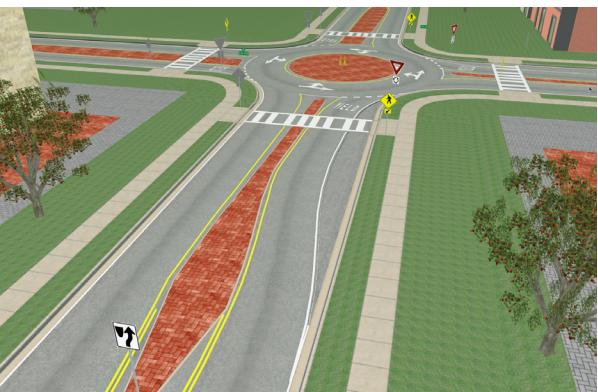


Aerial View (24 ft pavement)

Application Criteria

- Lower speed roads (max 35 mph).
- Total entering intersection volumes from all approaches less than 1,600 veh/hr.
- Junctions of two-lane roads.
- Junctions without nearby commercial entrances.
- Low truck and bus volumes.
- Expected lower construction costs since footprint is within existing travelway boundaries.



Perspective view of a reverse curve splitter island

FHWA Research Contract

The Federal Highway Administration (FHWA) has sponsored a research project, entitled "Field Testing, Marketing, and Crash Analyses for Mini-Roundabouts," Contract No. DTFH61-09-C-00027. The objectives of the contract include before vs. after evaluation of 10 mini-roundabouts to be implemented in the United States. FHWA is looking for Agencies who are willing to fund and construct mini-roundabouts soon. The traffic operational and safety effects of the mini-roundabouts will then be evaluated by the research team for FHWA.



Perspective view of flush approach splitter islands and flush central island with post-mounted delineators

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Mini-Roundabouts



Properly designed modern roundabouts have been demonstrated worldwide to be effective in reducing intersection crashes. One version of roundabouts that has not yet been implemented widely in the U.S. is the mini-roundabout.

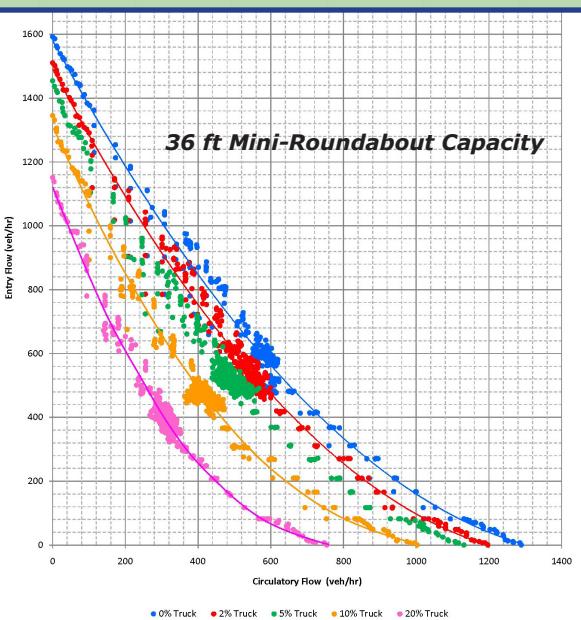
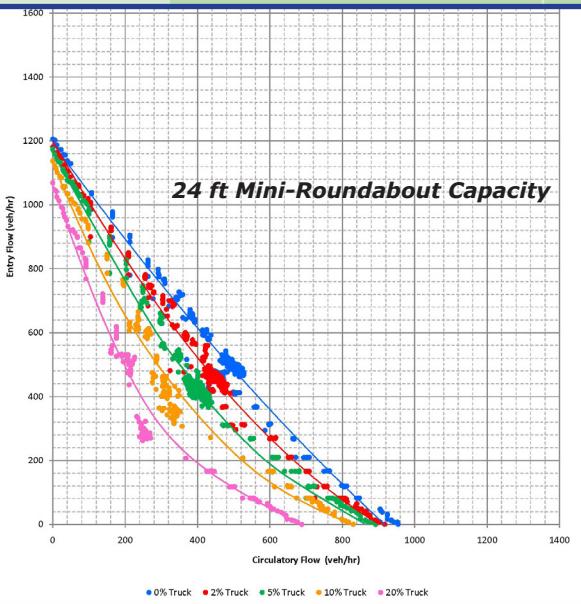
The mini-roundabout features a much smaller inscribed diameter, on the order of 50 to 80 ft, and a relatively small circular central island (e.g., 16 ft to 45 ft diameter) that is traversable. One of the promising aspects of a mini-roundabout is its small footprint and relatively low implementation cost, which allows it to be a viable treatment for urban and suburban intersections of lower speed, two-lane roads. In most cases, mini-roundabouts can fit within existing travelway boundaries. All channelizations will be added within existing boundaries.

The mini-roundabout should be primarily designed for passenger cars that are expected to use the circular roadway around the central island, which can be raised or flush. Buses and trucks may traverse over the central island to complete turning maneuvers due to restricted intersection geometry. For flush central islands, additional physical deterrent boundaries, such as raised pavement markers or rumble strips, are needed to enhance conspicuity and encourage drivers of passenger cars to stay within the circular travelway of the mini-roundabout. It is also desirable to narrow lanes to 10 ft on the approach to a mini-roundabout to ensure a reduction in speed.

