



# Table of Contents

**READER’S GUIDE TO SEATTLE’S URBAN BLUEPRINT FOR HABITAT PROTECTION AND RESTORATION** ..... 1

**SEATTLE’S SALMON RECOVERY POLICY FRAMEWORK**..... 4

**SEATTLE’S SCIENTIFIC METHODOLOGY** ..... 6

    Overview ..... 6

    Historic Shoreline Alterations Map ..... 8

    General Approach ..... 9

    Developing a Scientific Framework ..... 10

    Life History Stages ..... 12

    Key Habitat Types and Characteristics ..... 12

    The Larger Context ..... 13

    Actions Based on Science ..... 14

**SEATTLE’S AQUATIC ENVIRONMENTS** ..... 16

    Lake Washington ..... 16

        Overview ..... 16

        Historical Modifications ..... 16

        Chinook Utilization of Lake Washington ..... 18

        Habitat Requirements ..... 19

        Landscape and Habitat Forming Processes and Trophic Interactions ..... 22

        Preliminary Focus Areas ..... 24

        Habitat Improvement Projects in Lake Washington ..... 25

        Addressing Uncertainties ..... 29

        Literature Cited ..... 30

        Lake Washington Shoreline Map ..... 33

    Lake Union/Lake Washington Ship Canal System ..... 34

        Overview ..... 34

        Historical Modifications ..... 34

        Chinook Utilization of the Lake Union/Lake Washington Ship Canal System ..... 36

        Habitat Requirements ..... 36



Landscape and Habitat Forming Processes and Trophic Interactions ..... 38

Preliminary Focus Areas ..... 39

Habitat Improvement Projects in the Lake Union/Lake Washington  
Ship Canal System ..... 40

Addressing Uncertainties ..... 41

Literature Cited ..... 41

Lake Union and the Ship Canal Map ..... 44

Hiram M. Chittenden Locks ..... 45

    Overview ..... 45

    Historical Modifications ..... 45

    Chinook Utilization of the Hiram M. Chittenden Locks ..... 46

    Habitat Requirements ..... 47

    Preliminary Focus Areas ..... 52

    Fish Passage Improvement Projects at the Locks ..... 53

    Addressing Uncertainties ..... 54

    Literature Cited ..... 54

    Fish Passage Improvement Projects Aerial Photo ..... 57

Duwamish Estuary ..... 59

    Overview ..... 59

    Historical Modifications ..... 60

    Chinook Utilization of the Duwamish Estuary ..... 63

    Habitat Requirements ..... 64

    Landscape and Habitat Forming Processes ..... 66

    Preliminary Focus Areas ..... 68

    Habitat Improvement Projects in the Duwamish Estuary ..... 69

    Addressing Uncertainties ..... 75

    Literature Cited ..... 76

    Duwamish Waterway Map ..... 79

Marine Nearshore including Elliot Bay and Shilshole Bay ..... 81

    Overview ..... 81

    Historical Modifications ..... 81

    Chinook Utilization of the Marine Nearshore ..... 83

    Habitat Requirements ..... 83



Landscape and Habitat Forming Processes ..... 85

Preliminary Focus Areas ..... 88

Habitat Improvement Projects in the Nearshore ..... 89

Addressing Uncertainties ..... 91

Literature Cited ..... 91

Puget Sound Nearshore Map ..... 93

**SEATTLE’S INVENTORY/ASSESSMENT STRATEGY ..... 95**

**SEATTLE’S REGULATIONS WHICH WILL INFLUENCE THE FUTURE..... 98**

    Land Use and Development Regulations ..... 98

    Seattle’s Stormwater Management Program ..... 113

**SEATTLE’S WATERSHEDS OUTSIDE THE MUNICIPAL BOUNDARIES ..... 118**

    Cedar ..... 118

    Tolt/Snohomish..... 124

    Skagit ..... 127

    Pend Oreille ..... 132

**APPENDICES ..... 135**

    Seattle Public Utilities Urban Creeks Watershed Analysis ..... 135

    Comment Letters ..... 138

    Glossary ..... 151