EXECUTIVE SUMMARY

The purpose of this Biological Assessment Reference (BAR) is to streamline preparation of BAs in support of Washington State Ferries' (WSF's) capital and preservation (i.e., maintenance and repair) programs. It describes common terms used in the WSF system, the most commonly used construction methods and potential effects on listed species from those methods. It also identifies baseline conditions and species distributions at each WSF facility. This document provides background to be used on project-specific or programmatic consultations. To initiate Endangered Species Act (ESA) consultation, WSF will submit a *WSF Capital, Repair, and Maintenance Projects BAR Project Form* (Project Form) (Appendix A) to the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) that contains specific information needed to complete ESA consultations for each project.

The BAR has been written to comply with the Federal Highway Administration (FHWA), U.S. Army Corps of Engineers (Corps), and WSF standards. Both the USFWS and NMFS have been provided a copy of this document for their use during ESA consultations on WSF projects.

The benefits of this BAR include reducing the amount of redundant or standard written material generated for the ESA consultation process, reducing the time and costs associated with producing individual stand-alone BAs for each project, and reducing the amount of paperwork reviewed by the federal action agency, USFWS and NMFS, allowing each agency to focus on project-specific information.

1 INTRODUCTION

The Washington State Department of Transportation (WSDOT) Washington State Ferry (WSF) system operates and maintains 19 ferry terminals and one maintenance facility; all of which are located in either Puget Sound or the San Juan Islands. WSF sails to a 20th terminal in Sidney, British Columbia (BC), that is operated by BC Ferries. Since its creation in 1951, WSF has become the largest ferry system in the United States, operating 23 vessels on 10 routes with over 500 sailings each day. Over 24 million passengers ride WSF ferries each year. Approximately 10 million of these are car/driver passengers and over 14 million are walk-on passengers. Figure 1-1 shows the WSF routes.

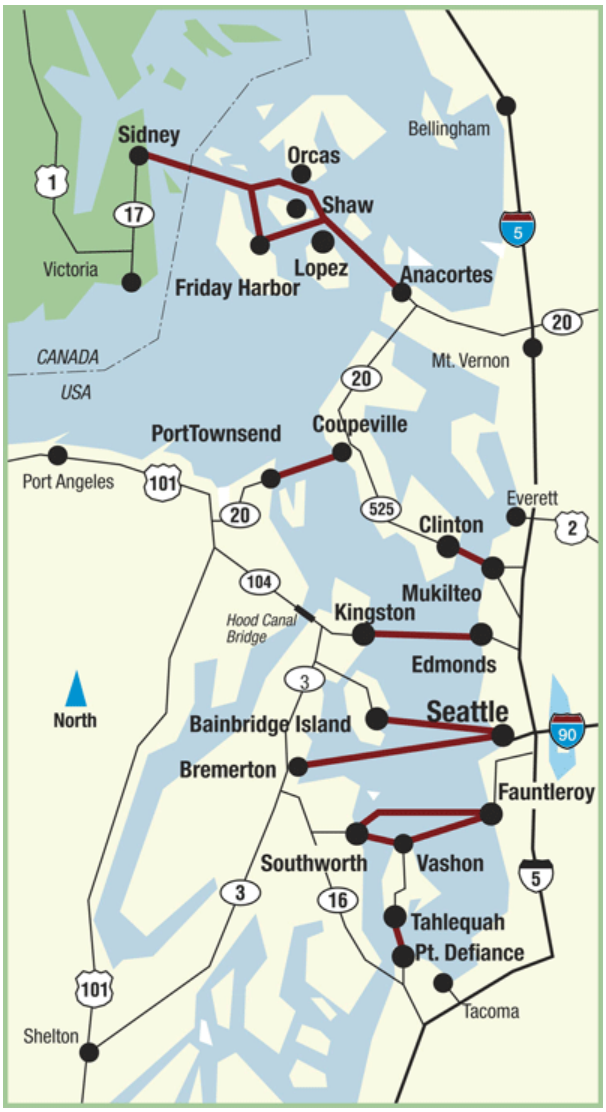

Figure 1-1
WSF Routes

Ridership of WSF ferries has grown 22 percent over the last decade, and is projected to grow more than 30 percent by 2040. By 2040, WSF anticipates it will spend approximately $1.8 billion to preserve WSF terminals, and its capital/terminal improvement program will spend over $700 million, which will include major construction at the Seattle, Mukilteo and Fauntleroy terminals. Regular, reliable and safe service on WSF routes depends on adequate preservation of the existing terminals and terminal improvements. Table 1.1 shows the 2017 annual ridership by route for each terminal.

