



Roundabouts, such as this one at the Nice-Lucerne cutoff on Highway 20 in the Clear Lake area, take some getting used to, but motorists usually wind up embracing them. The circular intersections improve traffic flow, reduce delays, and cut emissions due to vehicles not idling at street lights.

Rounding Out a Traffic Strategy

Roundabouts Have Proven Safer Than Traditional Intersections; More Coming

The first thing to know about roundabouts is that they aren't all, well, round. Some are oval. Others are shaped like a raindrop, a dog bone or something similar. Some are simple with a single circular lane around a central island; others are more complex, and might include multiple lanes or a bike path.

No matter their shape or size, Caltrans has been helping design and promote more of them. They exist or are planned in almost every Caltrans regional district. Roundabouts reduce speeds, cut air pollution and fuel consumption, and often complement or are components of programs such as Complete Streets, which seek to provide safe mobility for all types of travelers.

Roundabouts are more common in Europe, where they've been used for generations. In California, the number of roundabouts on the State Highway System increased from 21 in 2014 to 37 in 2017, and dozens more are planned.

The Federal Highway Administration Office of Safety has identified roundabouts as a proven safety

measure. A typical roundabout has eight places where vehicles might collide, compared with 32 "points of conflict" at a traditional four-legged intersection. In roundabouts, none of the conflict points are at right angles, reducing serious "T-bone" accidents so when crashes do occur, they are less likely to cause injury or major property damage.

While roundabouts remain unfamiliar to many Californians, studies show that travelers tend to embrace roundabouts after getting used to them. The Insurance Institute of Highway Safety (IIHS) found in a 2001 survey that, before construction, 31 percent of drivers favored a roundabout, with 41 percent strongly opposed. After driving on the roundabout, 63 percent were in favor with 15 percent strongly opposed.

IIHS, in partnership with the Federal Highway Administration (FHWA) has shown that roundabouts typically achieve improved safety benefits compared with signalized or side-street stop intersections.

By allowing vehicles to move through intersections

National Study Findings

37% Reduction in overall collisions

75% Reduction in injury collisions

40% Reduction in pedestrian collisions

90% Reduction in overall fatalities

without stopping, roundabouts improve traffic flow, significantly reduce traffic delays and decrease pollution and greenhouse gas emissions. The FHWA also found that roundabouts increased traffic capacity by 30 percent to 50 percent compared with signalized intersections.

Roundabouts also can provide an attractive gateway, and, because they slow traffic, help accommodate walking and bicycling. Pedestrians cross only one direction of traffic at a time, and bicyclists can usually ride through a roundabout at a speed similar to vehicles. Many roundabouts on the State Highway System are being designed with wide, multi-use

Roundabouts improve traffic flow and significantly reduce traffic delays and decrease pollution and greenhouse gas emissions by allowing vehicles to move through intersections without stopping.



Studies show that roundabouts, this one at Interstate 5 and Deschutes Road in Anderson, lead to fewer accidents and deaths.

Roundabout Design



paths around the perimeter for bicyclists.

There's also a cost savings advantage: Roundabouts require less maintenance than traffic signals.

In 2013, Caltrans adopted an Intersection Control Evaluation process that helps determine the best solution for any intersection, rather than just automatically placing a signal, as had been done in the past. The process requires all feasible alternatives to be evaluated, and the focus is on performance.

Some circular intersections are intended to accommodate local development. In Hanford (District 6), where a Costco store was being built, a roundabout was designed and built because it was projected to be a better traffic regulator than the upgrade of an existing traffic signal, given the heavy volumes expected.

Caltrans works with local groups on designs of roundabouts. In Tulare County (District 6), Caltrans partnered with the Tule River Indian Reservation to incorporate a basket weave design, and plant deergrass, used for making baskets, in the central island. **MM**

Sources: "California State Highway System Roundabout Inventory Report"; John Y. Liu, Acting Assistant Division Chief, Traffic Operations; Federal Highway Administration.