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DRBA Marine Master Plan Public Webinar

June 17th, 2021

kpff

Elliott Bay Design Group

Architectural & Engineering Services for the Marine Industry

Welcome and General Meeting Procedures

- This is a listen-only meeting.
- Please use the chat feature for any comments or questions.
- Please do not use the “raise hand” feature.
- Questions or comments will be placed in a queue. At appropriate times during the meeting, questions will be read aloud, and answers will then be provided.
- This meeting is being recorded.

INTRODUCTION

Marine Master Plan

Strengthened by the participation of stakeholders and the project technical team, this plan will identify capital investments and a fleet configuration that will serve customers now and into the future, while being mindful of costs, operational needs, and environmental considerations.

Priority Areas

Safety | Reliability | Efficiency | Sustainability | Innovation | Team Member Experience | Customer Experience

Plan Goals

Meet the DRBA/ CMLF Mission

CONNECTIONS THAT MOVE YOU

- Be safe, efficient, and sustainable
- Promote tourism and goodwill
- Focus on customer and team member experiences

Take Lessons Learned from Previous Efforts

Endeavour to Improve Operational Financial Performance

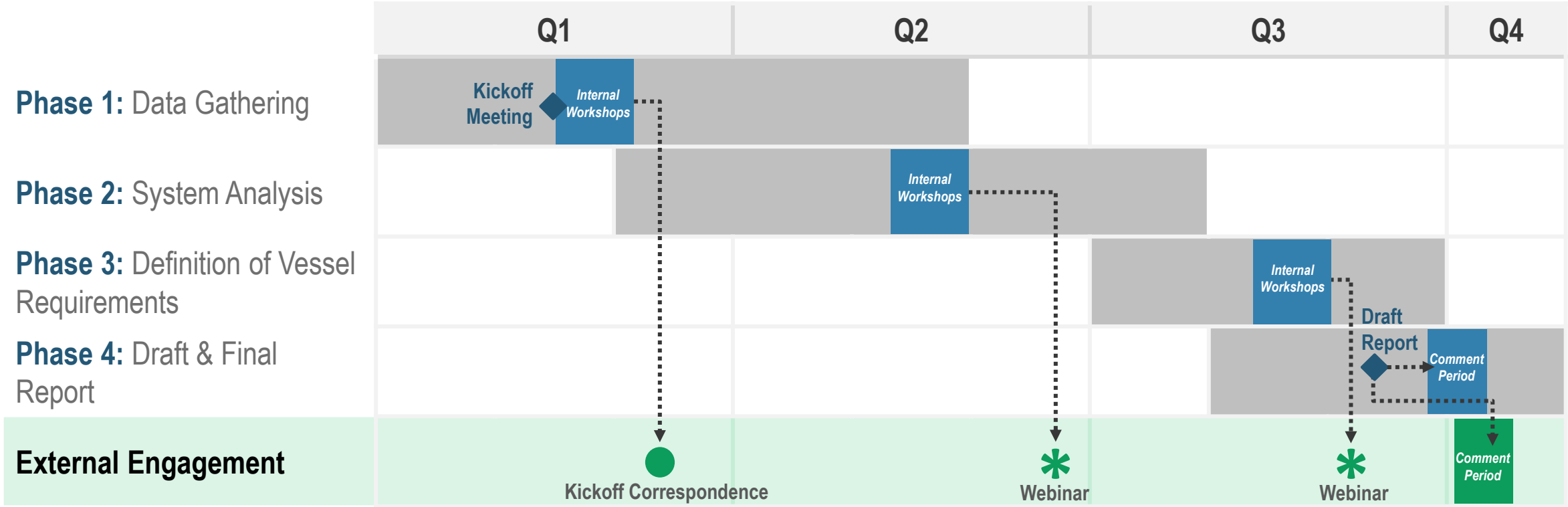
Work in Synergy with Current DRBA Planning and Development Efforts