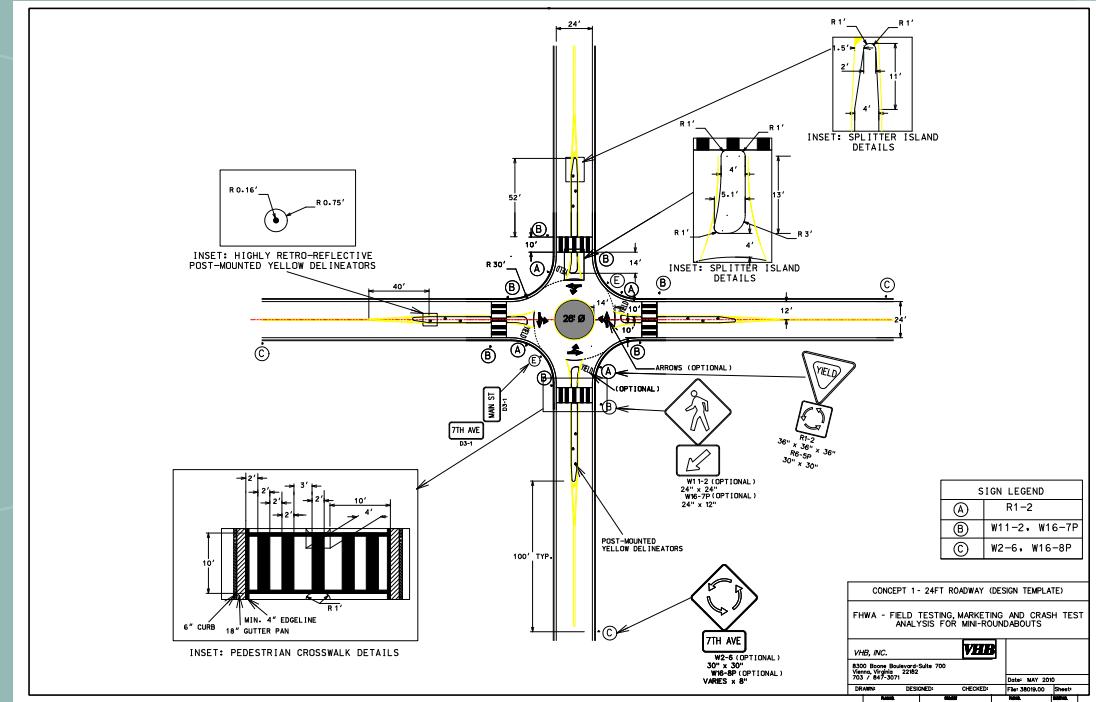


Capacities

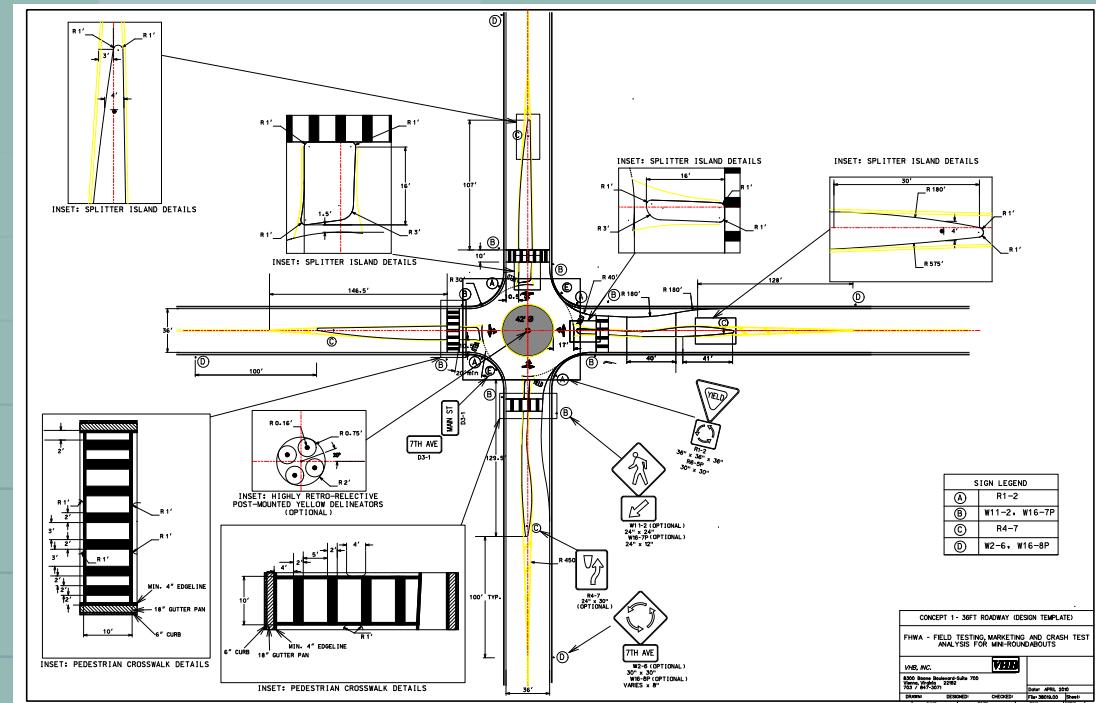
The theoretical relationship between entering and circulating volume, is shown here for a mini-roundabout. The capacity for a mini-roundabout is only slightly less than the capacity of a conventional single-lane roundabout. Simulation results indicate that the capacity is about 1,000 veh/hr entering + circulating volumes for mini-roundabouts at the junction of two 24-ft roadways and 1,200 veh/hr for two 36-ft roadways.



Design Options



Mini-Roundabout Design Template for the Intersection of two 24-ft wide Roadways



Mini-Roundabout Design Template for the Intersection of two 36-ft wide Roadways