TABLE OF CONTENTS

Summary ..... **vii**
Study Approach vii
Baseline Conditions vii
Project Effects vii
Measures to Avoid or Minimize Effects viii
Unavoidable Adverse Effects viii
Acronyms and Abbreviations ..... **ix**
Glossary ..... **xi**
SECTION 1 Introduction **1-1**
What are the primary features of the Tukwila to Renton Project? 1-1
What is the purpose of this report? 1-1
What elements are included in the Ecosystems Discipline Report? 1-2
Wetlands 1-2
Aquatic Resources 1-2
Wildlife Habitat 1-3
Why are ecosystem elements important to consider? 1-3
What studies were completed? 1-3
What are the key messages from this report? 1-4
What measures are proposed to avoid or reduce effects? 1-5
What would happen if we adopt the No Build Alternative? 1-6
SECTION 2 Project Description **2-1**
What is the intent of the Tukwila to Renton Project? 2-1
What are the details of the Tukwila to Renton Project? 2-1
I-405 from I-5 to East of SR 181 2-3
I-405 at SR 181 Interchange 2-5
I-405 from East of SR 181 to SR 167 Interchange 2-7
SR 167 from SW 43rd Street On-ramp North to SW 27th Street 2-9
SR 167 from SW 27th Street to I-405 2-11

I-405 Interchange with SR 167 2-13
I-405 from East of SR 167 Interchange to North of S 5th Street 2-17
I-405 from S 5th Street to SR 169 2-19
Changes to Renton Hill Access 2-22
What are the construction methods and schedule for implementation? 2-23
Construction Methods 2-23
Schedule 2-24
Does this project relate to any other improvements on I-405 or connecting highways? 2-24
What is the No Build Alternative? 2-26

SECTION 3 Study Approach 3-1

What is the study area and how was it determined? 3-1
What policies or regulations are related to effects on ecosystem elements? 3-2
Wetlands 3-2
Aquatic Resources 3-3
Wildlife Habitat 3-3
How did we collect information on ecosystem elements for this report? 3-4
Wetlands 3-4
Aquatic Resources 3-7
Wildlife Habitat 3-8
How did we evaluate effects on ecosystem elements? 3-9
Wetlands 3-10
Aquatic Resources 3-10
Wildlife Habitat 3-10

SECTION 4 Baseline Conditions 4-1

What ecosystem elements exist in the study area? 4-1
What are the characteristics of ecosystem elements located in the study area? 4-1
Wetlands 4-1
Aquatic Resources 4-13
Wildlife Habitat 4-32

What functions do study area ecosystem elements provide? 4-35
What functions do study area ecosystem elements provide? 4-36
Wetlands.....4-36
Aquatic Resources.....4-39
Wildlife Habitat 4-40
Do any federally listed species or federal species of concern occur in the study area?.....4-43
Is the project within a recognized tribal fishing area?.....4-46

SECTION 5 Project Effects.....5-1

How will project construction affect ecosystem elements?.....5-1
Wetlands.....5-1
Aquatic Resources.....5-7
Wildlife Habitat 5-15
Will project construction affect listed species? 5-17
How will project operation affect ecosystem elements? 5-17
Does the project have other effects that may be delayed or distant from the project area? 5-18
Wetlands.....5-18
Aquatic Resources.....5-19
Wildlife Habitat 5-19
Were potential cumulative effects on ecosystem elements considered? 5-19
What effects would occur under the No Build Alternative?.....5-20
Wetlands.....5-20
Aquatic Resources.....5-20
Wildlife Habitat 5-21

SECTION 6 Measures to Avoid or Minimize Effects.....6-1

What measures will be taken to mitigate effects before and during construction? 6-1
What measures will be taken to mitigate effects of operation? 6-3
Wetlands.....6-3
Aquatic Resources.....6-3
Wildlife Habitat 6-4

What measures will be taken to mitigate effects of the constructed project? 6-5
Wetlands 6-5
Aquatic Resources 6-5
Wildlife Habitat 6-8

SECTION 7 Unavoidable Adverse Effects 7-1
Will the project cause any substantial adverse effects that cannot be avoided? 7-1

SECTION 8 References 8-1
GIS data sources 8-1
Text references and verbal communications 8-2

