

TABLE OF CONTENTS

	Page
CHAPTER 1 – INTRODUCTION AND ALTERNATIVES DESCRIPTION	1-1
1.1 Introduction	1-1
CHAPTER 2 – METHODOLOGY AND COORDINATION	2-1
2.1 Vegetative Communities and Wildlife Habitat	2-1
2.1.1 Vegetative Communities	2-1
2.1.2 Wildlife Habitat	2-1
2.1.3 Wildlife Travel Corridors	2-1
2.1.4 Critical Habitat	2-1
2.1.5 Regulatory Framework	2-2
2.1.6 Data Collection	2-2
2.1.7 Agency Consultation and Coordination	2-3
2.2 Wetlands	2-4
2.2.1 Regulatory Framework	2-4
2.2.2 Data Collection	2-5
2.2.3 Agency Consultation and Coordination	2-6
2.3 Threatened and Endangered Species.....	2-6
2.3.1 Regulatory Framework	2-7
2.3.2 Data Collection	2-7
2.3.3 Agency Consultation and Coordination	2-7
CHAPTER 3 – EXISTING CONDITIONS	3-1
3.1 Overview of Project Study Area	3-1
3.2 Vegetation and Vegetative Communities	3-2
3.2.1 VT 2A Corridor.....	3-2
3.2.2 Circ A/B Corridor	3-4
3.3 Wildlife and Habitat	3-6
3.3.1 VT 2A Corridor.....	3-6
3.3.2 Circ A/B Corridor	3-7
3.4 Wetlands	3-10
3.4.1 VT 2A Corridor.....	3-10
3.4.2 Circ A/B Corridor	3-13
3.5 Threatened and Endangered Species	3-19
3.5.1 VT 2A Corridor.....	3-19
3.5.2 Circ A/B Corridor	3-19
CHAPTER 4 – IMPACTS AND MITIGATION	4-1
4.1 Introduction	4-1
4.1.1 Context and Key Issues.....	4-1
4.2 Vegetation and Vegetative Communities	4-1
4.2.1 No Build Alternative	4-1
4.2.2 VT 2A Alternatives.....	4-1
4.2.3 Circ A/B Alternatives.....	4-4
4.2.4 Hybrid Alternatives	4-7
4.3 Wildlife and Habitat	4-13
4.3.1 No Build Alternative	4-13
4.3.2 VT 2A Alternatives.....	4-13
4.3.3 Circ A/B Alternatives.....	4-14

4.3.4	Hybrid Alternatives	4-17
4.4	Wetlands	4-19
4.4.1	No Build Alternative	4-20
4.4.2	VT 2A Alternatives.....	4-20
4.4.3	Circ A/B Alternatives.....	4-23
4.4.4	Hybrid Alternatives	4-28
4.5	Threatened and Endangered Species	4-35
4.5.1	No Build Alternative	4-35
4.5.2	VT 2A Alternatives.....	4-35
4.5.3	Circ A/B Alternatives.....	4-35
4.5.4	Hybrid Alternatives	4-36
4.6	Mitigation.....	4-36
4.6.1	Compensatory Wetlands Mitigation Plan.....	4-36
4.6.2	Mitigation for Temporary Construction Impacts.....	4-39
4.6.3	Mitigation for Threatened and Endangered Species	4-41
4.6.4	Mitigation for Wildlife and Habitat.....	4-41
4.6.5	Mitigation for Vegetation and Vegetative Communities.....	4-42
4.6.6	Wetland, Vegetation and Habitat Secondary Impacts and Mitigation.....	4-43
4.7	Summary of Impacts and Mitigation.....	4-47
4.7.1	VT 2A Alternatives.....	4-47
4.7.2	Circ A/B Alternatives.....	4-47
4.7.3	Hybrid Alternatives	4-49
4.7.4	Mitigation	4-50

