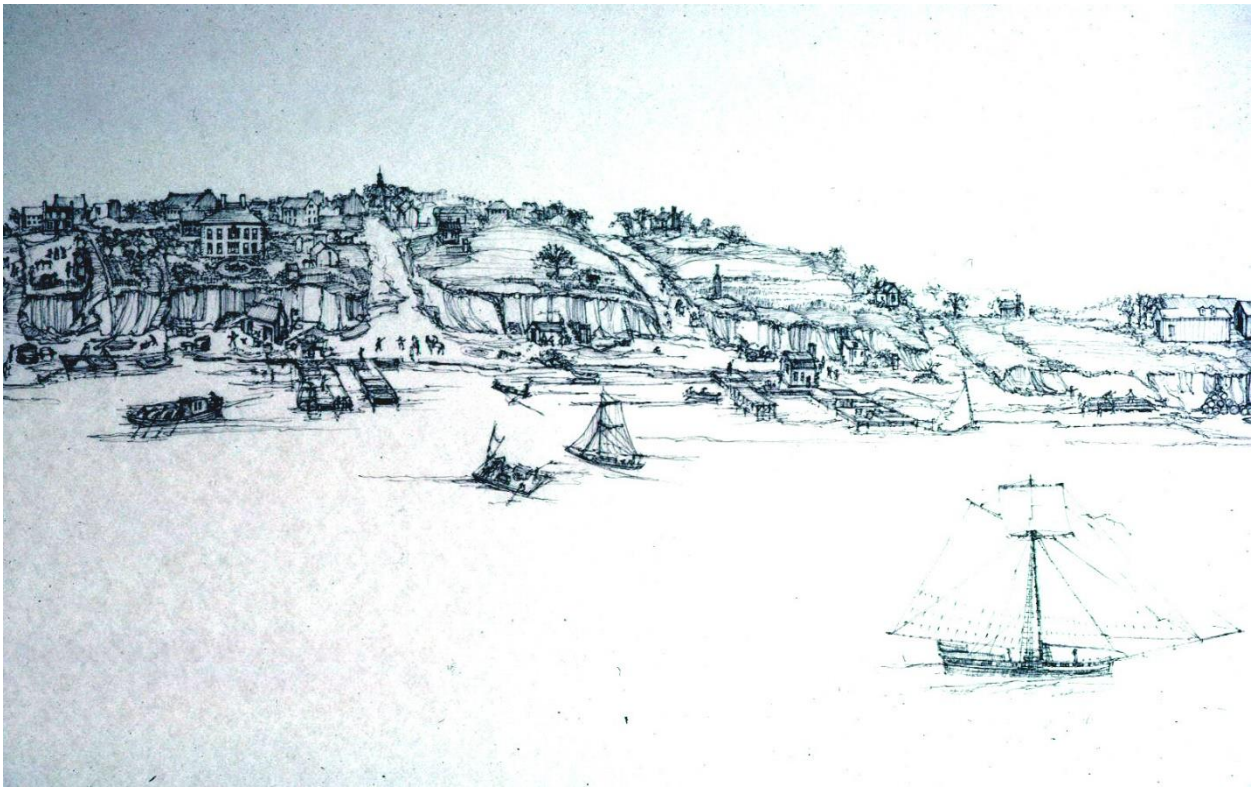
Pondering Shorelines, Part 1

Adapted from "'On Examining the Records of the Town we find an Omission' Using Historical GIS (hGIS) in Conjunction with Archaeological Excavation to Document Property Histories and Understand Changing Waterlines in Alexandria, Virginia." Paper presented at the Society for Historical Archaeology Conference, January 2020 by B. Skolnik.



For terrestrial archaeologists working in urban and waterfront settings like Alexandria, the water's edge frequently represents a boundary that is seemingly fixed, beyond which is figuratively (and sometimes literally) outside of their jurisdiction. However, the water is the connective tissue that linked these port towns in the past and made them viable economic centers. Furthermore, the boundary between land and water cannot be thought of as a static line like it is frequently shown on historic maps. Just as there is topography on the land that shapes human activity, there is topography (or bathymetry) under the water that shapes human activity. Fortunately, many of these urban centers have a rich historic record. Using historical Geographic Information Systems (hGIS) in conjunction with archaeological excavation, we can better understand the historical development of these port cities and the complex relationship between the land and the water.