EXHIBITS

Exhibit S-1: Summary of Ecosystem Element Effects viii
Exhibit 2-1: Project Features, Sheet 1 2-2
Exhibit 2-2: Project Features, Sheet 2 2-4
Exhibit 2-3: SR 181 Interchange Improvements 2-5
Exhibit 2-4: Project Features, Sheet 3 2-6
Exhibit 2-5: Project Features, Sheet 4 2-8
Exhibit 2-6: Project Features, Sheet 5 2-10
Exhibit 2-7: Project Features, Sheet 6 2-12
Exhibit 2-8: Freeway to Freeway Ramps in Reconstructed I-405/SR 167 Interchange 2-13
Exhibit 2-9: Rendering of I-405/SR 167 Interchange Improvements 2-14
Exhibit 2-10: Split-diamond Interchange at Lind Avenue and Talbot Road 2-15
Exhibit 2-11: Project Features, Sheet 7 2-16
Exhibit 2-12: Project Features, Sheet 8 2-18
Exhibit 2-13: Mill Avenue Design Option for Local Access to Bronson Way 2-20
Exhibit 2-14: Main Avenue Design Option for Local Access to Bronson Way 2-21
Exhibit 2-15: New Local Access for Renton Hill 2-22
Exhibit 3-1: Ecosystems Study Area 3-2

Exhibit 4-1: Summary of Wetland Ratings in the Study Area 4-2
Exhibit 4-2: Percentage of Wetlands in the Study Area Categorized by Ecology Rating System 4-3
Exhibit 4-3: Tukwila to Renton Project Wetlands Sheet 1 4-4
Exhibit 4-4: Tukwila to Renton Project Wetlands Sheet 2 4-5
Exhibit 4-5: Tukwila to Renton Project Wetlands Sheet 3 4-6
Exhibit 4-6: Drainage Basin Boundaries within the Study Area 4-9
Exhibit 4-7: Summary of Wetlands Located within the Green River Basin 4-10
Exhibit 4-8: Summary of Wetlands Located within the Springbrook Creek Basin 4-12
Exhibit 4-9: Aquatic Resource Locations from I-5/I-405 Interchange to the Green River 4-14
Exhibit 4-10: Aquatic Resource Locations Along SR 167 4-15
Exhibit 4-11: Aquatic Resource Locations from SR 167/I-405 Interchange to SR 169/I-405 Interchange 4-16
Exhibit 4-12: Anadromous Fish Species Known or Presumed to be in the Study Area 4-18
Exhibit 4-13: Resident Fish Species Known or Presumed to be in the Study Area 4-19
Exhibit 4-14: Gilliam Creek 4-20
Exhibit 4-15: Cottage Creek 4-21
Exhibit 4-16: Unnamed Tributary to Gilliam Creek 4-21
Exhibit 4-17: Green River 4-22
Exhibit 4-18: Springbrook Creek 4-24
Exhibit 4-19: Panther Creek 4-25
Exhibit 4-20: Rolling Hills Creek 4-26
Exhibit 4-21: Unnamed Tributary to Rolling Hills Creek 4-27
Exhibit 4-22: Thunder Hills Creek 4-28
Exhibit 4-23: Unnamed Tributary to Thunder Hills Creek 4-29
Exhibit 4-24: Cedar River 4-30
Exhibit 4-25: Unnamed Tributary to the Cedar River 4-31
Exhibit 4-26: Fish Bearing Culverts Associated with In-water Work 4-32

Exhibit 4-27: Baseline Land Cover In the Study Area 4-34
Exhibit 4-28: Land Use Cover Types in Study Area 4-35
Exhibit 4-29: Wildlife Use in the Study Area 4-41
Exhibit 5-1: Summary of Permanent Wetland Effects 5-4
Exhibit 5-2: Percentages of Permanent Effects to Wetlands, Categorized by the Ecology Rating System 5-5
Exhibit 5-3: Summary of Temporary Wetland Effects 5-6
Exhibit 5-4: Summary of Permanent Aquatic Resource Effects 5-8
Exhibit 5-5: Summary of Temporary Aquatic Resource Effects 5-13
Exhibit 5-6: Potential Permanent Land Cover Loss In the Study Area 5-15
Exhibit 5-7: Potential Temporary Land Cover Loss In the Study Area 5-16

APPENDICES

APPENDIX A I-405 Stream Survey Methodology

APPENDIX B I-405 Stream Survey Summary

APPENDIX C Wetland Field Data Forms

APPENDIX D Wetland Summaries

APPENDIX E Wetland Functions Table

APPENDIX F Tree Survey