Build upon Stakeholder Input & Technical Team Expertise

Strive for Enhanced Environmental Efficiencies while Maintaining High Service Reliability

DRAFT- 05/2021

Marine Master Plan Engagement Schedule- DRAFT



Plan Process

PHASE 1

- DRBA's Goals & Values
- Existing Ferry Conditions
- Industry Knowledge & Experience

PHASE 2- SYSTEM ANALYSIS

- Assumptions
- Analysis
  - WE ARE HERE → Fleet Configurations
  - Vessel Options

ASSUMPTIONS

Ridership

ASSUMPTION 1

The fleet will be designed to meet current demand and to accommodate a small level of growth over the next 40 years of operation.

- The fleet will not be sized for rapid growth nor decline.
- This demand pattern is consistent with DRBA's ridership growth over the past few years, which has been about 1 to 2% per year.

ASSUMPTION 2

Vessels of the new fleet will serve both passenger and vehicles.

- Passenger-only ferries are not being considered.
- Current ridership is 80% vehicles, and vehicles are the ferry's largest revenue driver.
- There are relatively few land transportation connections within walking distance of the terminals.
- Reliability risk – if some vessels are passenger only, they cannot provide redundancy if a vehicle ferry is out of service.

ANALYSIS IMPLICATIONS

- Number of vessels needed
- Size/capacity of vessels needed

Travel Time

ASSUMPTION 3

The new vessels will meet or beat the current total trip time.

[Total trip time includes crossing, maneuvering, and the loading/ unloading time.]

- A slower overall trip time will not be considered as it provides a perception of a degradation of service as compared to existing.
- A combination of variables such as speed, maneuvering time, and loading and unloading time should achieve the same or better overall transit time while balancing the cost of these variables.
- A faster transit time could increase demand whereas a slower transit time could hurt demand.

ANALYSIS IMPLICATIONS

- Assessment of trip time efficiencies

ASSUMPTION 4

Future vessels will not require major structural changes to the dock/wharf.

- Major modification of the existing docks will not be considered due to cost.
- The current dock shape fits current vessels, and a transition period will be needed with new and old vessels operating simultaneously.
- Recent terminal ramp investments make rework less palatable without significant benefits.

ANALYSIS IMPLICATIONS

- Vessel size
- Bow shape & size
- Passenger loading tube connections

ASSUMPTION 5

The new fleet will be designed to maintain or lower operating costs when compared to the current operation.

- Higher overall operating cost will be avoided due to financial sustainability goals.
- Creating efficiencies where feasible is crucial to improving DRBA's financial sustainability. To be considered:
  - Crew optimization
  - Fuel costs
  - Other

ANALYSIS IMPLICATIONS

- Fleet options will be evaluated that lower operational costs. To be considered:
  - Crew optimization
  - Fuel costs
  - Other

Vessel Characteristics

ASSUMPTION 6

New vessels will improve customer and crew amenities.

- Improved crew space is a priority.
- Modern seating, galley spaces, event spaces, and other amenities are important to the guest experience.

ASSUMPTION 7

The new fleet will be more environmentally friendly.

- New vessels will have improved emissions profiles.
- Set-up for incorporating future technological innovations.
- Attractive for proposed infrastructure grant funding.

ANALYSIS IMPLICATIONS

- Alternative propulsion technologies
- Recycled and upcycled materials
- Fixtures, furnishings, and equipment (LED light bulbs, low-flow, etc.)

PAUSE FOR QUESTIONS

ANALYSIS

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Analysis

STEP 1: Fleet Configurations*

COMPLETED

- Develop a model for initial configuration options
- Based on the model's results select the three most promising configuration options

NEXT STEPS

- In-depth analysis of the top three options covering:
  - Detailed scheduling and seasonal operating tempo
  - Double-ended vs single-ended vessel
  - Alternative propulsion options
  - Terminal fit-up analysis
  - Etc.

