

# Washington State Ferries - Long Range Plan Scope of Work

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## Introduction and Objectives

The purpose of the project is to prepare an update to the Washington State Ferries (WSF) Long Range Plan (LRP) in accordance with direction from the Washington State Legislature. Selected key legislative directives specifically related to this LRP update include ESHB 2358 addressing level-of-service standards, operational strategies and fares, and RCW 47.60.237 addressing operational strategies for asset utilization. The last update to the WSF LRP was conducted in 2009. Since that time, WSF has implemented many of the recommended adaptive management strategies outlined in the plan such as a vehicle reservation system on selected routes, and modified pricing strategies and has continued to address its aging fleet through the construction of four new Olympic class vessels two of which are now in service.

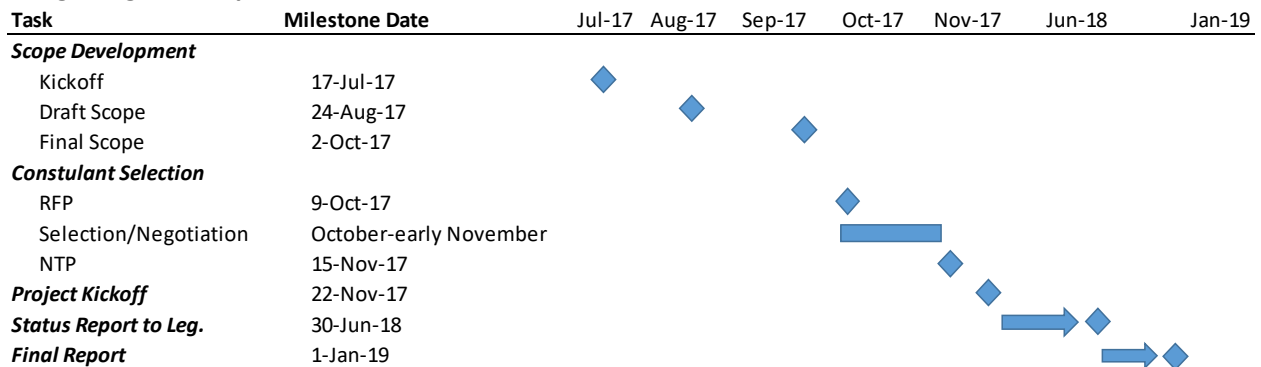
This update to the WSF LRP will consider the future of the system between 2017 and 2040 and will include the following major activities:

- Updating market understanding through the collection of data and analysis of demographics, travel patterns, population and employment growth patterns, and use of the WSF model to produce ridership forecasts;
- Analysis and documentation of vessel replacement needs and identifying the implications to maintenance and reliability of operating vessels beyond typical retirement age;
- Development and evaluation of alternative operating plans and supporting technologies to determine the most effective and cost-efficient way to meet current and future demands;
- Review and update of adaptive management practices identifying lessons learned and opportunities for expanded implementation;
- Assessment of recent changes in technology for potential to improve delivery of capital projects and service;
- Review and assessment of technology trends to identify the potential for disruptive technologies to change travel patterns, modes use or access to terminals, or WSF operations;
- Development of key performance metrics that will help document WSF's progress towards meeting their vision and goals;
- Analysis of the long-term financial outlook for the system identifying critical gaps and issues;
- Development of a capital plan for the agency;
- Assessment of the current state of the agency's resiliency plans and development of proposed modifications;
- Assessment of the current state of the agency's sustainability and climate change adaptation plans and development of proposed modifications;
- Assessment of the ability of the maritime industry to support construction and maintenance of the WSF existing and potential future fleet;
- Assessment of any major workforce development issues;
- Assessment of the regulatory outlook and identify the implication for WSF operations; and,
- Assessment of intermodal operations at WSF terminals and recommend modifications.

## Project Schedule

WSF has been directed by the Legislature to complete the update to the LRP by January 2019 with an interim status report in June 2018. The following schedule provides a very high-level outline of the major elements of the project schedule with the bulk of the work being completed in the 2018 timeframe.

### Long-Range Plan Update Timeline



## General Assumptions

The following are general project assumptions for the Scope of Work; other assumptions are found within the project tasks.

1. This Scope of Work is premised on an approximately 14-month project duration for deliverables preparation. The CONSULTANT's ability to meet this schedule is contingent upon timely receipt of information and/or comments from the STATE and/or third parties.
2. Work performed will be in accordance with STATE standards.
3. Deliverables will be provided electronically by email in PDF, PPT, MDB, or MS Office compatible format.
4. Task numbers presented in this scope of work are not intended to imply a specific order of completion. The CONSULTANT will work with WSF when developing the project schedule to identify the timing of individual tasks to meet the needs of the project and reporting requirements to the legislature.

