

**REVIEW OF ROUNDABOUT DESIGN PARAMETERS
AND DEVELOPMENT OF A ROUNDABOUT DESIGN
GUIDELINE FOR SRI LANKA**

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DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Prof. W.K. Mampearachchi

ABSTRACT

Review of Roundabout Design Parameters and Development of a Roundabout Design Guideline for Sri Lanka

Roundabouts are frequently used in urban areas in Sri Lanka. There is no proper guideline to design roundabouts in Sri Lanka. Increasing traffic and use of long vehicles resulted in malfunctioning some of the roundabouts. Geometry of roundabout has great influence on operation of the roundabouts.

Objectives of the study are to review the roundabout design guidelines, identify the issues in existing roundabouts and formulate a roundabout design guideline for Sri Lanka.

Five major design guidelines were considered to compare the design parameters of roundabout geometry. Twenty four roundabouts spread over major cities were selected for study. Main geometric parameters of each roundabout were collected using field measurements and calibrated satellite images. Standards of local roundabouts were compared with the international roundabout guidelines. Swept path analysis was carried out on selected roundabout layout for single unit truck to determine the adequacy of entry width, circulation width, exit width and operational speed. Design parameters that need to be improved on existing roundabout were identified and suitable values for selected design parameters were proposed.

Key Words: Design Parameters, Guidelines, Roundabouts

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TABLE OF CONTENTS

DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES	viii
LIST OF TABLES	x
ABBREVIATIONS AND ACRONYMS	xi
CHAPTER ONE	1
INTRODUCTION	1
1.1 General	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Research Approach	3
CHAPTER TWO	4
LITERATURE REVIEW	4
2.1 Introduction	4
2.2 History of Roundabouts	6
2.3 Roundabout Types	9
2.3.1 Conventional roundabouts	9
2.3.2 Mini-Roundabout	9
2.3.3 Raindrop roundabouts	10
2.3.4 Turbo roundabouts	11
2.3.5 Other types of roundabouts	12
2.4 Components of a Roundabout	14
2.4.1 Inscribed circle diameter	15
2.4.2 Entry width	16

2.4.3 Circulatory roadway width.....	17
2.4.4 Central Island	17
2.4.5 Entry curves	18
2.4.6 Exit curves.....	19
2.4.7 Flare length.....	22
2.4.8 Entry path deflection	23
2.4.9 Entry angle	26
2.4.10 Cross fall and drainage.....	28
2.4.11 Vertical consideration	29
2.4.11.1 Profiles	29
2.4.11.2 Super Elevation	31
2.5 Roundabout Guidelines.....	32
2.5.1 Introduction	32
2.5.2 US DOT guidelines.....	32
2.5.3 Austroads guidelines.....	44
2.5.4 UK guideline	55
2.5.5 Dubai guidelines.....	59
2.5.6 Oman guidelines.....	62
2.5.7 Summary of guidelines	69
CHAPTER THREE.....	70
METHODOLOGY.....	70
3.1 Operational Framework	70
3.2 Identification of Suitable Roundabouts.....	72
3.3 Roundabout Design Guidelines.....	73
3.4 Development of Roundabout Layout.....	73
3.4.1 Field measurements.....	74
3.4.2 Calibration of satellite images.....	74

3.4.3 Validation of parameters	74
3.5 Roundabout Parameters	74
3.5.1 Field measurements.....	75
3.5.2 Extracted measurements.....	75
3.5.3 Derived parameters	75
3.6 Design Vehicle	76
3.7 Swept Path Analysis.....	77
CHAPTER FOUR.....	79
DATA COLLECTION.....	79
4.1 Field Measurements	79
4.2 Direct Measurements and Extracted Parameters.....	81
CHAPTER FIVE.....	86
ANALYSIS AND DISCUSSION OF RESULTS	86
5.1 Comparison of International Guidelines	86
5.2 Comparison of parameters of selected roundabouts	87
5.2.1 Inscribed Circle Diameter - ICD	87
5.2.2 Central Island Diameter -CID	88
5.2.3 Circulation width.....	90
5.2.4 Entry width.....	92
5.2.5 Exit width.....	93
5.2.6 Entry radius	94
5.2.7 Exit radius	96
5.2.8 Entry angle	97
5.2.9 Approach path radius	98
5.2.10 Compatibility of Exit Radius against Entry Radius	99
5.3 Swept Path Analysis.....	101
5.4 Development of Roundabout Guidelines for Sri Lanka.....	104



CHAPTER SIX	107
CONCLUSIONS AND RECOMMENDATIONS	107
6.1 Conclusions	107
6.2 Recommendations	108
REFERENCES.....	109
APPENDIX.....	112