PRELIMINARY FLEET CONFIGURATIONS

Current Fleet
Three 100-car ferries

New Fleet Configuration Options

A **Optimized Current Fleet**
Three 100-car ferries

B **Larger Vessel Fleet**
Two 150-car ferries

C **Mid-size Fleet**
Four 75-car ferries

D **Smaller Vessel Fleet**
Five 55-car ferries

E **Mixed Size Fleet**
Two 100 car ferries
Two 55-car ferries

Preliminary Fleet Characteristics

	Per Vessel			Per Fleet		
	Vessel Class	Estimated Passenger Capacity	Estimated COI Crewing	Meets Current Summer Peak Ridership	Relative Initial Capital Cost	Operating Cost
Current Fleet Three 100-vehicle ferries	H	800	9	Yes	–	–
Optimized Current Fleet Three 100-vehicle ferries	H	500	8	Yes	$$$	▼
Larger Vessel Fleet Two 150-vehicle ferries	H	700	10	Yes	$$$	▼
Mid-size Fleet Four 75-vehicle ferries	H	350	8	Yes	$$	▼
Smaller Vessel Fleet Five 55-vehicle ferries	K	250	5	Yes	$	▼
Mixed Size Fleet Two 100 vehicle ferries Two 55-vehicle ferries	H K	500 250	8 5	Yes	$$	▼

Option A

Optimized Current Fleet

- Three 100-vehicle ferries
- Decreased passenger capacity
- Meets summer demand
- Limited terminal modifications required

OPPORTUNITIES

- Familiar sized platform
- Operating cost savings due to decreased passenger count
- Vessels are interchangeable
- Possibility of alternative propulsion
- Potential maneuvering efficiencies through double-ended vessel design

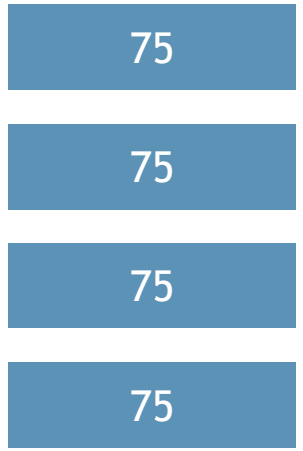
CHALLENGES

- Limited seasonal flexibility
- 1/3 of capacity is lost if one vessel is unexpectedly out of service
- Increasing vehicle capacity for ridership growth may be challenging due to current Length-to-Beam ratio
- Continue requiring highly certified crew

Option C

Mid-size Fleet

- Four 75-vehicle ferries
- Decreased passenger capacity
- Meets summer demand
- Limited terminal modifications required



OPPORTUNITIES

- Greater seasonal flexibility
- Reduces costs during shoulder seasons
- Operating cost savings due to decreased passenger count
- Increased hiring flexibility due to differing crew certification
- Vessels are interchangeable
- Possibility of alternative propulsion
- Potential maneuvering efficiencies through double-ended vessel design

CHALLENGES

- Change in service tempo
- ¼ of capacity is lost if one vessel is unexpectedly out of service
- Logistics of terminal mooring capacity
- Winter service level impacts need to be investigated through concept schedules

Option D

Smaller Vessel Fleet

- Five 55-vehicle ferries
- Decreased passenger capacity
- Meets summer demand
- May be suited to catamaran platform
- Limited terminal modifications required*

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OPPORTUNITIES

- Greater seasonal flexibility
- Cost savings due to decreased passenger count
- Increased hiring flexibility due to differing crew certification
- Vessels are interchangeable
- Only 1/5 of capacity is lost if one vessel is unexpectedly out of service
- Potential for higher speeds
- Possibility of alternative propulsion
- Potential maneuvering efficiencies through double-ended vessel design

CHALLENGES

- Changes in service tempo
- Potential need for re-training
- Potential for higher fuel consumption and environmental impact
- Logistics of terminal mooring capacity
- Transition period and resulting fleet mix prior to retirement of existing vessels.

QUESTIONS & DISCUSSION

Thank you!