## Proposed Work Program by Task

The following provides a detailed description of the tasks to be completed by the CONSULTANT during the course of the WSF LRP update.

### Task 1.0 Project Organization, Control, and Strategic Management

This task includes the work necessary to set up and plan the project and establish project-specific procedures, including communications, quality control (QC), overall project coordination, and project closeout. This task will be continual throughout the project duration.

The CONSULTANT will provide overall project administration and management for the duration of the project. For budgeting purposes, the duration assumed for this Scope of Work will be approximately 14 months.

The CONSULTANT will develop a project baseline that includes scope, schedule, and budget information for review and approval by the STATE. Schedule information for the project baseline will include project milestones. Effort associated with this work will be included in the associated management tasks.

#### 1.1 Prepare Project Management/Quality Control Plan

The CONSULTANT will prepare a Project Management/Quality Control Plan that will include the following components:

- Project scope of work
- Project schedule
- Team roles, work assignments and organization
- Team meetings and coordination
- Communication protocols
- Report templates
- Monthly progress and performance reporting
- Records management
- Change control procedures
- Diversity and small business program management
- Quality assurance and control
- Closeout of the project

#### 1.2 Prepare and Update Schedule

The project schedule will detail the critical path elements of this scope of services and will include known constraints, linkages, WSF reviews, QA/QC reviews and applicable deliverables and milestones. The schedule will be updated on a regular basis as necessary and made available to WSF upon request.

#### 1.3 Consultant and Subconsultant Team Management

The CONSULTANT will manage the study scope, schedule, and budget. Monthly schedule updates and budget analysis will be conducted and made available to STATE upon request and summarized in the monthly progress reports. Changes in scope, schedule, and/or budget, if any, will be tracked and discussed with STATE as they arise for immediate resolution.

#### *Assumptions:*

- Contract management activities and this study are expected to conclude in January 2019.

#### **1.4 Contract Administration/Progress Reports**

Monthly invoices and back-up will be prepared in accordance with the format agreed upon by the STATE.

Progress reports will describe the work accomplished during the billing period, including the status of individual tasks, meetings attended, and action or information needed from the STATE. Progress reports will also indicate work to be accomplished during the next billing period and issues that have arisen, if any. Progress reports will be submitted to the STATE with the monthly invoice.

The CONSULTANT will manage subconsultants with the same approach and objectives as indicated for the prime's project team. In addition, this Task will include reviews of the subconsultant's progress, invoices, and work completion on various project elements.

##### ***Assumptions:***

- Up to fourteen progress reports and invoices will be provided

##### **Deliverables:**

- Draft and Final Project Management/Quality Control Plan
- Project Schedule, updated monthly as needed
- Monthly Invoices and Progress Reports and Quarterly Cost-at-Completion estimates
- Project Meeting Summaries

#### **Task 2.0 - Review 2009 LRP and Summarize Implementation Progress**

The CONSULTANT will review action items included in the 2009 plan and document progress to-date for each of the major categories such as:

- Capital investments (vessels, terminals, maintenance facilities, etc.)
- Level-of-Service (LOS) standards
- Adaptive management strategies (pricing, reservation, etc.)

The CONSULTANT will interview WSF management representatives and members of stakeholder advisory groups to assess effectiveness of action items included in the 2009 LRP and identify lessons learned and future opportunities for improvement.

**Deliverables:** Draft and Final Technical Memorandum – Review of 2009 LRP Implementation

#### **Task 3.0 Adaptive Management Operational Strategy Update**

The CONSULTANT will prepare an assessment of strategies undertaken to date and conduct an assessment of potential new adaptive management strategies based the review of the implementation of the 2009 LRP from Task 2.0, updated market knowledge generated from Tasks 6.0, and information from the technology assessment completed in Task 12.0. Topics to be addressed include:

- Identification of potential new adaptive management strategies and pricing mechanisms
- Evaluation of new strategies in concert with operational solutions

- Recommendation of potential additions or changes to the list of strategies contained in the 2009 Joint WSF/WSTC Recommendation on Adaptive Management Strategies

This task assumes regular coordination with the WSTC throughout the course of the analysis.

