



# Ferry Maintenance Facility Siting Study - Appendices

June 2024



## APPENDIX A

### SUMMARY OF KT FERRY MAINTENANCE FACILITY NEEDS



## MEMO

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*Date:* May 15, 2024  
*To:* Kitsap Transit  
*From:* KPFF Consulting Engineers  
*Subject:* Kitsap Transit – Maintenance Facility Siting Study  
Establish Facility Programmatic and Operational Needs

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### Introduction

Kitsap Transit, supported by the KPFF consulting team, is conducting a Ferry Maintenance Facility Planning Study to locate potential sites, review and document site attributes, and assess the viability of alternatives for a Ferry Maintenance Facility. The ultimate goal of the study is to support the recommendation of a well-informed preferred alternative, or alternatives.

To support the development of a well-reasoned site evaluation and selection criteria, the KPFF team believes it is appropriate to first document the requisite maintenance and repair activities performed in support of reliable Kitsap Ferries operations, and to establish the programmatic and operational needs for a KT ferry maintenance facility. A workshop was held with KT staff and the consultant team on December 5, 2022, to discuss KT's current and planned maintenance activities and associated programmatic needs.

### Purpose

This memo documents our understanding of current KT vessel preventative maintenance and repair practices, as well as the desired maintenance and repair capabilities to be provided at a dedicated KT ferry maintenance facility, based on discussion during the 12/5/22 workshop, with the objective of providing KT with initial lists for team review and feedback:

1. A summary of ferry maintenance and repair activities
2. A first draft of facility programmatic and operational needs for KT review and feedback.

### Next Steps

The maintenance capabilities listed in this memo will be used to define maintenance facility programmatic requirements and the spatial needs for a unique facility that meets, or exceeds, the KT minimum expectations for a vessel maintenance facility. This information will inform the criteria used to assess the viability of potential site alternatives.

The next step in the process is for KT to review the two attachments and provide applicable feedback, aimed at correcting, adding, clarifying, or amplifying as appropriate. Feedback can come in whatever form is the most expedient for KT. If a working session would be preferable to provide this feedback, KPFF will be happy to set that up. With the goal of keeping the project moving, feedback is requested by the end of the calendar year.

## Attachment 1: Current Maintenance & Repair Activities

Vessel maintenance and repair activities are categorized below using the basic descriptions in the following table:

| Kitsap Ferries – Maintenance & Repair Activity Levels  |   |   |
|--|---|---|
| Routine  | Intermediate  | Extensive   |
| <ul style="list-style-type: none"> <li>Performed by maintenance staff; usually accomplished when vessel is out of service at homeport location.</li> <li>Employs no/minimal special tools or equipment.</li> </ul> | <ul style="list-style-type: none"> <li>Performed by maintenance staff with vendor support as necessary; usually accomplished at a maintenance facility with added tools/equipment when vessel is out of service.</li> </ul> | <ul style="list-style-type: none"> <li>Performed by personnel with special skills, equipment or facilities.</li> <li>Involves capital work requiring solicitation of bids from commercial shipyards.</li> </ul> |

### Routine Vessel Maintenance & Repair

Performed by KT maintenance staff at tie-up sites (Bremerton, Kingston & Port Orchard):

| Hull & Main Propulsion Systems   | Auxiliary Systems   |
|--|---|
| <ul style="list-style-type: none"> <li>Engine oil change</li> <li>Engine tune up &amp; Injector Replacement</li> </ul> | <ul style="list-style-type: none"> <li>Pump repair/replacement</li> </ul> |

### Intermediate Vessel Maintenance & Repair

To be performed by KT crew with construction of a dedicated maintenance facility:

| Hull & Main Propulsion Systems   | Auxiliary Systems  |
|--|--|
| <ul style="list-style-type: none"> <li>Hull inspections/damage repair (hull repair/welding to be contracted but completed on site)</li> <li>Waterjet maintenance/repair</li> <li>Bucket maintenance/repair</li> <li>Engine overhaul</li> <li>Propeller repair/replacement</li> <li>Shaft/bearing repair/replacement</li> <li>Rudder service/repair</li> <li>Pull/clean heat exchanger</li> </ul> | <ul style="list-style-type: none"> <li>Fuel oil systems repair/replacement</li> <li>Potable water system maintenance/repair</li> <li>Sewage system maintenance/repair</li> <li>Fire/bilge system maintenance/repair (welding)</li> <li>HVAC maintenance/repair</li> <li>Electrical systems (circuits, boards, etc.)</li> <li>Interior painting</li> <li>Swinging engines / battery replacement (overhead crane)</li> <li>Detailed interior cleaning</li> <li>Change foil</li> <li>Sewage/water oily water separator</li> </ul> |

### Extensive Vessel Maintenance & Repair

To be performed in a shipyard or drydock, and would continue to be contracted out by KT even after maintenance facility construction:

| Hull & Main Propulsion Systems  | Auxiliary Systems  |
|---|--|
| <ul style="list-style-type: none"> <li>Mid-life overhaul</li> <li>Exterior Painting/coatings</li> <li>Hull fittings (welding)</li> <li>Composite hull repair (could be performed on-site by contractor)</li> <li>Wood hull repair (could be performed on-site by contractor)</li> </ul> | <ul style="list-style-type: none"> <li>Hydraulic clean room</li> <li>Electronics repair (contracted)</li> <li>Safety equipment (work requiring certification)</li> </ul> |

## Attachment 2: Maintenance Facility - Desired Capabilities

Based on the list of routine and intermediate maintenance activities above, the following list of facility programming needs has been generated to support development of space type, size and layout criteria for the facility site assessment. Programming needs are grouped by 'minimum required' and 'nice to have' needs or spaces, with notes added where KT clarification would be helpful.

