CONTENTS

Chapter 1
1.0 Introduction 1
1.1 Traffic Problems 4

Chapter 2
Existing Traffic Management

2.0 Introduction 7
2.1 Traffic Planning 8
2.2 Mathematical Models for Traffic Planning 10
2.3 Draw Back of the Existing System 15
2.4 Proposed System 15
2.5 Objectives 17
2.6 Scope of the Proposed System 17
2.7 Methodology 17
2.8 Literature Survey 18
2.9 Scheme of the Study 25

Chapter 3
Network Database Management

3.0 Network Data management 27
3.1 Information System 31
3.2 Creating - Databases 34
3.3 User Interaction 39
3.4 Conclusion 40

Chapter 4
Transit Facility Management

4.0 Mass transit 42
4.1 Computer Evaluation Systems 45
4.2 Single Garage Multiple Vehicle Routing Problem 48
4.3 Multi Garage Vehicle Routing Problem 57
4.4 Bus Scheduling 63
4.5 Vehicle and Crew Scheduling 71
4.6 Optimizing Program Module and Software Tool 78
4.7 Transit Management Behaviour 82
4.8 Design, Analysis and Decision- Making in Vehicle Scheduling 86
4.9 Conclusion 102
Chapter 5
Congestion Management

5.0 Introduction 103
5.1 Traffic Studies 106
5.2 Interval Distribution 110
5.3 Vehicular Speed 116
5.4 Mathematical Model On Flow-Density-Speed 119
5.5 Queuing Process in Traffic Flow 126
5.6 Queuing Analysis 130
5.7 Network and Area Traffic Control 137
5.8 Computer Vision and Neural Network for Traffic Monitoring 142
5.9 Knowledge Based system for Traffic 151
5.10 Conclusion 156

Chapter 6
Safety Management

6.0 Introduction 157
6.1 Inventory 158
6.2 Mathematical Models 160
6.3 Air Pollution 162
6.4 Planning and Development 165
6.5 Noise Pollution 167
6.6 Conclusion 168

Chapter 7
Conclusion and Scope for Future Development

7.0 Summary of the work 169
7.1 Future Development 170
7.2 Conclusion 171

References 172
Bibliography 182