ROUNDABOUT DESIGN CRITERIA FORM

Project Data			
Project Number		Federal Aid Project Number	
Project Title			
Roundabout Type		County	
Road Names			

Design Parameters						
	Preferred / Min. Value	NB	SB	EB	WB	Leg 5
Design Vehicle *(DGM 1-26)*	WB-40 / Bus-45					
Check Vehicle *(DGM 1-26)*	WB-62 / WB-67					
Approach Roadway Speed						
Inscribed Circle Diameter (ICD) *(Exhibit 10.3)*	Mini: 45-90 ft Compact: 60–120 ft Single: 90-180 ft Multilane: 135-180 ft					
Circulatory Roadway Width[1] *(10.6.6, 10.7.5)*	Single: 16-20 ft Multilane: 14-16 ft per lane					
Entry Radii *(10.6.4, 10.7.5)*	Single: 50-100 ft Multilane >65 ft					
Entry Width[1] *(10.6.4, 10.7.5)*	Single: 14-18 ft Multilane 12-15 ft per lane					
Exit Radii *(10.6.5, 10.7.5)*	Single: 200-400 ft (Min 100ft)					
Exit Width *(10.6.5)*	Single: 18-20 ft					
Splitter Island Length[2] *(10.6.2)*	>100 ft, (Min 50ft)					
Splitter Island Width *(10.4.7)*	Min. 6 ft at Ped Crossing Min 8 ft w/ TDI					
Crosswalk Location *(10.4.7)*	Min 20 ft from circulatory roadway					
Buffer Width for SUP / Sidewalk *(10.4.2)*	5 ft (Min 2 ft)					
Bicycle Ramp Locations *(10.4.4)*	50-200 ft before crosswalk					
High Speed Approaches (≥45MPH)						
Deceleration Length *(10.14.2)*						
Splitter Island Length *(10.14.2)*	150-200ft					
Additional Approach Radii *(10.14.3)*						
Performance Checks						
Stopping Sight Distance *(9.5.1)*						
Intersection Sight Distance *(9.5.2)*	Eqn 9.11 & 9.12					
View Angles *(9.5.4)*	75°-105°					

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Fastest Path											
Geometric Speeds	Suggested Speed Ranges[4]	NB		SB		EB		WB		Leg 5	
		FT	MPH	FT	MPH	FT	MPH	FT	MPH	FT	MPH
R1, Entry path, Radius (ft) & Speed (mph) *(9.4)*	15 – 25 mph										
R2, Circulating Path, Radius (ft) & Speed (mph) *(9.4)*	15 – 25 mph										
R3, Exit Path, Radius (ft) & Speed (mph) *(9.4)*	< 25 mph (with peds) 30 – 35 mph (no peds)										
R4, Left Turn Path, Radius (ft) & Speed (mph) *(9.4)*	10 – 20 mph										
R5, Right Turn Path, Radius (ft) & Speed (mph) *(9.4)*	15 – 25 mph										
Speed Differential[3] *(9.4)*	10 - 15mph										

Verification of Completeness			
Designer Approval:		Date	
Project Manager Approval:		Date	

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The intent of this document is to track the design criteria used while designing roundabouts. It is the Engineer of Record's responsibility to ensure their design meets all applicable design guidance and is context sensitive. The Preferred / Min. values come directly from DGM 1-26 and NCHRP Report 1043. Every effort shall be made to achieve the Preferred / Min values. However, it is understood that not every criterion will apply, or the Preferred / Min. values be able to be met on every project. The NCHRP Report 1043 reference sections are called out in parentheses to assist the designer in finding the relevant information.

Notes

1. Multilane lane widths assume straddle lanes, if heavy truck traffic is present consider other design techniques.
2. Extend splitter island length ahead of horizontal / vertical (crest) curves that obstruct approaching view of roundabout.
3. Compare the difference in speed between the movements. Focus should be given to the entry and circulating speeds.
4. These are suggested ranges. If speeds are significantly higher or lower, it could be an indication of poor roundabout performance or geometry.

References

1. NCHRP Research Report 1043.
2. DGM 1-26
3. Tennessee DOT – Roundabout Design Reference Guide
4. Kentucky Roundabout Design Guidance
5. FHWA Roundabout: An Informational Guide
6. Georgia DOT Roundabout Design Guide