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LIST OF FIGURES

Figure 2.1: Thomas Circle in Washington, D.C., 1922.....	7
Figure 2.2: Small roundabout in Barzio, Italy.....	8
Figure 2.3: Roundabout in Braşov, Romania.....	8
Figure 2.4: Conventional Roundabout.....	9
Figure 2.5: Mini-roundabout.....	10
Figure 2.6: Raindrop roundabout at an Interstate interchange in North Carolina.....	10
Figure 2.7: The basic shape of the Dutch turbo roundabout.....	12
Figure 2.8: Turbo roundabout road sign in the Netherlands.....	12
Figure 2.9: Oval Roundabout (Artistic Rendering).....	13
Figure 2.10: Roundabout on a road with a very wide median.....	13
Figure 2.11: I-95/Riichie-Marlboro Road Interchange.....	14
Figure 2.12: Basic geometric elements of a roundabout.....	15
Figure 2.13: Central Island.....	17
Figure 2.14: Entry Curve at Single Lane Roundabout.....	19
Figure 2.15: Vehicle path radii.....	20
Figure 2.16: Single lane roundabout exit design.....	20
Figure 2.17: Desirable Roundabout Treatment.....	21
Figure 2.18 Average Flare Lengths (L').....	22
Figure 2.19: Entry Path Curvature.....	23
Figure 2.20: Entry Path Curvature (Positive and Negative Approach Curvatures) ...	24
Figure 2.21: Desirable and Undesirable Approach Geometry.....	25
Figure 2.22: Measurement of Entry Angle.....	26
Figure 2.23: Too Small Entry Angle.....	27
Figure 2.24: Too Large Entry Angle.....	27
Figure 2.25: Sample Plan.....	30
Figure 2.26: Sample Approach Profile and Simple Central Island Profile.....	31
Figure 2.27: Roundabout Design Processing US-DOT Roundabout Manual.....	33
Figure 2.28: Fast Vehicle Path through Single Lane Roundabout.....	35
Figure 2.29: Fast Vehicle Path through Double Lane Roundabout.....	35
Figure 2.30: Critical Right Turn Movement.....	36
Figure 2.31: Vehicle Path Radii.....	37
Figure 2.32: AASHTO WB-50 Vehicle.....	38

Figure 2.33: AASHTO WB-67 Vehicle.....	38
Figure 2.34: AASHTO SU (Single Unit Truck)	39
Figure 2.35: Deflection Criteria of Single Lane Roundabout	51
Figure 2.36: Deflection Criteria of Multi Lane Roundabout	52
Figure 2.37: Typical Roundabout Entrance/ Exit Conditions for Urban Areas.....	53
Figure 2.38: Desirable and Undesirable Separation between Lines	54
Figure 2.39: The Turning Space Requirement.....	56
Figure 2.40: Turning Circle Requirement for a Vehicle on a Roundabout with an Inscribed Circle Diameter	64
Figure 2.41: Using One Crown Line to Join Splitter Islands.....	67
Figure 2.42: Using One Crown Line to Divide the Carriageway in the Ratio 2:1.....	68
Figure 2.43: Using Two Crown Line to Divide the Carriageway in the Ratio 2:1	68
Figure 3.1: Operational Frame Work.....	71
Figure 3.2: Details of the design vehicle.....	76
Figure 3.3: The swept path envelope of AASHTO SU Vehicle	77
Figure 4.1: Measured geometric parameters of roundabout	79
Figure 5.1: Analysis of Inscribed Circle Diameter	88
Figure 5.2: Analysis of Central Island Diameter	89
Figure 5.3: Analysis of Circulation Width.....	90
Figure 5.4: Analysis of Entry Width.....	93
Figure 5.5: Analysis of Exit Width	94
Figure 5.6: Analysis of Entry Radius.....	95
Figure 5.7: Analysis of Exit Radius	96
Figure 5.8: Analysis of Entry Angle	97
Figure 5.9: Dimensions of the Vehicle adopted for Swept Path Analysis.....	102

LIST OF TABLES

Table 2.1: Examples of roundabouts in several countries.....	5
Table 2.2: Recommended Design Speeds For Roundabouts According To Site Category (USDOT).....	34
Table 2.3: Recommended Inscribed Circle Diameter Ranges	39
Table 2.4: Minimum Circulatory Lane Widths.....	40
Table 2.5: Initial Selection of Minimum Central Island Diameters of Single Lane Roundabouts.....	47
Table 2.6: Initial Selection of Minimum Central Island Diameters of Two Lane Roundabouts.....	48
Table 2.7: Initial Selection of Single Lane Roundabout Circulating Carriageway Widths	49
Table 2.8: Initial Selection of Two Lane Roundabout Circulating Carriageway Widths	50
Table 2.9: The Turning Space Requirement	57
Table 2.10: Typical Minimum Inscribed Diameters of Design Vehicle.....	59
Table 2.11: Minimum width of circulating Pavement.....	60
Table 2.12: Turning Circle Requirement for a Vehicle on a Roundabout with an Inscribed Circle Diameter	65
Table 2.13: summary of guidelines.....	69
Table 3.1: Locations of Selected Roundabouts.....	72
Table 4.1: Field Measurements	80
Table 4.2: Design Parameters	81
Table 5.1: Comparison of Roundabout Parameters with International Guidelines ...	86
Table 5.2: Analysis of Circulation Width	91
Table 5.3: Approach Path Radius	98
Table 5.4: Exit radius and entry radius	99
Table 5.5: Results Obtained for SU Vehicle from Vehicle TURNSimulation	102
Table 5.6: Comparison of roundabout parameters of Sri Lanka against international guidelines.	105

ABBREVIATIONS AND ACRONYMS

AASHTO	-American Association of State Highway and Transportation Officials
AUSTROADS	-Association of Australian and New Zealand Road Transport and Traffic Authorities
CID	-Central Island Diameter
DMRB	-Design Manual for Roads and Bridges
ICD	-Inscribed Circle Diameter
ISTEA	-Intermodal Surface Transportation Efficiency Act
MEW	-Maximum Entry Width
RA	-Roundabout

US DOT



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