Table 1-1
Annual Ridership by Route

Route	Annual Ridership (2017)
Seattle/Bainbridge	6,528,640
Seattle/Bremerton	2,778,680
Fauntleroy/Vashon	1,975,082
Fauntleroy/Southworth	945,377
Southworth/Vashon	190,442
Tahlequah/Point Defiance	843,932
Edmonds/Kingston	4,135,698
Mukilteo/Clinton	4,105,396
Port Townsend/Coupeville	806,823
Anacortes/San Juans*	2,018,494
Anacortes/Lopez	323,960
Anacortes/Shaw	30,965
Anacortes/Orcas	672,272
Anacortes/Friday Harbor	886,383
Inter-Island	104,914
Anacortes/Sidney	109,202

*includes all Anacortes/San Juan routes and inter-island routes

1.1 The ESA Consultation Process

Section 7(a)(1) of the Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. 1531 et seq.) requires federal agencies to protect endangered and threatened species. Section 7(a) (2) requires federal action agencies to conduct ESA consultations to ensure that any action authorized, funded, or carried out by a federal agency will not jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitats.

Nearly all WSF projects have a federal nexus resulting from either receipt of federal money from the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA), or through issuance of a federal permit from the U.S. Army Corps of Engineers (Corps) or other federal agency. The lead federal agency, either through funding or issuing a permit for a project, is referred to as the federal action agency.

The federal action agency may initiate either formal or informal consultation with the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (USFWS), collectively called the "Services." The Corps and FHWA have granted WSDOT nonfederal designee status, which allows WSDOT to initiate informal consultation directly with the Services. The lead federal agency is responsible for initiating ESA consultation with the Services for formal consultations. Formal consultations are those where an analysis of the project determines that the project is Likely to Adversely Affect (LTAA) a listed species. Informal consultations are those where an analysis determines the project is Not Likely to Adversely Affect (NLTAA) listed species.

For species that are proposed for ESA listing, formal ESA conferencing is required for federal actions likely to jeopardize the continued existence of proposed species or adversely modify proposed critical habitat. The lead federal agency may request a formal conference for a project that warrants a conditional effects determination of LTAA for proposed species or critical habitat. WSF or the lead federal agency may request informal conference for projects when a species listing is imminent and the effects analysis concludes that a provisional NLTAA is appropriate. This Biological Assessment Reference (BAR) will be updated with information on species that are listed or proposed for listing, critical habitat that is designated or proposed for designation, baseline conditions, and effects analysis on an annual basis, as individual projects go through consultation, or as species and critical habitat listings change.

1.2 Essential Fish Habitat

The Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act of 1996, requires that federal agencies consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). This BAR includes a discussion of EFH in the project areas for each

facility including groundfish, coastal pelagic, and salmon species. The analysis includes avoidance and minimization measures (MMs) that are generally incorporated into WSF project design and construction.

1.3 Biological Assessment Reference

1.3.1 Purpose

In the last decade of ESA consultations, WSF has submitted dozens of BAs that contain nearly identical information and analysis of WSF projects. Regardless of the size of the project, in-water construction methods are similar among most marine construction projects, and include activities such as pile driving, pile removal, and building of facility components such as wingwalls and dolphins.

The purpose of this BAR is to streamline the preparation of BAs in support of WSF's capital and preservation programs. It describes common terms used in the WSF system, the most commonly used construction methods, and potential effects on listed species from those methods. It also provides baseline conditions at each facility. For individual projects, WSF will submit a WSF Capital, Repair, and Maintenance Projects BAR Project Form (Project Form) that contains specific information needed to complete ESA consultation for that project (see Appendix A).

The benefits of this BAR include reducing the amount of written material generated for the ESA consultation process, reducing the time and costs associated with producing individual BAs for each project, and reducing the amount of paperwork reviewed by the federal action agency and the Services.

