

RESEARCH PROBLEM STATEMENT #DC-510

I – Problem Title

Development of Roundabout Geometrics Design Guidance (RD-09)

II – Research Problem Statement

The emergence of roundabout intersections has been rapid here in the U.S. As such, there are several states, including California, that have developed design guidance follow to varying degrees design and planning guidance detailed in the FHWA publication *Roundabouts: An Informational Guide*, published in 2000. In some instances, maximum design entry speeds, sight distances, and circulatory roadway diameter parameters vary among the states, resulting in what may become a lack of consistency among the states.

III – Objective

This research will look at the most critical geometric components of roundabout design, and evaluate consequences of raising design speed minimums and changing other geometric components from those suggested in the *FHWA Guide*.

Roundabouts can address both of the following Department Goals: Safety and Productivity. The introduction of roundabouts may be among the single greatest tools to decrease accident severity and increase safety that the Department has seen in years. This research, in concert with other efforts within the Department and at the national level, can help ascertain whether that potential indeed exists and whether it can be realized.

IV – Background

It is likely that the demand for roundabout design and construction will experience a growth of exponential proportion. There are signs of this likelihood occurring in several states already. It is worth considering developing expertise within the Department to cope with the demand that is expected. This demand may in large part occur from our local partners who have already begun implementing these facilities on their own roadway systems.

V – Statement of Urgency and Benefits

There is a fairly urgent need for this research. Departures from the FHWA Guide are occurring in several other DOT guidelines.

VI – Related Research

NCHRP is in the process of conducting roundabout research on a national level.

VII - Deployment Potential

The research will be highly deployable because of the forecasted demand for roundabout design statewide. There currently is no roundabout research underway within the Department, so this would be considered Stage 1 research.