Washington State Ferries
2040 Long Range Plan

Technical and Policy Advisory Group

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July 19, 2018
Agenda

• Welcome and introductions
• Progress report to Legislature
• Review Draft Plan elements
  – Reliable service
  – Manage growth
• Lunch break
• Review remaining Draft Plan elements
  – Customer experience
  – Sustainable and resilient system
  – Budget and investment needs
• Discuss fall community engagement plan
• Next steps
Timeline

Key Milestones

2017
- Technical Advisory Group
- Policy Advisory Group
- Executive Advisory Group
  - Kickoff stakeholder advisory groups
  - Provide background information

2018
- January
  - Technical Advisory Group
  - Policy Advisory Group
  - Executive Advisory Group
  - Review work plan
  - Review ridership forecast data
  - Learn about the WSF budget

- March
  - Technical Advisory Group
  - Policy Advisory Group

- May
  - Technical and Policy Advisory Group
  - Review plan elements
  - Public Meetings*

2019
- June
  - Executive Advisory Group
  - Legislative progress report
  - Draft plan elements

- July/August
  - Technical Advisory Group
  - Policy Advisory Group
  - Executive Advisory Group
  - Draft plan elements

- September/October
  - Public 45-day comment period
  - Public Meetings*

- November/December
  - Technical Advisory Group
  - Policy Advisory Group
  - Executive Advisory Group
  - Finalize plan
  - Deliver final plan by Jan. 1

Public Information and Outreach

*Rounds of public meetings in ferry served communities and online open house.
Progress report to Legislature

Preliminary findings and strategies:

- Near term: Stabilize the fleet by building five new vessels.
- Implement technology and adaptive management strategies to ease congestion.
  - Expand reservations.
  - Leverage vessel replacements to increase capacity.
- Invest in technology to enhance customer experience.
- Invest in workforce development to ensure system reliability for future generations.
- Establish training and mentorship program.
Reliable service

Manage growth

Customer experience

Sustainability and resilience
Service and terminal enhancements by 2040
Draft plan implementation timeline

**2020**
- Fauntleroy/Vashon/Southworth decision milestone
  - New vessels (124)
  - Southworth 2nd slip and Fauntleroy terminal improvements

**2025**
- Edmonds/Kingston decision milestone
  - New vessels (144 or 202)
  - Edmonds terminal improvements

**2030**
- Increase vessel capacity: San Juan Inter-Island
  - Add service hours: Anacortes/San Juan Islands, Fauntleroy/Vashon/Southworth (winter/spring/summer & 2-season schedule)
- Increase vessel capacity: Mukilteo/Clinton (fall/winter/spring)
  - Add service hours: Port Townsend/Coupville (spring/summer)

**2035**
- Increase passenger capacity: Seattle/Bainbridge and Seattle/Bremerton

**2040**
- Increase vessel capacity: Edmonds/Kingston (Option A: third vessel)

**SERVICE CHANGES**
- Add service hours: Port Townsend/Coupville (1+2 hours to Summer #2 vessel)

**NEW BUILD PROGRAM**
- Decision milestone: New vessels (Olympic Class)

**FLEET MODIFICATIONS**
- Jumbo Mark II Hybrid Electric Conversion: 5 new Olympic Class
- 4 new vessels (124)
- Option A: 7 new vessels (144)
- Option B: 6 new vessels (two 202 and four 144)

**SUMMER RELIEF VESSEL COUNT**
- Includes maintenance and service relief vessels; 6 total needed

**TERMINAL PROJECTS**
- Bainbridge
- Clinton
- Edmonds
- Fauntleroy
- Lopez
- Mukilteo
- Colman Dock
- Anacortes
- Southworth
- Friday Harbor
- Terminal electrification (18 terminals)

Washington State Ferries 2040 Long Range Plan
Questions?
Reliable service—Stabilize the system to maintain reliable service through 2040.

Draft Plan recommendations:

- Stabilize the fleet by building new vessels.
- Maintain and improve terminal efficiency.
- Develop workforce.
Draft Plan recommendations:

- **Near-term:**
  - Build five new vessels.
- **Long-term:**
  - Comprehensive construction program.
- **Review policies:**
  - Vessel lifespan
  - Contracting restrictions
  - Vessel procurement processes
  - Performance measures

Top reasons for service cancellation:

- Vessel/mechanical: 116 (49.6%)
- Weather/tides: 78 (33.3%)
- Emergency/security: 28 (12.0%)
- Crewing: 7 (3.0%)
- Other: 3 (1.3%)

Reliable service—Replace aging vessels to maintain reliable service.
Draft Plan recommendations:

• Build new vessels to provide reliable service during scheduled maintenance and allow for needed maintenance time.
• Plan more time for maintenance.
• Enhance service when relief fleet is complete.