### In-Water

| <b>Minimum</b>  | <b>Nice to have</b>   | <b>Maintenance Activities Accommodated</b>  |
|---|---|---|
| <ul style="list-style-type: none"> <li>• 4 vessels berths (min. 140'x40' vessels)</li> <li>• Fresh water available</li> <li>• Sewage connections</li> <li>• Electrical/shore power connections</li> <li>• Vessel charging capability (min. one vessel)</li> </ul> | <ul style="list-style-type: none"> <li>• 6 vessel berths</li> <li>• Mobile crane with access to pier or wharf</li> <li>• Vehicle/truck access to vessel floats/wharf (<b>Note A</b>)</li> </ul> | <ul style="list-style-type: none"> <li>• Vessel moorage / water &amp; sewage / vessel shore power &amp; charging</li> <li>• Engine oil change</li> <li>• Engine tune up &amp; injector replacement</li> <li>• Pump repair/replacement</li> <li>• Interior vessel cleaning</li> <li>• Fuel oil systems repair/replacement</li> <li>• Potable water system maintenance/repair</li> <li>• Sewage system maintenance/repair</li> <li>• HVAC maintenance/repair</li> <li>• Electrical systems (circuits, boards, etc.)</li> <li>• Interior painting</li> </ul> |

### Vessel Yard / Laydown Area / Out-of-Water

| <b>Minimum</b>  | <b>Nice to have</b>  | <b>Maintenance Activities Accommodated</b>   |
|---|--|--|
| <ul style="list-style-type: none"> <li>• Hoist lift (min. 300-ton capacity with breadth for KT vessels) (<b>Note B</b>)</li> <li>• Laydown area for 2 vessels (min. 140'x40' vessels)</li> <li>• Mobile crane (<b>Note C</b>)</li> <li>• Parking (min. 6 stalls for maintenance vehicles, plus staff parking)</li> <li>• Delivery receiving area / lowboy load pickup zone</li> </ul> | <ul style="list-style-type: none"> <li>• Vessel blocks (pre-laid out)</li> <li>• Covered vessel space (<b>Note D</b>)</li> <li>• Inventory area to house engines</li> <li>• Forklift-accessible warehouse</li> <li>• Overhead crane</li> </ul> | <ul style="list-style-type: none"> <li>• Annual/2-year out-of-water maintenance</li> <li>• Hull inspections/damage repair</li> <li>• Waterjet maintenance/repair</li> <li>• Bucket maintenance/repair</li> <li>• Propeller repair/replacement</li> <li>• Shaft/bearing repair/replacement</li> <li>• Rudder service/repair</li> <li>• Pull/clean heat exchanger</li> <li>• Swinging engines / battery replacement</li> <li>• Fire/bilge system maint./repair (welding)</li> <li>• Change foil</li> </ul> |

## Enclosed Buildings

| <b>Minimum</b>  | <b>Nice to have</b>   | <b>Maintenance Activities Accommodated</b>   |
|---|---|--|
| <u>Workshop(s): (Note E)</u> <ul style="list-style-type: none"> <li>• Workbench/tool storage for each staff</li> <li>• Tool room / tool repair bench</li> <li>• Welding equipment/table (Note F)</li> <li>• Engine maintenance &amp; rebuild (overhead crane)</li> <li>• Parts washing station (Note G)</li> <li>• Machine shop</li> </ul>          | <ul style="list-style-type: none"> <li>• Wood shop / gasket shop</li> <li>• Sandblast &amp; painting shop (Note H)</li> <li>• Exterior covered vessel area</li> </ul>                           | <ul style="list-style-type: none"> <li>• Accommodate the list of all routine and intermediate maintenance (both in and out-of-water activities)</li> </ul> |
| <u>Inventory/Equipment Storage</u> <ul style="list-style-type: none"> <li>• Supplies/inventory general storage</li> <li>• Large parts/equipment</li> <li>• Parts washing station</li> <li>• Engine parts</li> <li>• Pumps/miscellaneous parts</li> <li>• Combustible fluids (separate fluids room)</li> <li>• Small break press (Note I)</li> </ul> | <ul style="list-style-type: none"> <li>• Rigging wall</li> <li>• Metal stock</li> <li>• Exterior covered storage</li> <li>• Storage to support all needs, with no separate locations</li> </ul> | <ul style="list-style-type: none"> <li>• Accommodate all storage needs in one location</li> </ul>  |
| <u>Crew Space &amp; Office:</u> <ul style="list-style-type: none"> <li>• Restroom/locker room</li> <li>• Break room / kitchen</li> <li>• Office / cubicles</li> <li>• Conference room</li> </ul>  | <ul style="list-style-type: none"> <li>• Shower(s)</li> </ul>   | <ul style="list-style-type: none"> <li>• Support future buildout (20-25 staff)</li> <li>• Maintenance program management</li> </ul>                        |