**Deliverables:** Draft and Final Technical memo – Adaptive Management Strategies Update

#### **Task 4.0 – Emergency Preparedness and Seismic Vulnerability**

The CONSULTANT will review existing information on the seismic vulnerability of WSF facilities and operations and preparedness for a response to a major seismic event. The CONSULTANT will review findings of the 2016 Cascadia Rising Exercise and document WSF's role in providing marine transportation in the wake of a major disruptive event (e.g. earthquake) and, in particular, its impact to cross-sound bridges. The CONSULTANT will identify key organizational partners and make recommendations to improve the agency's emergency preparedness, resiliency, and ability to maintain operations in the case of a major disruptive event.

**Deliverables:** Draft and Final Technical Memorandum – Emergency Preparedness and Seismic Vulnerability Analysis

#### **Task 5.0 – Resiliency, Climate Adaptation and Sustainability Analysis**

The CONSULTANT will assess the magnitude of forecasted climate change impacts that will be experienced by the WSF system during the study period, including potential for increased frequency of severe weather incidents, rising sea levels, etc. The CONSULTANT will make recommendations to improve the resiliency of the agency and its ability to maintain operations. The CONSULTANT will also assess potential impacts of state policy emphasis on carbon reductions on WSF operations and investments and perform a high-level sustainability assessment as an input to the major draft plan elements.

**Deliverables:** Draft and Final Technical Memorandum – Resiliency, Climate Change and Sustainability Analysis

#### **Task 6.0 - Market and Demographic Analysis**

The CONSULTANT will refresh existing data sources such as the 2013 O-D survey with supplemental research and summarize historical, current and future year characteristics of WSF customer base by route and terminal. The following activities will be conducted as part of this task:

- Review of Census data to identify key shifts in demographics and travel behavior over time (journey to work) by WSF Route
- Evaluate the potential implications of aging populations on the frequency of medical emergency transportation needs and WSF policies
- Implementation of an on-line survey with WSF customers leveraging the Ferry Riders Opinion Group (FROG), email list of participants from the 2013 O-D Survey, or other avenues to identify ferry users. (This task should be scheduled for early execution to take advantage of the opportunity to coordinate with a planned 2018 FROG survey.)
- Analysis of the 2013 O-D survey and supplemental survey results to better understand historical, current and future characteristics of WSF ridership

- Review and analysis of key demographic forecasts for ferry communities from the Office of Financial Management and local Metropolitan Planning Organizations
- Review of employment and housing trends (especially costs) within the primary frequent user market sheds by route
- Review and documentation of the characteristics of freight movements by route.

**Deliverables:** Draft and Final Technical Memorandum - Market and Demographic Analysis

### **Task 7.0 – Summarize Related Plans and Projects**

The CONSULTANT will review planning documents from relevant agencies (regional and local transit, WSDOT, relevant counties and cities) to identify key planned projects (e.g. roadway or transit projects) that could affect WSF customers by hampering or improving access to terminals or by providing new travel options to WSF customers.

**Deliverables:** Draft and Final Technical Memorandum – Summary of Related Plans

### **Task 8.0 – WSF Long-Range Strategic Management Workshop**

The CONSULTANT will facilitate a WSF management exercise to refine the core agency strategic management direction within the context of legislative directives going forward that will inform and guide the elements included in the Long-Range Plan update. The CONSULTANT will facilitate two ½ day workshops with WSF management staff to generate, refine and finalize a selected vision for WSF going forward over the next 20 years.

**Deliverables:** Draft and Final Technical Memorandum – Summary of Strategic Management Workshop

### **Task 9.0 – WSF Workforce Assessment**

The CONSULTANT will review the current state of the WSF workforce identifying potential key issues related to the characteristics of the existing workforce that pose risks for the implementation of the long-range plan. In particular, retirement eligibility will be assessed by job category and an assessment will be made regarding the risk to WSF operations. The CONSULTANT will identify barriers and opportunities for hiring new fleet employees.

**Deliverables:** Draft and Final Technical Memorandum – Workforce Assessment

### **Task 10.0 - Review and Update Performance Measures**

The CONSULTANT will review and document the current WSF performance measurement program and standards identifying gaps, additions or changes to key metrics that would guide LRP implementation. The CONSULTANT will evaluate the methodology, current and expected levels-of-service on each route against the adopted standards and identify deficiencies. This task will be conducted early on in the project timeline to allow for input from key legislative stakeholders.

**Deliverables:** Draft and Final Technical Memorandum - Level-of-Service Assessment, Performance Standards and Measures

## **Task 11.0 – Evaluation of Vessel Lifespan, Maintenance, Preservation and Reliability Trends and Requirements**

Coordinating with ongoing WSF asset management work, the CONSULTANT will review and analyze historical maintenance and preservation data for the existing fleet to document patterns in regular and unplanned maintenance activities and cost with respect to vessel lifespan and level of historical maintenance activities. Current assumptions of a 60-year lifespan will also be compared against other vessel operators. The CONSULTANT will discuss the implications of the analysis results for WSF future vessel maintenance and preservation costs and reliability based on vessel age, type and history of maintenance activity. The CONSULTANT will also identify the implications to fleet size requirements to accommodate planned and unplanned maintenance while meeting scheduled sailings.

