Town of Hingham

Harbor Development Committee

Woods Hole Group Final Presentation – Nasser Brahim: Planning for Future Phases of Harbor Resiliency; October 19, 2021

After a long deliberative process with support of many stakeholders and studies, the Town has agreed to replace and raise by about 4 feet the Inner Harbor wharfs to a uniform 11 feet, the current height of Whitney Wharf. Funding for replacing/raising the first out of three wharves (Town Pier, Veterans, and Barnes) was approved at the 2021 April Town meeting. The projected cost to replace/raise Town Pier is $5.6M, excluding any reductions to Hingham tax payers from Federal and State grants.

As part of the permitting process, the Hingham Conservation Commission required a study to determine whether or not raising the wharves would adversely impact abutters by deflecting wave action onto their properties. The study conducted by Woods Hole Group concluded that there would not be adverse impact. Both private marinas have expressed interest in raising their wharf to complete a uniform defense against rising sea-levels.

The Wood Hole Group study further predicts (with lots of caveats) that the 11 feet height should be sufficient to protect the Town's transportation routes and downtown areas from catastrophic flooding through 2030-2050 (the 2018 winter storm that topped the wharfs was considered a 50-year storm at about 9 feet). The design of the new wharves is such that an additional 1.5 feet of stone can be added at a future date, although that would require all other waterline structures to be raised as well.

Beyond 2030-2050, the study suggests adding layered defenses stepped back from the waterfront. Included are suggestions for raising the shoreline/wharves even higher; a tiered waterfront; a setback system, and roadside barriers.

The cost of raising the shoreline is estimated at $36 million in today's dollars. Other approaches call for allowing storm surge to flood the wharves, but stopping the water through land/hardscaping closer to Route 3A. A tiered waterfront would slope the land behind the wharves to a higher level (like a berm), with an estimated cost (excluding utilities/building re-location of about $15M. A set-back system takes the concept of a tiered waterfront one step further, adding flood walls, elevated roads, and berms closer to Route 3A. The cost for a set-back system is estimated at $13M. The fourth recommendation is a roadside barrier, without a tiered waterfront or setback system. The movable barriers would only be deployed during storms, as to allow vehicles and pedestrians to enter/exit during normal times. Movable barriers are currently in use near the Boston Aquarium T-station. The cost of movable roadside barriers is estimated at $6M.

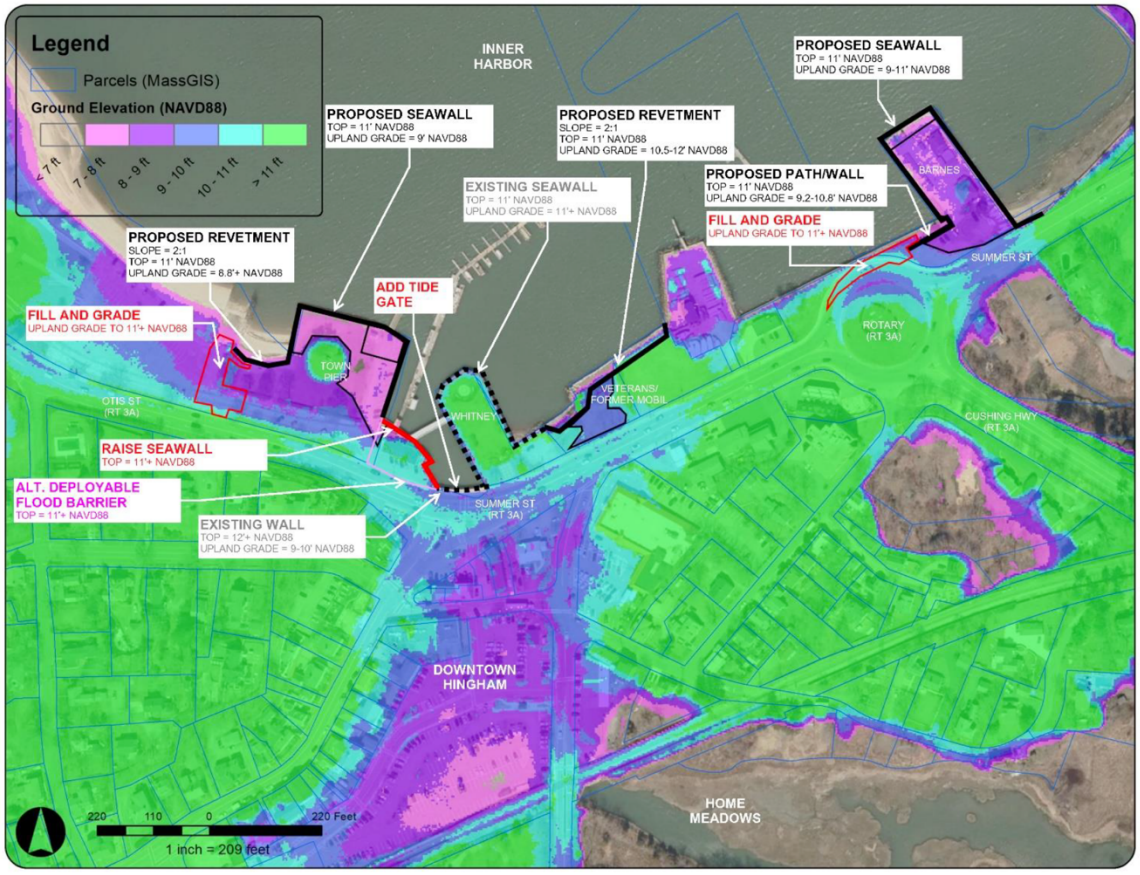

Figure 2 **Conceptual strategies to meet a continuous 11 ft NAVD88 DFE**

It is the Harbor Development Commissions belief at this time that raising the wharves to 11 feet will be sufficient to protect the Town's transportation and down town infrastructure for the foreseeable decades, striking an economic balance between near-term and long-term protection. Should sea-level rise be worse than predicted in the decades ahead, the Town should plan for contingency resiliency measures as recommended by Woods Hole Group.

Marco Boer, Chair

Bill Reardon, Vice-Chair