<table>
<thead>
<tr>
<th></th>
<th>Fleet size</th>
<th>Planned maintenance weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing policy</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Long Range Plan recommendation</td>
<td>26</td>
<td>12</td>
</tr>
</tbody>
</table>
Draft Plan recommendations:

• Improve dwell time and reduce operational conflicts.
• Enhance multimodal connections.
• Add electric vessel charging and infrastructure.
• Establish dwell time performance measures.

Reliable service—Preserve and improve terminals to enhance safety and operations.
Reliable service—Invest in attracting, retaining, and developing workforce.

Draft Plan recommendations:

- Develop program to retain, recruit, train, and mentor staff.
- Update salary survey to reflect market conditions.

Deck officers eligible to retire within five years

- Master: 62%
- Chief Mate: 24%
- Second Mate: 14%

Engineers eligible to retire within five years

- Chief Engineer: 53%
- Asst Engineer: 25%
- Other: 22%
Manage growth—Invest in technology and adjust schedules to spread demand and encourage walk-on riders.

Draft Plan recommendations:
• Promote walking and biking to improve efficiency.
• Use technology to measure vehicle wait time.
• Evaluate expanding reservations.
• Further consider pricing demand management.
• Policy:
  – Add passenger level of service.
  – Measure space available for reservations.
  – Add wait time performance measure.
Questions?
Manage growth—Adjust schedules and vessel capacity to manage demand.

Draft Plan recommendations:

• Increase service hours.
  – Restore service hours.
  – Adopt two-season schedule.
  – Consider options for Central Sound routes.

• Strategically increase vessel capacity.
Manage growth—Adjust schedules and vessel capacity to manage demand.

Annual Vehicle Capacity Changes*

*Includes Option A for Edmonds/Kingston
Manage growth—Increase passenger capacity to encourage walking and biking.

Draft Plan recommendations:

- Increase passenger capacity on Bremerton and Bainbridge routes.

Peak sailing ridership with vessel passenger capacity increases

<table>
<thead>
<tr>
<th></th>
<th>Baseline PAX Capacity</th>
<th>Vessel Capacity Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea-Brem</td>
<td>1,458</td>
<td>1,800</td>
</tr>
<tr>
<td>Sea-Bain</td>
<td>2,126</td>
<td>2,400</td>
</tr>
</tbody>
</table>

2040 (PAX +Driver)
Manage growth—Spread demand and encourage walk-on ridership.

Draft Plan recommendations:

- Expand reservations.
- Consider pricing and fare structure.
- Partner with transit providers to improve multimodal connections.
- Give customers real-time trip planning information.
- Improve fare collection.
Questions?
Options for Central Sound routes — Edmonds/Kingston vessels

- Option A: Continue operating two large vessels.
- Option B: Replace two large vessels with a three mid-sized vessels.

<table>
<thead>
<tr>
<th>Option</th>
<th>Number of vessels in service</th>
<th>Vessel type</th>
<th>Per vessel vehicle capacity</th>
<th>Per vessel passenger capacity</th>
<th>Sailing frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Large</td>
<td>188/202</td>
<td>1800 / 2000</td>
<td>~Every 45-60 min</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>Medium</td>
<td>144</td>
<td>750 to 1200</td>
<td>Every 30 min</td>
</tr>
</tbody>
</table>
Options for Central Sound routes

- **Draft Plan options:**
  A. Replace two (2) large-vessel operation with a three (3) mid-sized vessel operation
  B. Maintain existing two (2) large-vessel operation

<table>
<thead>
<tr>
<th>System Element</th>
<th>2-Vessel Operation</th>
<th>3-Vessel Operation</th>
<th>Other/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>-</td>
<td>+</td>
<td>Increase in service hours</td>
</tr>
<tr>
<td>Transit Connections Synch</td>
<td>-</td>
<td>+</td>
<td>30 minute cycles synchs better with transit</td>
</tr>
<tr>
<td>System Congestion Relief</td>
<td>-</td>
<td>+</td>
<td><strong>Congestion relief for Kitsap routes</strong>— some diversion of growth from Bainbridge and Bremerton routes</td>
</tr>
<tr>
<td>Frequency of Service</td>
<td>-</td>
<td>+</td>
<td>Enhanced frequency of service (30 minute headway)</td>
</tr>
<tr>
<td>Operating Expense</td>
<td>-</td>
<td>$</td>
<td>Higher operating costs (+$3.2 M annually-offset by crew/energy/insurance)</td>
</tr>
<tr>
<td>Revenue Impacts</td>
<td>-</td>
<td>+</td>
<td>Increased revenue (~$2 M fare revenue)</td>
</tr>
<tr>
<td>Capital Cost</td>
<td>$</td>
<td>$</td>
<td>Terminal enhancements needed in either scenario and additional vessel</td>
</tr>
<tr>
<td>Terminal Impacts</td>
<td>-</td>
<td>$</td>
<td>Smaller pulses of traffic, 2 slips desirable</td>
</tr>
<tr>
<td>System Resilience and Fleet Configuration</td>
<td>-</td>
<td>+</td>
<td>Interchangeability and simplification of crew training/maintenance</td>
</tr>
<tr>
<td>Maintenance Requirements</td>
<td>-</td>
<td>$</td>
<td>Increases maintenance costs, no additional relief vessel</td>
</tr>
</tbody>
</table>
Options for Central Sound routes

