and full participation of attendees in completing roundabout design concepts where students will have the opportunity to complete sketch plans for several roundabout design types. During the course, specific details in roundabout design will be presented using geometric design principles with respect to both capacity and safety.

Although roundabouts have proven safety and operational benefits, proper planning and engineering design is essential for roundabouts to function correctly. This practical course is your opportunity to understand the pros and cons of roundabouts and their installation, learn specific design skills and issues, and apply roundabout design concepts to projects in your region.

### Course Objectives:

- Understand design principles in creating safe and efficient roundabouts
- Recognize appropriate and inappropriate design details for both single lane and multi-lane roundabouts
- Identify an appropriate location and placement of a roundabout,
- Know how to adequately discuss the operations, design details, and benefits of roundabouts,
- Understand basic and advanced features of the operation, design, and safety elements of roundabouts,
- Learn some of the risks and consequences of poor roundabouts as well as remedies to resolve deficiencies,
- Identify additional resource information,
- Know the fundamentals of engineering and design of roundabouts.

**Target Audiences:** The course is appropriate for state, city, or county staff, local public officials, and any consulting firm personnel who have the responsibility to plan, design, review, recommend, or approve the use of roundabouts on roadways under their jurisdiction, project, or area of practice. The course is geared towards engineers, planners, designers, and managers with varying degrees of skill from novice to advanced roundabout knowledge.

## MODERN ROUNDABOUTS IN OUR FUTURE

The number of modern roundabouts in the United States is rapidly increasing and roundabouts are here to stay as an effective option for intersection control. As stated by a State Department of Transportation on October 3, 2003,

*“The modern roundabout is now recognized nationally as an intersection type and traffic control treatment capable of providing unique and significant operational and safety benefits over a wide range of traffic volumes and conditions.”*

## FOCUS ON ROUNDABOUT PLANNING, DESIGN, & IMPLEMENTATION

Roundabouts have their own unique set of characteristics and implementation impacts. Proper evaluation and comparison as well as public involvement and communication of the roundabout option require a detailed understanding of their planning, design, and implementation. The transportation design references commonly used in the United States address roundabouts in a limited manner. This roundabout training seminar and workshop provides:

- A deeper understanding of the theory of roundabout operational design and safety
- Teaching on key design topics including geometric and non-geometric issues
- Gap theory versus empirical theory (RODEL)
- A summary of key information and errors in the FHWA Guide
- Correct design methods and the results of improperly designed roundabouts
- Extensive roundabout photographs, videos, and designs from the instructor’s research and travels throughout the world
- Opportunities for extensive discussion about roundabout considerations with an experienced roundabout design specialist

## WHAT TO BRING

- Pencil/Pen, Scale, Multi-Circle Template, Compass, Laptop with RODEL Loaded (optional), FHWA Roundabout Guide, Calculator

## COURSE OUTLINE

### DAY 1

- Evolution of Roundabouts
- Geometry and Capacity
- Break
- Circles, Rotaries, and Roundabouts
- Basic Design Safety and Deflection
- Break
- Entry Speed, Path Overlap, Design Vehicles
- Lunch
- Exits Speeds & Path Overlap
- Pedestrians at Roundabouts
- Break
- Hands-On Design Example 1

### DAY 2

- Review Design Example 1
- Deflection & Overlap Review
- Design Tips (+10 Step Design Process)
- Break
- Signing & Lighting
- Lunch
- Striping
- Design Process
- Hands-On Design Example 2 (with RODEL)
- Review

### DAY 3

- FHWA Guide Issues/Errors/Update
- High Speed Approaches at Roundabouts
- Design Example 3 and Discussion
- Implemented Design Examples: Photos & Video
- Lunch
- Implemented Design Examples: Photos & Video
- Public Acceptance
- Review and Discussion

*Note: This sample course outline may change prior to or during the actual seminar/workshop depending on questions, requests, and time available.*

