Introduction
The Park City Intermodal Roundabout is located at a critical junction of State Route 224, Deer Valley Drive, and Marsac Avenue in Park City's Historic Old Town District. The roundabout will replace a large, high-speed, skewed three-legged intersection with an improved higher capacity and pedestrian friendly intersection. Challenges on the project include a short construction season, maintenance of traffic during special events, a bike trail and tunnel, a small creek, steep slopes, old mine tailings in the existing roadbed and a new leg to connect to Park City's new transit center.

The new transit center is located between Main Street and Deer Valley Drive on Swede Alley. The roundabout is called an intermodal roundabout because it is designed to provide access to a bus transit center, a bike trail and pedestrian connections to Old Town's Main Street. Parking is very limited in the old town and walking, biking, and City buses provide viable options to driving for both locals and visitors alike. The transit center will serve as the hub for the many buses serving Park City and nearby areas. The intermodal roundabout helps reduce impacts to the Main Street area by providing a difficult access point with Deer Valley Drive.

The bike trail is called the "Rail Trail" because it replaced the track belonging to the old Rio Grande railway that once hauled silver ore from Park City. Several modes of transportation were used to move the silver ore from the mines. Some of these modes included: mules to haul ore from inside the mines, an aerial tram that carried ore from high on the mountain to the mills below, a slurry pipeline to move the ore to the railhead and finally the train which hauled the ore to smelters off-site.

The City selected a roundabout as the preferred intersection alternative after a lengthy and controversial public input process. Citizen groups and planners focused on preserving the historic character of Old Town while reducing traffic impacts from the buses using the transit center. The new transit center building was designed to fit into the surroundings and the historic architecture of the Old Town.

The design and construction of the transit center and roundabout began in April 1999. Completion is scheduled for the year 2000. The facilities will be an important component of the 2002 Winter Olympics transportation system.
The design of the intermodal roundabout began with a design charette attended by City engineers, Utah Department of Transportation engineers, maintenance personnel, the transit center architect, a landscape architect, and three roadway/traffic engineers. The designers holed up for two days in City Hall located on Marsac Avenue above the intersection being designed. The primary goal was to determine if the roundabout was feasible given the constraints of the location.

**Figure 1: Park City Intermodal Roundabout Design**

The design constraints included:

- right of way,
- steep hillsides on Deer Valley Drive,
- roadway design speeds,
- grades and approach angles of existing roads and the road to the new transit center,
- horizontal and vertical alignment,
- traffic capacity of the design given the design hour traffic volumes,
- the presence of existing retaining walls on both sides of Deer Valley Drive north of the intersection,
- Poison Creek on the west side of Deer Valley Drive,
- Rail Trail (bike trail) through the intersection, and
- a private driveway entering the roundabout at the east leg.

The roundabout has a 180' ICD (Inscribed Circle Diameter) with a 26' wide circulatory roadway. As shown in Figure 1, all entries to the roundabout except for the transit center entry are two-lane entries with westbound Deer Valley Drive and Marsac Avenue flaring from one lane to two lanes at the roundabout. The expected capacity of the roundabout is approximately 5,000 vehicles per hour based on the Rodel model analysis. Given the geometrics provided in the final design, the intersection will operate at a level of service B. The roundabout was designed to allow for a WB-67 design truck to drive the roundabout without leaving the paved area.