There are several reasons why the historical archaeology of urban centers can be so successful. These places concentrate human activity in a small area. Over time, economic and human capital accumulated in these centers. As people and capital accumulate, incentives increase to expand this activity. Moving into the river is sometimes the most economically advantageous way of expanding along a crowded waterfront. This filling-in of the river becomes part of the archaeological record and is the foundation on which the city grows. Lastly, given the political, economic, and social functions of cities, all of this concentrated human activity is much more likely to be recorded in maps, deeds books, municipal records, newspaper articles, journals, letters, photographs, and paintings, leading to a robust historical and archaeological assemblage of documents, artifacts, features, and sites.

On September 1, 1760, at a meeting of the Trustees of the Town of Alexandria, those present decided to rectify what they felt to be a major oversight on their part. They recorded in their minutes book:

> *"On Examining the Records of the Town we find an Omifsion in not entering what was agreed on before the day of Sale of any of the said Lotts, that is, that evr'y purchaser of River side Lotts by the terms of the sale was to have the benefit of extending the said Lotts into the River as far as they shall think proper….those who did purchase Lotts on the River side shou'd be intituled to the said priveledge that is that each owner of River side Lotts might build on or improve under his Bank as he should think proper Without any Moleftation from the Street Called Water Street Intersecting."*

They noted that there was no mention in the official records of an agreement that had been reached prior to the original division and sale of town lots eleven years earlier on July 13th and 14th, 1749, stating that those who purchased waterfront lots could expand their properties eastward by filling in the Potomac River. From this clarification, we can see that building on and expanding the waterfront was on the minds of early Alexandrians from the day the town was founded and we can deduce that as early as the 1760s this process became enough of a concern that the Trustees felt the need to codify the right of owners of waterfront property to "bank out." Over the next half-century, Alexandrians added at least 10 city blocks—somewhere in the neighborhood of one million square feet—to their city as they dug into the steep rise just above the Potomac's bank and used that dirt in conjunction with land making wooden frames to fill in the river.

It is this banking out (or similar processes) that has preserved much of Alexandria's waterfront and maritime heritage. For terrestrial archaeologists, this new dirt represents an expansion of our domain as the water's edge represents the boundary at which human cultural activity changes dramatically. Our land-based methodological and literal toolkit ceases to function underwater. In many cases, including in Alexandria, the water is literally outside our jurisdiction as we are practitioners operating within the confines of local or state cultural resources law. Clearly, there are some good reasons related to thematic and methodological realities that many people view the water's edge as a boundary to contain their work or circumscribe their research. But we should remind ourselves that the water is the connective tissue that linked cities, towns, and farms together. In the present, oceans, rivers, harbors, and bays may be physical and jurisdictional barriers that delineate the edges of our domain as terrestrial archaeologists and may pose engineering challenges for archaeologists to keep water out of our sites. However, in the past the water was a highway on which people and goods and ideas moved. For centuries, it was a major entry point and point of departure for everywhere else.

The division between land and water is perhaps the most important geographic feature in port cities. It represents the coming together of the terrestrial and the maritime, and in their meeting enable human industry, commerce, and trade to flourish. When trying to research the growth and development of maritime urban centers like Alexandria, the land/water divide is also one of the most important cartographic features. On most maps, this boundary is represented as a single line, a "shoreline," static in both time and space.

In reality, the shoreline is constantly changing hourly and daily because of tidal forces and rainfall, or yearly or more because of larger climactic factors. It is also not a single geographic feature to map but any one of a related series of topographic features. An important point to consider when examining a historic map with a shoreline is "what geographic feature is this map actually mapping?" On maps of sufficiently large scale, the "shoreline" can be one of several distinct topographic features, each related to the profile of a river or coast. These could include (from lowest to highest): the channel centerline, edges of the shipping channel, extreme low water, mean low water, the mean water mark, mean high tide, extreme high tide, the riverbank, or any estimated flood levels. In contrast with the static depiction as embodied by a single line on a map, the coast scape is always changing. This leads to an important cartographic

question, “How do you map something that is always shifting?” It’s difficult to rely on the depictions of coastlines found in historic maps unless we can grapple with what it is that the map maker is actually trying to show us.