1.3.2 Contents

Chapters in this BAR are summarized below:

- Chapter 2 includes a detailed discussion of standard WSF marine construction methods and the MMs employed to protect water quality and marine life.
- Chapter 3 details potential effects to listed threatened and endangered species and critical habitats from various construction activities (such as turbidity and noise).

- Chapter 4 provides current environmental baseline information specific to each WSF location including chemical, physical, and biological indicators and also provides the distribution of ESA-listed species and critical habitat.
- Chapter 5 contains references for this BAR.
- Appendix A is a blank Project Form that will be submitted for individual projects.
- Appendix B provides a discussion of ESA-listed species biology.
- Appendix C provides species lists obtained from NMFS and USFWS.
- Appendix D describes EFH that occurs at WSF facilities.
- Appendix E provides figures of the existing stormwater drainage and treatment at WSF facilities.

A typical project-level WSF BA contains the following information based on the proposed action:

- Project description and schedule
- Construction methods and MMs
- Action area
- Environmental baseline in the action area
- Species occurrence and distribution in the action area
- Effects of project construction on species and critical habitat including direct and indirect effects
- Effects determinations
- Discussion of interrelated/interdependent actions
- Cumulative effects (if formal consultation)
- Appendices:
  - Species lists
  - Species biology
  - EFH
  - EFH effects analysis

Table 1-2 compares the contents of a typical project-level WSF BA, the information included in this BAR, and the contents of the Project Form that will be provided to the lead federal agency or the Services for each project.

Table 1-2
Comparison of Information in the BAR

Typical Project-level WSF BA Contents	BAR Contents	Project Form Contents
Project description and schedule		X
Construction methods and MMs	X	
Action area		X
Environmental baseline	X	X[1]
Species occurrence and distribution in the action area	X	
Effects of project construction on species and critical habitat	X	
Effects determinations		X
Interrelated/interdependent actions		X
Cumulative effects (if formal consultation)		X
Species lists	X	
Species biology	X	
EFH	X	
EFH Effects Analysis		X

1 The baseline information in the BAR covers only the immediate terminal areas and therefore may need to be expanded on the project form depending on the extent of the action area

1.3.3 ESA-Listed Species Included in this Analysis

NMFS and USFWS species lists were reviewed to identify ESA-listed species that may occur near WSF facilities. In this review, it was determined that the presence of terrestrial species, insects, and certain other listed species in the action areas is extremely unlikely; therefore, they are not further addressed in thE BAR.

Species addressed in the BAR are listed in Table 1-3, and further described in Chapter 4. WSF will update and modify (if necessary) the species list on an annual basis, as individual projects go through consultation, or as species listings change. These species include fish, bird, and marine mammal species that could occur in the action areas during construction. The presence (or lack of presence) of each list species is discussed in the terminal specific sections of the BAR.

Table 1-3
ESA-listed Species/Critical Habitat Addressed in the BAR

Species/Habitat	Status	Agency
Killer whale (*Orcinus orca*)	Endangered (Southern Resident DPS)	NMFS
Killer whale critical habitat	Designated (Southern Resident DPS)	NMFS
Humpback whale *(Megaptera novaeangliae*)	Endangered	NMFS
Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*)	Threatened (Puget Sound ESU)	NMFS
Puget Sound Chinook salmon critical habitat	Designated (Puget Sound ESU)	NMFS
Hood Canal summer chum salmon[1] *(O. keta)*	Threatened (Hood Canal ESU)	NMFS
Hood Canal summer chum salmon critical habitat[1]	Designated (Hood Canal ESU)	NMFS
Steelhead *(O. mykiss)*	Threatened (Puget Sound DPS)	NMFS
Steelhead critical habitat[2]	Designated (Puget Sound DPS)	NMFS
Bocaccio (*Sebastes paucispinis*)	Endangered (Georgia Basin DPS)	NMFS
Yelloweye rockfish (*Sebastes ruberrimus*)	Threatened (Georgia Basin DPS)	NMFS
Rockfish critical habitat	Designated (Georgia Basin DPS)	NMFS
North American green sturgeon (*Acipenser medirostris*)	Threatened (Southern DPS)	NMFS
North American green sturgeon critical habitat[2]	Designated (Southern DPS)	NMFS
Pacific eulachon (*Thaleichthys pacificus*)	Threatened (Southern DPS)	NMFS
Pacific eulachon critical habitat[2]	Designated (Southern DPS)	NMFS
Marbled murrelet *(Brachyramphus marmoratus)*	Threatened	USFWS
Marbled murrelet critical habitat[2]	Designated[1]	USFWS
Bull trout *(Salvelinus confluentus)*	Threatened (Coastal-Puget Sound DPS)	USFWS
Bull trout critical habitat[3]	Designated (Coastal-Puget Sound DPS)	USFWS

