



Roundabout Evaluations and Design

An innovative transportation engineering service

Modern roundabouts are circular intersections characterized by yield control at entry, counterclockwise circular flow, and low travel speeds. The low entry and circulating speeds and reduction of conflict points provide a demonstrated safer intersection than other types of at-grade intersections. Since drivers are not required to stop unless conflicting vehicles are present, delay is often less than at other intersection types, particularly during off-peak periods. Even when queues develop, vehicles in the queue continue to move forward which is more tolerable to drivers. Roundabouts also present a method to resolve difficult intersection configurations (skews and more than four legs) and an opportunity to create aesthetically pleasing designs. Hundreds of roundabouts are already in-place throughout the United States and the number of new installations increases every year as planners, engineers, and developers discover the benefits roundabouts offer.



*Roundabout
Simulation of
Manzanita Avenue
in Chico, CA.*



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- **How do you determine if a roundabout is the best solution for an intersection?**

Our evaluations consider the roadway types, the presence of trucks, bicycles, and pedestrians, potential interactions with adjacent intersections, safety, and the operating characteristics of a roundabout versus a signal or stop-control. We often utilize an evaluation matrix to objectively compare several intersection types.

We have prepared many leading-edge visual simulations using VISSIM micro-simulation software. These simulations prove extremely valuable when presenting roundabout concepts to decision makers and skeptical members of the community.

- **Aren't all roundabout designs the same?**

No. Each design is unique to best address the specific intersecting road geometries, design vehicles, and project setting. Expert designers know how to tailor a roundabout design to fit the situation. Knowledge and experience are required to appropriately balance the needs for traffic flow, safety, and accommodation of large vehicles, bicycles, and pedestrians during the design process.

- **How do local agencies view roundabouts?**

It is our experience that most jurisdictions welcome the installation of roundabouts upon learning their benefits and observing successes in other communities. For example, The Town of Truckee, California, was so pleased with roundabouts the agency adopted a policy that roundabouts shall be used instead of traffic signals unless infeasible.

