



City of Havre de Grace

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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #10
Safe Harbor Jetty Proposal
January 23, 2015

Background

The Advisory Board met on December 4, 2014 to develop recommendations for the construction of a long jetty system extending more or less parallel to the Havre de Grace waterfront, from the Susquehanna Lockhouse Museum to the Concord Point Lighthouse. Known for more than fifteen years as the Jetty Project, a waterfront task force was formed in 2000 by the Downtown Focus Group, and an official Jetty Committee was appointed soon thereafter to study the proposal, identify consultants, and provide recommendations to the Mayor and City Council for implementation.

As jetty consultants were identified and invited to submit detailed proposals for a feasibility study, it became clear that such a project would not only provide much-needed property protection from periodic storm-raged waters and water-borne debris, but would also create a safe and calm destination harbor at the top of the bay for Chesapeake Bay boaters. Other benefits would include the creation of a sheltered area for wildlife, resurgence of sub-aquatic vegetation, significant reduction of harbor siltation, elimination of shoreline debris, and protection against upriver barge or rail accidents.

The Jetty Project initiative came to a halt sometime during or shortly after 2002, for reasons that were never made clear to most of those who were involved. It did not reach the stage of initial funding, and as a result no feasibility studies were ever contracted. There is little doubt that project construction cost was a major source of concern at the time, even if the feasibility study would have been jointly funded by the City, County and State governments.

The Advisory Board considers the original riverfront jetty concept to be much more valid today than in the past, as a result of major hurricane and floodgate release damage, and a runaway barge event, all having occurred since the 2002 initiative. Crude oil unit trains, in more recent daily operation along the river edge are also a source of potential danger from oil pollution, fire, and floating rail cars in the event of a major derailment.

Very great concern has developed in recent years regarding the rapid and continuous buildup of sediment along the shoreline and in the marinas of Havre de Grace, requiring frequent and very expensive dredging operations. This problem and its underlying causes have been well-documented by the Lower Susquehanna River Watershed Assessment partnership in its executive summary of a report issued in October, 2014. The Advisory Board has carefully studied other material contained in the original consultant proposals and recommendations of the Jetty Committee, and is in general support of this project as proposed at that time.

Association with the Rail Bridge Replacement Project

The proposed Susquehanna River Rail Bridge replacement project offers an opportunity for very significant cost savings in both old bridge demolition and new jetty construction. The Board has recommended in its earlier advisories that all existing bridge piers and abutments, including the line of abandoned piers beyond Craig Park, be removed down to the river bed and below grade on dry land. Some street crossing abutments within the City may also require total replacement due to significant realignment of track curvature.

At least 50,000 cubic yards of massive granite blocks will need to be removed and disposed of in the demolition process, requiring the expense of loading, transporting and unloading elsewhere, by rail or barge. This material would be ideal for armoring the jetty along the sides facing strong current, saving the purchase, loading and transport of very large quarry stones. When all available granite blocks are put in place, the remainder of the jetty would be armored with more conventional sizes of quarry stone, dependent on exposure to natural forces. Under this proposal, the bridge contractor would simply hoist the cut stone blocks onto the jetty contractor's barges for direct placement back in the water.

An even more significant cost saving opportunity for jetty construction has developed since the previous jetty proposal. Vulcan Materials, owner of the nearby granite quarry, has informed the Board that it has approximately 778,000 cubic yards of overburden stored on site that it must somehow remove in order to gain access to future beds of granite within its property. This material is ideal for the jetty core structure, there is more than enough available to build the entire jetty, and the cost of acquiring and moving it would be a fraction of that for typical jetty core construction.

The key to this proposal is the timing of its feasibility study, design phase, funding, and letting of contracts to coincide with that of the rail bridge project, to realize maximum cost savings and construction efficiency, and to allow the rail bridge project to also realize costs savings and efficiency in the granite removal and disposal process. The Board believes that this would be a unique opportunity to benefit both projects.

Design Recommendations

Several concepts were put forth in the 2000-2002 feasibility study proposals, which included a full-length jetty, a partial waterfront jetty, and a floating breakwater system. The Advisory Board has concluded that a full-length river jetty system, constructed as a linear series of armored berms, will offer the strongest, most permanent, and lowest maintenance solution to protecting the entire City waterfront against the greatest variety of mechanical hazards and weather events, and against rapid siltation of its harbor facilities.

The proposed jetty should begin upriver at the south corner of the mouth of Lilly Run, tapering gradually outward in the downstream direction to a maximum distance of 500 feet offshore of the most protruding points of land along the waterfront, beginning at the south property line of the Havre de Grace Marina and terminating below Concord Point, in line with the City Yacht Basin entrance.

At least three navigable entrances, and preferably four, should be provided as gaps in the jetty line, with their throats oriented downriver to divert the river current outward and keep the harbor area calm. A special groin should be designed at the upriver end of the jetty to keep strong current and debris out, but allow some fresh water in, to prevent stagnation. The downriver end of the jetty system should terminate well away from shore and designed to prevent eddy currents from affecting the City Yacht Basin and its back channel.

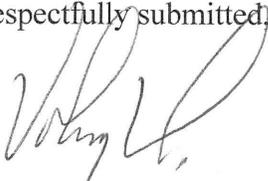
By carefully designing the jetty system from a hydrologic perspective, an important objective should be the creation of a much healthier ecosystem for wildlife and subaquatic vegetation to thrive in shallow areas along the waterfront, including a very large natural area within the upriver end of the jetty. A very important objective should be major reduction or near-elimination of rapid sediment build-up that seriously affects all the marinas, the back channel and the preserved lock at the Lockhouse Museum. This serious sedimentation problem also has a detrimental impact on the subaquatic ecosystem along the shoreline. Another important objective should be the reduction or near elimination of water-borne debris and trash accumulation along the entire waterfront, particularly in cove areas and boat slip passageways.

Although all segments of jetty system should be boat-accessible and walkable as an outlying public facility, only the northernmost segment would be suitable for direct pedestrian access from land, via the Lockhouse Museum grounds. A footbridge for this purpose should be installed over its non-navigable groin opening. With greatly expanded opportunities for boat slips and safe off-shore anchorages, shallow inshore areas should be preserved and expanded wherever possible to encourage a greater number and variety of breeding wildlife common to this area a century ago, and to create a more natural riverscape setting for the enjoyment of all.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations into a formal communication to the SRRBP Project Team as soon as possible, and to begin the formal process of funding a comprehensive feasibility study for jetty design, funding and construction. The Board concludes that there is sufficient time to accomplish all the necessary study, funding, design and construction phases of this project if initiated very soon and in concert with the bridge replacement project.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford", written over the typed name below.

Volney H. Ford
Chairman