Notes:
ESU - Evolutionary Significant Unit
DPS - Distinct Population Segment
[1]Port Townsend terminal only
[2]Not present at any WSF terminal/facility
[3]Clinton, Mukilteo, Edmonds, Seattle, Fauntleroy and Point Defiance terminals only

1.3.4 Biological Assessment Reference Development History

The concept of a BAR was developed in coordination with the USFWS, NMFS, FHWA, and the Corps. WSF initially presented the BAR concept at the June 23, 2008, pre-BA meeting in Lacey, Washington, to the Services and FHWA. A draft final revision of the June 2009 BAR was presented at the July 21, 2011, pre-BA meeting. The BAR was revised in April 2012, January 2014 and May 2019.

1.4 Use of the Biological Assessment Reference

For individual WSF projects, WSF will submit a Project Form to the lead federal agency (if formal) or directly to the Services (if nonfederal designee status applies) to initiate the ESA consultation process. The Project Form (included in Appendix A) will include the following additional information, which is described in further detail below:

1. Project description and schedule
2. Project action area
3. Updated species or habitat information
4. Effects determinations for species and critical habitat
5. EFH effects analysis

1.4.1 Project Description and Schedule

The project description will include an overview of the proposed project, schedule, and any proposed offsetting measures. The project description will provide a detailed discussion of all proposed project activities and will rely on this BAR to provide specific detailed construction methods such as pile driving and building typical WSF structures. The discussion will contain project-specific information including, but not limited to:

- Location and size of project structures including number and diameter of piles to be installed and removed, type of piles/materials to be used, construction equipment needed, and any necessary temporary structures.

- Proposed upland work including a description of new impervious surfaces, proposed stormwater treatment, and a stormwater analysis based on the most recent WSDOT/FHWA interim stormwater guidance or latest agreed-upon stormwater guidance.
- Construction schedule and project timing.
- Unusual construction techniques not discussed in the BAR and any associated MMs.
- Project drawings and photos (if available).

1.4.2 Project Action Area

The project action area will be based on specific construction activities. In the case of in-water work, the action area will likely be based on noise generated by pile installation, but could be based on other construction activities that generate turbidity or other disturbance of aquatic or terrestrial species.

1.4.3 Environmental Baseline

WSF will review the environmental baseline information provided in the BAR and expand it if necessary based on the extent of the action area for individual projects.

1.4.4 Updates to Species or Habitat Information

WSF will review Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) maps, and consult with resource agencies and/or tribal biologists to identify whether new information on listed species is available. Any new species information will be included in the Project Form.

1.4.5 Effects Determinations for Species and Critical Habitat

An effects determination for listed or proposed species will be included. Direct and indirect effects such as noise and turbidity are described in this BAR and will be identified on the Project Form. Interrelated and interdependent actions and cumulative effects (if formal) will be described in the Project Form. This section will also identify whether informal or formal consultation and/or conferencing is being requested.

1.4.6 EFH Effects Analysis

A brief analysis of effects to EFH will be included, which will identify EFH in the action area, effects, and any MMs not described in this BAR.

1.5 Maintaining the Biological Assessment Reference

The 2019 version of the BAR will be an on-line document, available at the WSDOT ESO web page. This will allow the BAR to be a "living document" that will be revised as new information becomes available. Updates to the document will be necessary when, for example, new information becomes available for each terminal, construction methodologies change, the species listing statuses change, or critical habitat designations change. (listings, de-listings, new critical habitat designations). WSF will consult with WDFW or other resource agencies and/or tribes during preparation of individual Project Forms to ensure that the most current information is provided to the Services.

WSF is in the process of building a new Mukilteo terminal. When that terminal is fully operational (planned for 2020), and the old terminal is no longer in use, the BAR will be updated to provide information on the new terminal location.