

NCHRP 20-68 – “US Domestic Scan Program”

Domestic Scan 23-01 Experiences in the Use of Mini and Modular Roundabouts by Highway Agencies

Since being first introduced to U.S. practice in the 1990’s, roundabouts have proven to provide for safer, more efficient movement of vehicles through an intersection and to provide better pedestrian service by limiting the direction of vehicle movement. Design and construction of roundabouts may require additional costs to an owner due to impacts such as additional right of way and utility relocation costs that may not be necessary for intersections with lower traffic volumes. For such situations, innovative agencies have developed the concept of mini roundabouts and modular roundabouts that can be built within the existing right of way for certain situations.

A mini roundabout has a small outside diameter, often limited to the dimensions of the existing intersection, and a traversable center island to allow larger vehicles to travel over its center. A modular roundabout is a mini roundabout with the center island, and perhaps outside borders, made of materials that are anchored or glued into place. Mini and modular roundabouts may offer the benefits of a full-size roundabout such as safety and capacity, but at a significantly reduced cost in the right situation. Agencies known to have built mini and / or modular roundabouts include Washington, Minnesota, Michigan (Washtenaw County), Maryland, Virginia, North Carolina (Division 14), and Georgia.

The objective of the scan is to describe the experiences and lessons learned gained in leading states, such as those listed, that may be valuable to others who may be considering using mini or modular roundabouts. The scan team will meet with innovative agencies that have utilized mini and / or modular roundabouts and discuss their experiences in design, construction, operation, and maintenance of them to include items such as:

- Installation costs,
- Maintenance needs,
- Temporary and permanent traffic control measures,
- Usage on higher-speed roadways,
- Accident history,
- Capacity and traffic efficiency data,
- Truck and bus performance,
- Return on investment, and
- Stakeholder reactions.

This scan is being planned as a Virtual Peer Exchange (Type 4). The scan will entail compilation of effective practices and lessons learned by contributing agencies that can comprise a “toolbox” of resources that agencies seeking to build mini and modular roundabouts on their systems can adapt for their own use. The scan results are likely to be of interest to several of AASHTO’s committees of the Program Delivery and Operations area as well as many highway agencies within the U.S.

Original Scan Proposal Title: 23-02 Recent Progress on Mini- and Modular Roundabouts

| Activity | Planning Milestones (minimum months prior to scan) | <p style="text-align: center; color: red;">Tentative Schedule - Scan # 23-01</p> <p style="text-align: center;">Experiences in the Use of Mini and Modular Roundabouts by Highway Agencies</p> |
|-------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chairs and Team Members Identified | D-5.5 | April – June 2023 |
| SME Selected | D-5 | July 2023 |
| Desk Scan Completed | D-3.5 | August – September 2023 |
| Organizational Meeting Held | D-3.5 | August – September 2023 |
| Host States Confirmed | D-3 | October 2023 |
| Draft Agenda for Virtual Scan Drafted and Confirmed | D-.75 | November 2023 |
| Briefing Materials Distributed | D-.25 | December 2023 |
| Prescan Conference Call Held | D-.25 | December 2023 |
| Scan Conducted | D | December 2023 |
| Thank You Letters Sent to Hosts | D+.25 | December 2023 |
| Draft PowerPoint submitted by SME | D+.5 | January 2024 |
| Final PowerPoint Submitted by SME | D+1 | January 2024 |
| Draft Report Delivered to NCHRP and Panel | D+3 | March 2024 |
| Final Report Delivered to NCHRP | D+5 | May 2024 |
| Dissemination and Implementation of the scan findings | | <p style="text-align: center;">December 2023 – December 2028</p> <p style="text-align: center;">(The process may take 3-5 years after the scan until the ideas are “anchored” in organizational programs or projects in FHWA, AASHTO, NCHRP, and/or industry)</p> |