

Brutus Maintenance Association
Bulkhead Project Status Report
February 14, 2021

The Brutus Maintenance Association (BMA) held its 2020 Annual Meeting on July 18, 2020. At that meeting, the membership voted “to approve the hiring of an independent engineering firm (DCG) for preliminary engineering plan and permitting services” for the bulkhead replacement project. Since that meeting, the following activities related to the bulkhead have been performed:

1. During the first week of August 2020:
 - a. A BMA member transferred \$85,000 to the BMA bank account to pay for the DCG engagement.
 - b. BMA and DCG (Davido Consulting Group, Inc.) executed an agreement for DCG to provide specified “Engineering and Environmental Services for the (BMA) Bulkhead Replacement.” The estimated fees for DCG and its surveying and geotechnical subconsultants were \$80,738.

2. DCG began work immediately after executing the agreement. On September 22, 2020 DCG conducted a formal kick-off videoconference call with the BMA Board and Bulkhead Committee. The following topics were discussed:
 - a. Overview of the work completed to date, which primarily comprised familiarizing themselves with the site and identifying possible permit challenges and alternative materials for the replacement bulkhead.
 - b. DCG received the survey and geotechnical reports the day of the call. DCG noted that the ground is hard just below the surface and very hard 4-6 feet below the surface; and the hill behind the bulkhead is steep in places.
 - c. Schedule. Federal and State approval of the Permit Application (PA) can take as long as eight months to one year. Construction can only take place between July and February due to salmon protection requirements. DCG is targeting submitting the PA in time to allow construction in late 2021 or early 2022.
 - d. DCG provided high-level overviews of the materials they were considering for the bulkhead. These are described in more detail in #3 below.

3. On October 19, 2020 DCG delivered to BMA a memorandum describing the alternative materials that could be used for the new bulkhead, the approximate costs of each, and the advantages and disadvantages of each. On the same day they held a videoconference call with the BMA Board and Bulkhead Committee to discuss the memorandum. Highlights of the memorandum and videoconference call were:
 - a. The DCG memorandum included descriptions of the following bulkhead materials: Concrete, Vinyl Sheets, Steel Sheets, Soldier Pile, Mechanically Stabilized Earth (MSE), Timber, and Rock Revetment.
 - b. DCG’s recommendation was to construct a Soldier Pile (SP) bulkhead. An SP bulkhead consists of steel piles that are driven or drilled and that are spanned with concrete slabs. It is well suited to the Brutus situation, because of the hard ground near the surface that can be overcome by drilling the pile holes; and the steep bank behind the bulkhead, which can be overcome by the potential height and vertical nature of the SP bulkhead. Estimated costs for an SP bulkhead (excluding costs to remove and dispose of the old

bulkhead, taxes, and contingencies) are in the range of \$1,300-1,500 / lineal foot. Their expected lifetime is 50 years.

- c. DCG stated other options were not as attractive because of the hard ground (Concrete, Vinyl Sheets), cost (Steel Sheets), limited expected lifetime (Timber), and steep bank behind bulkhead (MSE, Rock Revetment).
 - d. DCG requested that BMA select one option by October 31.
4. The BMA Board met on October 25, 2020 via videoconference. Dennis Stettler also attended. After discussing the alternatives, the Board voted 4-1 to ask Dennis to direct DCG to perform detailed engineering work and permit package preparation on a Soldier Pile bulkhead.
 5. On January 13, 2021 DCG delivered to BMA a draft of the PA to be submitted to the Federal and State permitting agencies. The BMA Board and Bulkhead Committee met on January 31, 2021 via videoconference to discuss the PA. The PA contains a small number of errors, most notably the length of the bulkhead and therefore the estimated cost. Dennis explained that a) the PA could be amended easily after it was submitted to the agencies and b) it was important to submit the PA as soon as possible in order to reserve a spot in the "queue" because the Federal and State agencies process PAs in the order they are received.

At the conclusion of the meeting, the BMA Board voted 4-1 to ask Dennis Stettler to direct DCG to submit the PA to the Federal and State as soon as possible. The PA was submitted to the Federal and State agencies on February 4, 2021.

6. As we wait our turn in line for the PA to be reviewed by the Federal and State agencies, DCG will continue work to prepare minor updates to the PA and prepare a local permit application to Island County. DCG also plans to engage in preliminary conversations with potential construction contractors to discuss constructability issues and refine the preliminary cost estimates.