

## Roundabout Design Concepts and Guidelines

<b>Day 1: Introduction and Planning</b>		
<p><u>Morning Session:</u> Start: 8:00 a.m. Break: 9:45 -10:00 a.m. Lunch: 11:45 -1:00 p.m.</p> <p><u>Afternoon Session:</u> Start: 1:00 p.m. Break: 2:45 – 3:00 p.m.</p>	<b>Introduction</b>	History Definitions & key dimensions Roundabouts vs. traffic circles Categories of roundabouts
	<b>Safety</b>	U.S. and international safety characteristics Conflicts Prediction models
	<b>Public Issues</b>	Public involvement Legal considerations Education Information/resources available
	<b>Planning</b>	Context Preliminary lane configuration Identify selection criteria Perform analysis Determine space requirements Economic analysis
	<b>Planning Tutorial</b>	Example problem

<b>Day 2: Operations and Design</b>		
<p><u>Morning Session:</u> Start: 8:00 a.m. Break: 10:00 -10:15 a.m. Lunch: 11:45 -1:00 p.m.</p> <p><u>Afternoon Session:</u> Start: 1:00 p.m. Break: 2:45 – 3:00 p.m.</p>	<b>Operational Analysis</b>	Capacity Performance measures Evaluation of existing roundabout
	<b>Operations Tutorial</b>	Example problem
	<b>Geometric Design</b>	Geometric Elements General Design Principles Horizontal Geometry Vehicle Path Radii Single Lane Roundabouts Double Lane Roundabouts Vertical Geometry
	<b>Design Tutorial</b>	Example problems

<b>Day 3: Design and System Effects</b>		
<u>Morning Session:</u> Start: 8:00 a.m. Break: 10:00 -10:15 a.m. Lunch: 11:45 -1:00 p.m.	<b>Multimodal Design</b>	Pedestrians/ADA Bicycles Transit Parking
	<b>Design Tutorial</b>	Group problem
<u>Afternoon Session:</u> Start: 1:00 p.m. Break: 2:45 – 3:00 p.m.	<b>Traffic Design</b>	Traffic Control Signing Pavement Markings Lighting Construction Staging
	<b>Systems Effects</b>	Signals on approaches Closely spaced roundabouts At-grade rail crossings Interchanges Arterial networks
	<b>Software</b>	When and why Different packages available
	<b>Conclusion / Recap</b>	Self evaluation Course evaluation

Course Faculty: Brian L. Ray and Lee A. Rodegerdts

**Brian L. Ray**, P.E., has more than 15 years experience in transportation planning and roadway design and serves as the Functional Design Business Group manager for Kittelson and Associates. He has performed location design and engineering evaluations for a variety of corridor studies and environmental impact review documents across the United States. His design experience includes developing and evaluating conceptual alternatives for freeway, highway, and arterial street systems. His arterial experience includes conventional and modern roundabout intersection design. He has completed a variety of planning projects for rural and urban roadways that have included location studies for new highways and long range improvement plans to upgrade existing arterials, freeways and interchanges. He is a member of the Transportation Research Board (TRB) Geometric Design Committee (A2A02) and routinely conducts training courses on roadway geometric design and modern roundabout design. Mr. Ray teaches Roundabout Design Concepts and Guidelines.

**Lee A. Rodegerdts**, P.E., is a Senior Engineer with Kittelson and Associates, Inc. He has over six years of traffic engineering, transportation planning and research experience. He conducted traffic operations studies for a wide variety of projects, ranging from analysis of design alternatives and the development and implementation of traffic signal timing plans, to the preparation of transportation management plans for several major projects in Portland, Oregon. He is also a key member of a worldwide team to develop a national roundabout guide for the Federal Highway Administration and has provided roundabout planning and design services for public and private clients. Mr. Rodegerdts is a registered civil engineer in California and Oregon. He teaches Roundabout Design Concepts and Guidelines.