

Table of Contents

	Page Number
Executive Summary.....	1
1.0 Introduction	
1.1 Introduction and Study Purpose.....	3
1.2 Study Approach / Process.....	5
1.3 Organization.....	7
2.0 Defining a Vision.....	11
3.0 Background Information, Existing Conditions and Analysis	
3.1 Benefits of Walking and Cycling.....	11
3.1.1 Transportation Benefits.....	12
3.1.2 Recreation, Health and Fitness Benefits	13
3.1.3 Environmental Benefits	14
3.1.4 Economic Benefits	15
3.2 Town Documents, Policies, Official Plan and Studies.....	16
3.2.1 Official Plan.....	16
3.2.2 Town-Wide Bicycle System Study, 1998.....	17
3.2.3 Cycling Master Plan, 2005-2007.....	17
3.2.4 Little Rouge Alliance Corridor Management Plan.....	17
3.3 Inventory and Analysis of Existing Pathways and Trails.....	18
3.4 Users	18
4.0 Opportunities and Constraints	
4.1 Destinations and Barriers.....	21
5.0 Pathway and Trail Design Guidelines.....	23
5.1 Type I: Primary Multi-Use Town Wide Pathways.....	24
5.2 Type II: Secondary Town Wide Pathways.....	25
5.3 Type III: Park Pathways.....	26
5.4 Type IV: Trails.....	27
5.5 Type V: Informal Trails.....	28
5.6 Type VI: Alternate Routes.....	29
5.7 Rails with Trails.....	30
5.8 Rest and Staging Areas.....	31
5.9 Furnishings.....	33
5.9.1 Benches.....	33
5.9.2 Bollards.....	33
5.9.3 Garbage Receptacles.....	33
5.9.4 Tree Grates.....	33
5.9.5 Bicycle Parking.....	33
5.10 Accessibility for Users with Disabilities.....	36
5.10.1 Grade.....	37
5.10.2 Width.....	37

5.10.3 Travel Surface.....	38
5.10.4 Pathway and Trail Edges.....	38
5.10.5 Handrails or Guards.....	38
5.10.6 Bollards, Gates and Barriers.....	38
5.10.7 Amenities.....	39
5.10.8 Loop Trails.....	39
6.0 Pathway and Trail Signage & Markings	
6.1 Signage.....	41
6.1.1 Designation/Directional Signs.....	41
6.1.2 Interpretive Signage.....	41
6.1.3 Gateway Signage.....	42
6.1.4 Pathway and Trail Markers.....	42
6.2 Centre-Line and Edge Stripping.....	43
7.0 Crossings	
7.1 Minor or Local Roads.....	45
7.1.1 Raised Crosswalk (Urban Areas).....	48
7.2 Arterial or Collector Roads.....	50
7.2.1 Mid-Block Crossing Warrant.....	50
7.3 Major Roads.....	52
7.3.1 Pedestrian Refuge Islands.....	52
7.4 Pathway Crossing of Railroads.....	54
7.5 Multi-Use Trail Bridges and Underpasses.....	55
8.0 Pathway and Trail Enhancements	
8.1 Pathway/Trail Experience.....	57
8.2 Public Art in the Landscape.....	58
9.0 Routes Selection and Evaluation	
9.1 Route Selection.....	59
9.2 Route Evaluation.....	60
10.0 Summary of Public Input.....	61
11.0 The Master Plan Network	
11.1 Primary Barriers to the Network.....	63
11.2 Pathways and Trails Network Types.....	63

12.0 Property Management Strategies	
12.1 Private Property Barriers and Approaches to Agreements.....	65
12.2 Partnership Zones.....	66
12.2.1 Partnership Zone Case Study.....	67
12.2.2 Key Partners.....	68
13.0 Implementation Strategy and Financial Implications	
13.1 Establishing Priorities for Implementation.....	69
13.1.1 Primary Factors.....	69
13.1.2 Secondary Factors.....	69
13.2 Estimate of Capital Cost.....	70
13.3 Trails Implementation Process.....	71
13.3.1 Site Plan Development Application Stream.....	71
13.3.2 Town of Markham Design/Build Stream.....	72
13.4 Pathway and Trail Network Actions.....	77
13.4.1 Support Facilities.....	77
13.5 Maintenance and Operating Costs.....	78
13.5.1 General Maintenance Guidelines.....	78
13.5.2 Funding for Maintenance and Operations.....	79
13.6 Administration.....	80
13.7 Implementation Funding Options.....	81
13.7.1 Capital Funding.....	81
13.7.2 Development Charge Funding.....	81
13.7.3 Gas Tax.....	81
13.7.4 Assessments.....	81
13.7.5 Grants.....	81
13.7.6 The Cycling and Pedestrian Advisory Committee (CPAC).....	82
13.7.7 User Fees.....	82
13.7.8 Entrepreneurial.....	82
13.8 Implementation Promotion.....	83
13.8.1 Outreach.....	83
13.8.2 Education.....	83
13.8.3 Encouragement.....	84
13.9 Marketing the Trail.....	85
13.9.1 Marketing Objectives.....	87
13.9.2 Approaches to Market Markham as a Pathway/Trail Tourist Destination.....	87
13.10 Partnerships and Programs.....	88
13.10.1 Programs.....	88
13.11 Implementation Actions / Next Step.....	89
14.0 Conclusion.....	93
15.0 Bibliography and References.....	95

Appendices:

Appendix A: Maps

Appendix B: Detailed Cost Estimates and Operational Costs

Appendix C: Hydro One Application Process

Appendix D: Pathway and Trail Benefits

Appendix E: Priority Property Chart

Appendix F: Route Evaluation Questions

List of Figures

Page Number

3.1 Pathway and Trail Users.....	19
5.1 Typical cross section of a cycling facility adjacent to a rail corridor separated by a planted berm	30
5.2 Example of a Staging Area Plan.....	32
5.3 Counter Slope Conditions.....	36
7.1 Mid Block Crossing Example for Minor or Local Roads.....	46
7.2 Mid Block Crossing Example for Minor or Local Roads.....	47
7.3 Raised Crosswalk Design.....	49
7.4 Guideline Threshold Distances.....	50
7.5 Minimum Sight Distance for Bike Path Crossing	51
7.6 Minimum Sight Distance.....	51
7.7 Example of a Pedestrian Refuge at a Mid-Block Crossing.....	53
13.1 Route Selection Criteria.....	73
13.2 Pathway and Trail Implementation Process.....	75