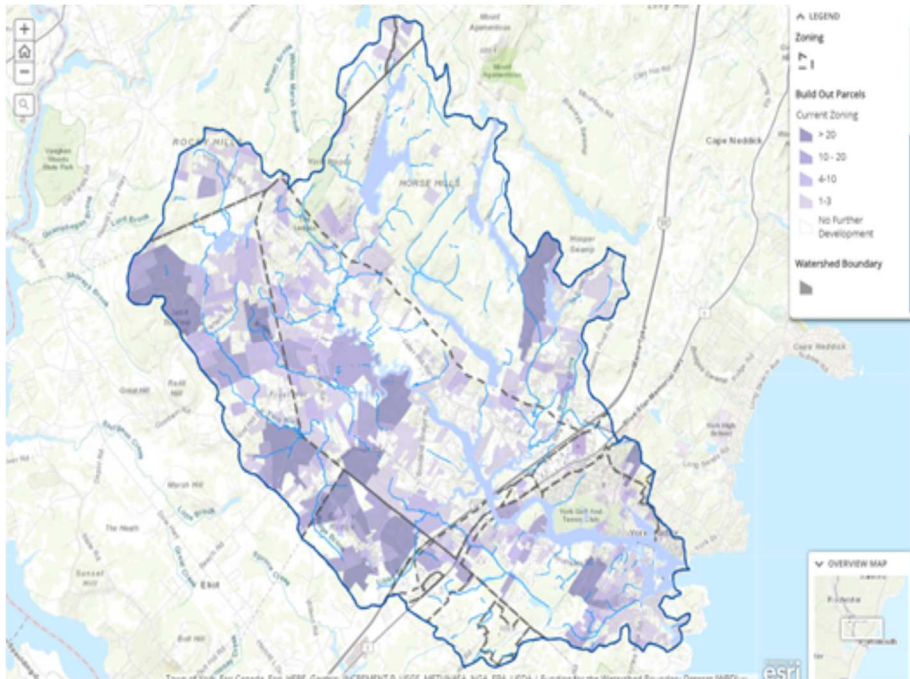




## Southern Maine Planning and Development Commission York River Watershed Build-out Analysis



### PARTNERS

York River Study Committee and the Towns of South Berwick, Kittery, Eliot and York

### PROJECT DESCRIPTION (completed March 2018)

From the fall of 2017 through the summer of 2018, Southern Maine Planning and Development Commission (SMPDC) partnered with Spatial Alternatives, a GIS consulting firm based in Yarmouth, ME, and the York River Study Committee to conduct a GIS-based build-out analysis of the York River Watershed. The purpose of the build-out was to examine development potential within the York River Watershed and associated impacts to key resources. The build-out analysis was part of a larger project funded by a Maine Coastal Program FY18 Coastal Communities Grant assessing development potential within the watershed towns of York, Kittery, Eliot and South Berwick and developing recommendations for regulatory and non-regulatory strategies to protect the watershed and its abundant natural, historical, and recreational resources.

### APPROACH

To conduct the build-out analysis, the project team gathered an abundance of datasets related to zoning, habitat, land use, archaeological resources, historic preservation sites, and more, from the four individual towns, the State of Maine, Beginning with Habitat, Maine Historic Preservation, and other local and state agencies.





## COASTAL COMMUNITY GRANTS: WATER QUALITY AND LAND USE

The intent was to model the potential development that could occur in the watershed under existing and alternative zoning scenarios to better understand possible impacts to the health of the watershed and its resources. In order to enhance the build-out analysis and evaluate potential impacts to impervious coverage within the watershed, which can have significant effects on water quality, a new impervious surfaces layer was developed using the current aerial photography to digitize impervious areas and building footprints for the watershed.

### RESULTS

The creation of the new layer allowed project partners to assess current levels of impervious coverage within the watershed, potential future coverage associated with development based on existing regulations, and what the impact of zoning alternatives would be on impervious coverage. This allowed the project team to develop targeted recommendations for specific areas within the watershed to better manage potential imperviousness through strategies such as low impact development, stormwater management, and conservation subdivisions.

### NEXT STEPS AND OPPORTUNITIES

This effort highlighted the need for improving the abundance and quality of local geospatial data and consistency of that data between towns. An abundance of disparate data from each of the four towns, local land trusts, and federal and state agencies was compiled and integrated in a centralized database for the build-out. Future GIS efforts within the towns and region will greatly benefit from this work, significantly reducing the time and effort that will be required to locate, assemble, and utilize the data. Joining the datasets from the four towns proved to be challenging and very time consuming due to a lack of consistent quality and formatting between the towns. If there is a desire to update this data over time, it would be advisable that neighboring towns work together to set up a data standard and common boundaries for the parcel and zoning data. Additionally, manually creating the impervious layer from aerial images was extremely resource-intensive. However, it proved to be extremely helpful for the build-out analysis and can be used in future local land use analysis and GIS exercises.

### NEEDS

The creation of an updated State impervious coverage layer, or at least for coastal communities, would be beneficial for a variety of local and regional assessments and analysis, such as evaluating impacts of coastal hazards and sea level rise.

### APPLICABILITY FOR OTHER MUNICIPALITIES

The data collection, creation, and integration methods, as well as the build-out analysis modeling protocol, can be used by other municipalities in similar analyses. Additionally, the build-out findings and data were presented in a GIS story map format, a data visualization and presentation tool which is transferable for other communities wanting to present geospatial data, maps, and analyses in an engaging and interactive way.

**FOR MORE INFORMATION**

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GIS data and build-out analysis can be accessed via the following link:

Story Map: <http://smpdc.maps.arcgis.com/apps/MapSeries/index.html?appid=d169ff687de44a25908434cb7970b47c>

GIS Data: <http://data-smpdc.opendata.arcgis.com/>

Build-out Methodology and Findings Report: [http://www.yorkrivermaine.org/wp-content/uploads/2018/06/Spatial-Alternatives-York-Watershed-Build-Out-Methodology\\_Final.pdf](http://www.yorkrivermaine.org/wp-content/uploads/2018/06/Spatial-Alternatives-York-Watershed-Build-Out-Methodology_Final.pdf)

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