## INSTRUCTOR'S BIOGRAPHY

Scott Ritchie, P.E., serves as the President of Roundabouts & Traffic Engineering (RTE) and specializes in roundabout design and consultation. Mr. Ritchie holds a Bachelor's of Science degree in Civil Engineering from Oregon State University, first and second degrees in military science from the University of Oregon and OSU, and is a Registered Professional Engineer. Mr. Ritchie has been involved with the design, review, modification, evaluation, audit, and presentation of hundreds of roundabouts throughout the United States and Canada. Most of the projects include working for the federal government, state departments, county and city jurisdictions throughout the United States as well as working closely with local civil engineering roadway design firms. In conjunction with his national roundabout projects, Mr. Ritchie has also independently researched, analyzed, and documented hundreds of roundabouts in over a dozen different countries worldwide.

As a roundabout design specialist with over 200 modern roundabout designs in the United States, Scott Ritchie has been formally recognized by both national and local organizations as a roundabout design expert and qualified roundabout instructor of modern roundabouts throughout the United States due to his design experience, knowledge of roundabout theory and working operations, extensive roundabout field research, and his contributions with publications to the modern roundabout. Scott currently provides on-call or continuous working relations for many state and local jurisdictions throughout the United States. He provides full roundabout designs, partial designs or modifications, evaluations, feasibility studies, safety and capacity audits, roundabout design guidelines assistance, roundabout training, and design reviews with respect to the horizontal and vertical geometric design, signing, striping, lighting, landscaping, grading, and drainage of modern roundabouts.

Mr. Ritchie has also been involved with several roundabout design guides and committees and written many roundabout publications for entities such as the Transportation Research Board (TRB), the Institute of Transportation Engineers (ITE), the Manual of Uniform Traffic Control Devices (MUTCD), the National Highway Cooperative Research Program (NCHRP), the FHWA, and others.

### New Contact Information:

**Scott Ritchie, P.E., President  
Roundabouts & Traffic Engineering  
20 Crimson Vista Lane  
Sedona, AZ 86351**

CA: (530) 550-1181 / AZ: (928) 284-0295 (8/15 or later)

E-mail: [SCOTT@ROUNDABOUTS.US](mailto:SCOTT@ROUNDABOUTS.US)

RTE Website: [WWW.ROUNDABOUTS.US](http://WWW.ROUNDABOUTS.US)



**REGISTRATION FORM & FEE**

In order for each attendee to register for this course, please fill out the following registration information and mail this registration page with payment to RTE's new Arizona address below. The fee for this three day course is \$675.00 per participant, which equates to \$225 per day. The seminar times are from 8:00AM (sharp) to 5:00PM (or later) each day with a continental breakfast at 7:30AM; however, please plan on arriving early as to not disturb other participants during the course. Detailed questions and working roundabout designs are invited and encouraged for after-hour discussions.

**SEND REGISTRATION FORM AND PAYMENT TO:**

**ROUNDBABOUTS & TRAFFIC ENGINEERING  
20 CRIMSON VISTA LANE  
SEDONA, AZ 86351**

Note: Cancellations within 14 days prior to the seminar are subject to a \$200 cancellation fee. Substitutions are welcomed at any time. If the workshop becomes full, you will be notified and placed on a waiting list. Should an opening become available, you will be notified.

**REGISTRATION INFORMATION:**

PAYMENT ENCLOSED (CHECK) \_\_\_\_\_

YES, I HAVE INCLUDED \$675.00

Attendee Name: \_\_\_\_\_

Organization or Company: \_\_\_\_\_

Current Title or Position: \_\_\_\_\_

Address: \_\_\_\_\_ Suite# \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ E-Mail: \_\_\_\_\_

The above registration information is required for administration purposes only and will not be distributed.

**Please Note:** All aspects of roundabout design including horizontal geometry, vertical profiles, signing, striping, landscaping, lighting, and construction materials should either be designed by or reviewed by a qualified roundabout specialist despite the attendance of a roundabout training seminar or workshop. Nothing can replace real-world design and field experience.