Assessment:

- Congestion relief:
  - Additional capacity at Edmonds/Kingston.
  - Divert some growth from other routes.
- Preliminary net annual operating cost increase of (~$2.6 mil*).
- Additional vessel capital costs.
- System resiliency.

One-time capital costs
(In Millions)

- 3 Mid-Sized: $450
- 2 Large: $390

* Shown in 2019 constant dollars
Questions?
Customer experience—Use technology to enhance customer experience.

Draft Plan recommendations:

• Give customers better trip planning information.
  – Ticketing and reservation system.
  – Customer alerts.
  – Accurate terminal conditions and wait times.
  – Terminal wayfinding and real-time information.
  – Real-time parking information.
• Reduce wait times.
  – Improve terminal operations.
  – Increase service and maintenance relief vessels.
  – Upgrade technology.
Questions?
Sustainability and resilience—Green the fleet and reduce our environmental footprint

Draft Plan recommendations:

• Green the fleet.
  – Reduce fuel consumption.
  – Electrify fleet.
  – Quiet ferries to reduce impact to Orca whales.

• Promote walk-on ridership.

• Improve operational efficiency.
  – Reduce idle time for queued vehicles.
  – Improve buildings’ energy efficiency.

• Organizational strategy.
  – Baseline and reporting.
Projected CO2 emissions

Annual CO₂ Emissions
RCW 70.235.050 Reduction Requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2023</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Hybrid</td>
<td>0</td>
<td>5</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>Diesel</td>
<td>23</td>
<td>18</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Total Fleet Size</td>
<td>23</td>
<td>23</td>
<td>25</td>
<td>26</td>
</tr>
</tbody>
</table>

15% Reduction by 2020
36% Reduction by 2035
57.5% Reduction by 2050
Resilient system—Plan for emergencies and climate change to sustain reliable service through 2040

Draft plan recommendations:

• Plan for earthquakes and long term rising sea level.
  – Establish key routes for repair.
  – Identify and prioritize seismic upgrades.
  – Develop emergency response plan.
  – Explore alternative landing sites and loading methods.
  – Identify fuel supplier emergency access.
  – Increase fleet size for emergency relief.
  – Assess terminal elevation needs.
  – Evaluate design standards.
• Identify potential partners and funding sources.
Questions?
Investment and implementation—Plan for a safe, reliable, sustainable, and integrated system.

- Financial plan approach
  - Investments for near-term, mid-term, and long-term
  - Capital and operating costs
  - Revenue: Sources and uses
- Capital costs
  - Vessels
  - Terminals
  - Technology
- Operating costs
  - Labor increases
  - Fuel (Energy) decreases
  - Other
Investment and implementation—Preliminary capital costs

Vessels:
- 16 New vessels (hybrid-electric).
- 6 Existing vessel conversions.

Terminals:
- Operational improvements projects.
- 18 Terminal conversions and utility upgrades for electric charging.

Information technology:
- System upgrades and enhancements to support operations.

* Shown in 2019 constant dollars
Investment and implementation—Preliminary capital costs

Dollars by category and biennium:

2020-2040 Capital Investment Plan by Biennium

* Shown in 2019 constant dollars
Investment and implementation—Preliminary operational costs

Dollars by category and biennium:

2019-2040 Operating Investment Plan

* Shown in 2019 constant dollars
Cost efficiencies— in investment and operation.

Influential Factors:
• Policy
• Regulations
• Management Decisions
• Technology
• Other (market, labor practices, ridership, etc)

Draft plan recommendations:
• Capital
  – Policy/legislation
  – Vessel design
  – Resiliency and flexibility
• Labor
  – Crewing levels
  – Technology
• Fuel
  – Vessel operations
• Maintenance
  – Eagle Harbor workforce
  – Cost models
• Other
  – Energy efficient design
  – Partnerships
Questions?
Fall community engagement

- 11 system-wide open houses
- Expanded onboard outreach
- Online open house

WSFlongrangeplan.com
Look ahead

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