**Deliverables:** Draft and Final Technical Memorandum – Evaluation of Vessel Lifespan, Maintenance, Preservation and Reliability

## **Task 12.0 - Technology Assessment**

The CONSULTANT will identify and evaluate opportunities to use technology to improve cost efficiencies in the following areas:

- Terminal investments which would improve throughput and/or labor efficiency
- Vessel investments which would increase labor and/or non-labor efficiency within Coast Guard regulatory constraints, such as new vessels technologies and other design improvements to speed load and unload, automation of functions and alternative fuel options such as LNG, diesel/electric hybrid, full electric, or other emerging fuel/propulsion systems
- Information Technology investments which would improve efficiency and/or customer experience in areas such as customer service, vessel scheduling, the selling and collection of fares, an integrated fare/reservation system that could potentially be used for all routes, vehicle measurement systems for fare determination, loyalty programs and real-time travel information sharing including the potential to coordinate with transit partners, their systems and mobile apps
- Review state of the practice from other systems in North America
- Look for opportunities to integrate with ORCA fare payment system
- Identify communities within WSF market sheds that have limited access to wireless technologies and evaluate the implications for WSF technology strategy

The CONSULTANT will also conduct a broad technology review and assessment to identify the potential for disruptive technologies to change WSF customer travel patterns, travel modes or impact operations (e.g. the potential impact of autonomous vehicles and transportation network companies such as Uber and Lyft on walk-on pick-up/drop off demand and space requirements at terminals or mode share on vessels).

**Deliverables:**

- Draft and Final Technical Memorandum - Technology Assessment
- Interim Report to assist WSF in 2019-2021 Biennial Budget Request

### **Task 13.0 – Strategies to Improve Cost Efficiencies**

The CONSULTANT will explore strategies to improve WSF efficiencies by reducing costs or constraining cost growth in key WSF cost centers in both the operating and capital programs. This task will be informed by work completed for Task 12.0 - Technology Assessment and will include the following:

- Identification of the key cost drivers for WSF in both the capital and operating programs
- Determination of the degree to which the key cost drivers are affected by policy, regulatory, and management decisions
- Identification of potential strategies and/or reforms that could either reduce costs or reduce the rate of growth in key cost centers
- Identification of opportunities for public private partnerships

**Deliverables:** Draft and Final Technical Memorandum - Cost Efficiency Opportunities

### **Task 14.0 – Coordinate with WSF Ridership Forecasting Model Update**

The CONSULTANT will coordinate with the team updating the WSF long-range ridership forecasting model and utilize model results in the LRP to inform Tasks 15.0, 16.0 and 17.0.

**Deliverable:** none

### **Task 15.0 – Evaluation of Terminal Conditions and Maintenance/Preservation Requirements**

The CONSULTANT will review and assess WSF terminal facilities, parking, land-use, and access (roadway, electrical, sidewalk, trails, transit facilities, etc.) for their current condition including age, state of repair, time since last major project, and any existing plans for major changes or improvements. Historical maintenance and preservation data will be reviewed to document patterns in regular and unplanned maintenance activities and cost with respect age of the facility and level of historical maintenance activities. The CONSULTANT will discuss the implications of the analysis results for WSF future terminal maintenance and preservation costs and operational reliability. This task will inform Task 16.0. The CONSULTANT will also address parking demand and management strategies by terminal.

**Deliverables:**

- Draft and Final Technical Memorandum – Evaluation of Terminal Conditions and Maintenance/Preservation Requirements
- Draft and Final Technical Memorandum – Assessment of Parking Needs and Parking Management Opportunities at WSF Terminals

### **Task 16.0 - Route-by-Route Operational Analysis**

The CONSULTANT will develop alternative operating scenarios for how best to meet future demands (based on ridership forecasts from Task 14.0) on a corridor, route and travel shed basis. The task will include the following:

- Assessment of optimal vessel and service configurations for each route/corridor
- Review and integration with applicable WSDOT Corridor Sketch plans



- Identification of available opportunities to improve integration with landside facilities and services
- Analysis of fleet deployment and service optimization
- Assessment of the flexibility of existing loading rules/policies and procedures
- Consideration of options that make the best use of existing terminal assets.

