

Casco Bay Lines
Vessel Advisory Committee – Down Bay Vessel
5/20/2025 Meeting Minutes

On May 20, 2025, the seventh Down Bay Vessel (VAC) meeting was held to provide an update on the work of BHGI on the preliminary design for the down bay ferry. Those in attendance were as follows:

- Nick Ferrara
- Dave Crowley – Committee/Board Member
- James Luedke – Committee/Board Member
- Nick Bishop
- Joe Donovan – Committee Chair/Board Member
- Paul Pottle
- Nick Mavodones
- Cory Wood – Naval Architect, Design Firm
- Cooper Collins
- Nate Mills
- Mike Bryand
- Pat Donovan
- Noah Van Heukelom
- Bill Jordan – BHGI
- Josh Sebastian – Shearer Group

Joe welcomed everyone and outlined the mornings agenda. After a couple of brief remarks, that included a consideration of using something like aluminum to reduce weight, he turned the meeting over to Cory to provide an update on the work that BHGI has completed since the last meeting. Cory indicated that their work was using the Maquoit III style for the analysis, but that the other style was closely related and should not materially change the results. He indicated that the general arrangement had not yet been modified to address past comments, for he was still waiting to understand which style was being selected for further advancement. The focus was on vessel weight, stability and various propulsion options. Those evaluations have advanced but are still a work in progress. Cory spoke of the development of a 3D structural model and how it is used to define the weight budget. The weight budget is not the same as the weight estimate. He also reviewed the preliminary stability assessment work and some of the criteria that helps to govern the assessment. There are three areas where stability is assessed, intact, damage and lifting. Cory indicated that the lifting stability appeared to be impacting overall stability and that the use of lighter weight material in the superstructure may be very beneficial from a stability point of view. The overall reach of the crane is driving the stability issue as it relates to lifting. There were several questions about the way this is handled and Cory responded to all of the questions asked. There was an interest in what the weight capacity would be on the various decks and BHGI can provide that information in better detail as the design advances.

Cory turned the presentation over to Josh and he went on to cover the work done so far with the propulsion systems and the variations that they are looking at. He explained they start by building a profile and various logic parameters that govern various operations. They can manipulate the assumptions as they advance the work and it helps change the results of the evaluation. They have been looking at different speeds and the amount of time to transit as well as loading and unloading. Basically, they are looking at a straight mechanical system, diesel electric with various generator configurations and one that also employs the use of batteries. It was indicated that at least 8 knots were needed to maintain the current schedule. There were also a number of questions on batteries and battery chemistry and what that meant for life of the batteries before the need to replace. Cory did indicate that they did not consider the use of a shore charger in the evaluation and that if there was one, that it would help lower the overall life cycle cost of that option. There was also discussion on the various generators considered and how they would impact operational and life cycle costs.

There was some extended discussion on batteries and their chemical make-up. While these minutes will not try and cover all the details covered, there are two basic types, NMC (Lithium Nickel Manganese Cobalt) and LFP (Lithium Iron Phosphate) and they each have different advantages and disadvantages along with different life spans. The evaluations being presented in the study utilize those differences when doing the assessments and evaluations. They also indicated that the option and evaluation table presented in the slides assumed no shore charging of the batteries. Also, the costs presented do not include the initial construction costs, only the operational and maintenance/replacement costs experienced over the life of the vessel. They did highlight that speed has a big impact on overall costs on operating the vessel as well as life of components.

Josh and Cory ended the presentation by asking for input on what was presented, assumptions made and variations on use that may not be currently considered. There was a comment on the environmental impacts, and they can do that, but nothing here has been specific about it. There were also comments made on the CAT C-18's and what the emissions might be as well as efficiencies.

There was a fair amount of discussion on what systems would be operating on the vessel and whether they were fully accounted for in this analysis. Things like bow thrusters and what size it would need to be to be effective, the simultaneous running of the elevator and the crane and whether that would impact the size of a generator. Which of the systems outlined would be impacted by these things and a number of general questions on the operation of and the impact of. It was explained that the straight mechanical system might need a larger generator or need to run two generators in tandem to meet the needs which would change the cost graph so that the other alternatives would compare more favorably with the mechanical system.

There was also some discussion about shore charging and what was the length of time the vessel would be shut down and could charge. It would vary depending on the season and how the vessel was used. If this vessel does use batteries, we should consider having shore charging both during the day and slowly overnight. There was additional discussion about what was available and

what peak demand would do to the system. There is more analysis necessary to try and determine what is needed and what it might do for operational costs.

In summing up many of the conversations and in order for BHGI to help complete the analysis and potentially make recommendations, BHGI indicated that they would need to know what the metrics were to evaluate against and what the weighting was for the items making up the metrics. Would it be costs, performance, environmental impacts etc... This will need to be flushed out before we can complete this process.

The other point raised by BHGI dealt with past discussions on the style of vessel and that there had been no clear direction provided. Do they continue flushing out refinement to the Maquoit III style or should it be the freighter style. Joe indicated from his point of view that the Maquoit III style is on the right path but wanted others around the room to weigh in as well. As we went around the room, all in attendance, except one, thought the Maquoit III style was on the right path and the one, Dave C, felt that we were not and that full Board approval would be needed before this process moves forward on the final style. He felt that others that had outside experience with freight handling did not support the Maquoit III style. Paul did read a comment sent in by Adam K on his thoughts and he did indicate that the Maquoit III style was on the right path. BHGI will continue to work on the propulsion and cost analysis but does need final direction on the style to complete the preliminary design process.

The date for the next meeting has not been chosen yet but would likely be in June in order to keep the project moving. Should anyone have additional comments on the meeting or wish to share any additional thoughts or input, please send them to Joe or Paul so that they can be shared with the entire committee and design team.