CHAPTER 5 – REFERENCES 5-1

LIST OF TABLES

Table 3-1	Vegetative Cover Types on Figures 3-1a through 3-1d and 3-2a through 3-2d	3-2
Table 4-1	Vegetation Impacts Associated with Alternative 2	4-2
Table 4-2	Vegetation Impacts Associated with Alternative 3	4-3
Table 4-3	Vegetation Impacts Associated with Alternative 22	4-4
Table 4-4	Vegetation Impacts Associated with Circ A/B Portion of Alternative 16a.....	4-5
Table 4-5	Vegetation Impacts Associated with Circ A/B Portion of Alternative 16b.....	4-5
Table 4-6	Vegetation Impacts Associated with Circ A/B Portion of Alternative 16c.....	4-6
Table 4-7	Vegetation Impacts Associated with Circ A/B Portion of Alternative 17.....	4-7
Table 4-8	Vegetation Impacts Associated with VT 2A Portion of Alternative 18.....	4-8
Table 4-9	Vegetation Impacts Associated with Circ Street Portion of Alternative 18.....	4-8
Table 4-10	Total Vegetation Impacts Associated with Alternative 18	4-9
Table 4-11	Vegetation Impacts Associated with VT 2A Portion of Alternative 19.....	4-10
Table 4-12	Vegetation Impacts Associated with Circ Street Portion of Alternative 19.....	4-10
Table 4-13	Total Vegetation Impacts Associated with Alternative 19	4-11
Table 4-14	Vegetation Impacts Associated with VT 2A Portion of Alternative 23.....	4-12
Table 4-15	Vegetation Impacts Associated with Circ Street Portion of Alternative 23.....	4-12
Table 4-16	Total Vegetation Impacts Associated with Alternative 23	4-13
Table 4-17	Wetland Impacts Associated with Alternative 2	4-21
Table 4-18	Wetland Impacts Associated with Alternative 3	4-22
Table 4-19	Wetland Impacts Associated with Alternative 22	4-23
Table 4-20	Wetland Impacts Associated with Alternative 16a	4-25

Table 4-21	Wetland Impacts Associated with Alternative 16b	4-26
Table 4-22	Wetland Impacts Associated with Alternative 16c	4-27
Table 4-23	Wetland Impacts Associated with Alternative 17	4-29
Table 4-24	Wetland Impacts Associated with the VT 2A Portion of Alternative 18.....	4-30
Table 4-25	Wetland Impacts Associated with the Circ Street Portion of Alternative 18.....	4-31
Table 4-26	Wetland Impacts Associated with the VT 2A Portion of Alternative 19.....	4-33
Table 4-27	Wetland Impacts Associated with the Circ Street Portion of Alternative 19.....	4-34
Table 4-28	Wetland Impacts Associated with the VT 2A Portion of Alternative 23.....	4-36
Table 4-29	Wetland Impacts Associated with the Circ Street Portion of Alternative 23.....	4-37
Table 4-30	Mitigation Site Search Screening and Evaluation Summary	4-53

LIST OF FIGURES

Figure 3-1a	Biological Resources VT 2A Corridor – Segment 1
Figure 3-1b	Biological Resources VT 2A Corridor – Segment 2
Figure 3-1c	Biological Resources VT 2A Corridor – Segment 3
Figure 3-1d	Biological Resources VT 2A Corridor – Segment 4
Figure 3-2a	Biological Resources Circ A/B Corridor – Segment 1
Figure 3-2b	Biological Resources Circ A/B Corridor – Segment 2
Figure 3-2c	Biological Resources Circ A/B Corridor – Segment 3
Figure 3-2d	Biological Resources Circ A/B Corridor – Segment 4
Figure 3-3a	Wetlands and Hydric Soils VT 2A Corridor – Segment 1
Figure 3-3b	Wetlands and Hydric Soils VT 2A Corridor – Segment 2
Figure 3-3c	Wetlands and Hydric Soils VT 2A Corridor – Segment 3
Figure 3-3d	Wetlands and Hydric Soils VT 2A Corridor – Segment 4
Figure 3-4a	Wetlands and Hydric Soils Circ A/B Corridor – Segment 1
Figure 3-4b	Wetlands and Hydric Soils Circ A/B Corridor – Segment 2
Figure 3-4c	Wetlands and Hydric Soils Circ A/B Corridor – Segment 3
Figure 3-4d	Wetlands and Hydric Soils Circ A/B Corridor – Segment 4
Figure 4-1	Wetland Mitigation Site Search Area

APPENDICES

Appendix A	Agency Correspondence
Appendix B	Indiana Bat Survey Report
Appendix C	Allen Brook Fish and Macroinvertebrate Sampling Report
Appendix D	Winooski River Mussel Survey
Appendix E	Fish Species in the Winooski River
Appendix F	Plant and Wildlife Lists for Project Corridors
Appendix G	Detailed Vegetative Cover Descriptions for Circ A/B Corridor
Appendix H	Photographs of Delineated Wetlands
Appendix I	Wetland Delineation Data Sheets
Appendix J	Wetland Function—Value Evaluation Forms
Appendix K	Bryophyte Report and Agency Correspondence
Appendix L	Woodfrog Report