The analysis of each route in isolation is intended to serve as an input and reference point for the development and assessment of WSF service scenarios that will be prepared under Task 17.0.

**Deliverables:** Draft and Final Technical Memorandum - Corridor Options Analysis

### **Task 17.0 - Develop and Assess WSF service scenarios**

The CONSULTANT will develop and assess different system-wide operational configurations by mixing and matching the best options from the corridor analysis performed in Task 16.0. The result of this effort will be the identification of a short-list of potential long-term operational scenarios. The description of each scenario will include several components, such as:

- Ridership projections
- Operational plans
- Cost of operations
- Vessel deployment plan by route, season (including retirement/replacement schedule)
- Capital program implications
- Funding implications including alternative fare policy scenarios
- Major modifications required for WSF terminals.

**Deliverables:** Draft and Final Technical Memorandum – System-Wide Service Scenarios

### **Task 18.0 – Vessel Functional Requirements**

Informed by the tasks addressing technology evaluation (Task 12.0), route-by-route operational analysis (Task 16.0) and service scenarios (Task 17.0), the CONSULTANT will work with WSF to develop a set of functional requirements for any recommended new vessels. The CONSULTANT will work with WSF departments to define a level of specificity for the vessel functional requirements consistent with the level of detail appropriate for a long-range planning effort, but will include at a minimum:

- Vehicle carrying capacity (by vehicle class)
- Passenger carrying capacity
- Propulsion system (if different from current fleet e.g. LNG, hybrid or all electric)
- Service Speed
- Ability to serve as an emergency replacement vessel
- Crew levels

This set of capacity and performance requirements will form the basis from which WSF can initiate detailed vessel design and procurement activities in subsequent projects.

**Deliverables:**

- Draft and Final Technical Memorandum: - Vessel Functional Requirements
- Interim Report to assist WSF in 2019-2021 Biennial Budget Request

## **Task 19.0 - Baseline Capital and Operating Financial Model**

The CONSULTANT will prepare a detailed capital and operating plan based on identified annual service levels, costs of operations and a capital plan describing annual investment needs for preservation and improvements through 2040. The program will include baseline capital needs for terminals, vessels and technology investments (new systems and replacement of existing systems).

### **Deliverables:**

- Draft and Final Technical Memorandum – Capital and Financial Modeling
- Updated Financial Model

## **Task 20.0 - Develop Draft Plan**

The CONSULTANT will screen the draft service scenarios identified in Task 17.0 down to a preferred option. The Draft Plan could include one or more variations on the preferred option for public and stakeholder review. Elements of the plan will include:

- A financially unconstrained vision section that serves as means to document aspirational plan elements put forth by WSF staff or project stakeholders. (The remainder of the plan will be developed under a financially constrained set of assumptions.)
- Balancing system-wide and travel shed needs with individual route solutions
- Ridership projections from the WSF model, by season, mode and route
- The preferred operational plan showing vessel hours by route and by season, including a phasing plan for changes in service over time
- Identification of recommended operational and cost efficiency strategies
- Cost of operations, including integration of potential cost savings from efficiency measures
- Vessel plan identifying the sizing and timing of vessel acquisition related to pending vessel retirements and/or capacity needs. Functional requirements of vessels (speed and capacity attributes) will be identified.
- Capital investment plan integrating the base preservation program, an updated vessel acquisition plan, terminal improvements and major technology investments. The scope of large-scale projects identified in the capital plan will be reviewed as to their consistency with WSDOT's Practical Design framework.
- Funding implications including proposed fare policy assumptions to identify subsidy needs for operations and identification of long-term capital funding needs.
- Identification of near-term actions that can be implemented within the first three years of the LRP.
- Integrate with the WSF headquarters location study

### **Deliverables:**

- Draft and Final Interim Report to Legislature (due June 30, 2018)
- Draft Long Range Plan with Technical Appendices

### **Task 21.0 - Develop Final Plan**

The CONSULTANT will develop a final plan based on public and stakeholder comment on the draft, including any direction from the legislature. The Final Plan will include a discussion of the public outreach process, a summary of the feedback that was gathered, and provide a justification for changes made to the Draft Plan.

**Deliverables:** Final Long Range Plan with Technical Appendices (due January 1<sup>st</sup>, 2019)

### **Task 22.0 - Stakeholder and Community Involvement.**

The CONSULTANT will coordinate with and support on-going WSF community outreach efforts providing technical support in the form of summary materials suitable for stakeholder and community groups involved with the LRP update process. The CONSULTANT should assume required attendance at up to 24 stakeholder meetings during the course of the project.