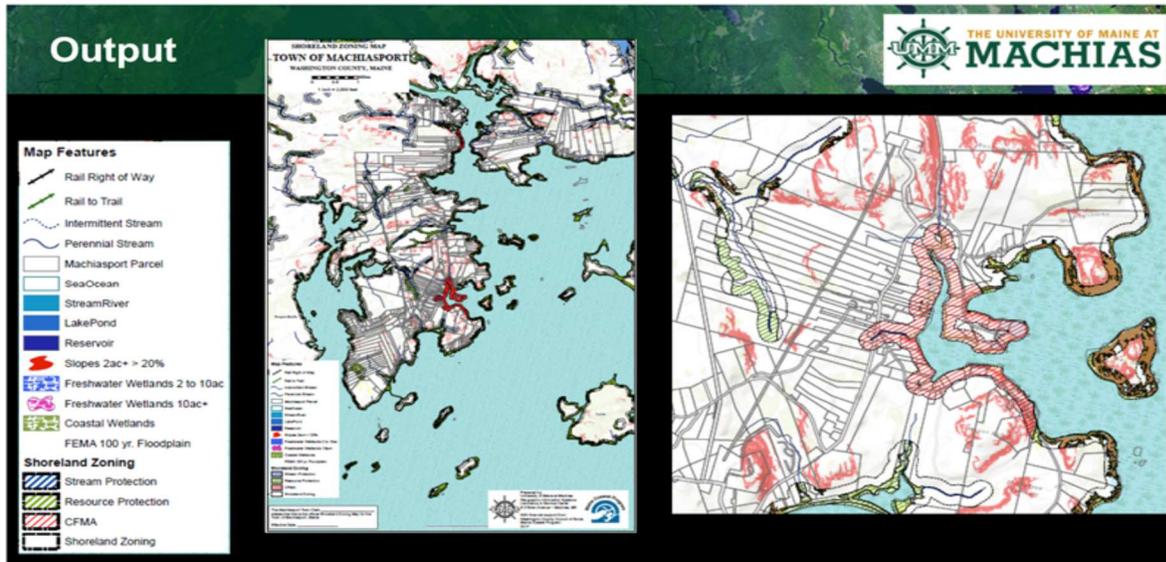




WASHINGTON COUNTY COUNCIL  
OF GOVERNMENTS LAND USE  
TECHNICAL ASSISTANCE:  
WATER QUALITY AND LAND USE  
RESOURCE PROTECTION

## Washington County: Coast-wide Shoreland Zoning GIS model update



*“First let me express my amazement and appreciation at your ability to create the spreadsheet and individual maps listing/showing every Machiasport property affected by the proposed Shoreland Zoning Ordinance. While I am depressed at the number of properties impacted, I am thankful you’ve given us the tools to notify and educate the affected property owners.”*

Robert Mercer, Chair - Machiasport Shoreland Zoning Ordinance Committee 2018

### PARTNERS

Washington County Council of Governments, University of Maine at Machias  
Geographic Information System (UMM-GIS) Service Center

### PROJECT DESCRIPTION (completed March 2018)

Geospatial models can assist small rural municipalities in Washington County to respond to unfunded mandates from state and federal agencies. In this project we updated the GIS models, originally prepared in 2006-2009, to prepare Shoreland Zoning maps as changes are issued in both the DEP Guidelines, revised in 2015, and the new flood hazard districts, revised after the July, 2017 publication of new FEMA/FIRM maps.



## **APPROACH**

The Mandatory Shoreland Zoning Act, 38 M.R.S.A. sections 435-449, requires all municipalities to adopt, administer, and enforce ordinances which regulate land use activities within 250 feet of great ponds, rivers, freshwater and coastal wetlands, including all tidal waters; and within 75 feet of streams as defined. Minimum guidelines for such ordinances are established from time to time, the most recent in January 26, 2015. As part of this mandatory process an Official Shoreland Zoning Map must be drawn and adopted that clearly delineates district boundaries and provides a legend indicating the symbols for each district. A geospatial model was generated for Washington County that could be tailored to generate municipality-specific Shoreland Zoning maps. The model was prepared by the Director and students of the University of Maine at Machias GIS Service Center with input, feedback and iterative refinement provided by Maine DEP, WCCOG planners, and several municipalities.

## **RESULTS**

This approach provides mapping services to 40+ municipalities in a cost-effective manner. It affords an economy of scale to each community, none of whom have any professional planning staff or state resources to implement this state mandated regulatory function, and to the regional planning agency itself who likewise has extremely limited resources with which to support these municipalities. Providing this model to small rural municipalities can avoid the burden of state-imposed ordinances, and supports compliance with state law. In addition, it offers the municipalities a measure of self-determination and responsive feedback to their concerns in the face of a mandatory law. It bridges the digital divide by providing sophisticated computer services to those who cannot afford them, supports the co-production of knowledge, and, as a result, builds social capital.

## **NEXT STEPS AND OPPORTUNITIES**

The GIS model developed for Washington County, was used by another regional planner, and student of the UMM-GIS Service Center, to assist an individual municipality in Androscoggin County. As the model uses Washington County data, this sharing required the planner to obtain and manipulate Androscoggin County-specific data to generate the shoreland zoning districts, particularly for Resource Protection and Stream Protection. Application of the GIS model in another region highlights two significant problems with the law and the guidelines. Specifically, they are unnecessarily complex AND vague. The complexity is demonstrated by the need for 125 geoprocessing steps needed to generate the shoreland zoning maps including creation of the jurisdiction areas (30 steps), Stream Protection Districts (54 steps), Resource Protection Districts (25 steps), and final map compilation (16 steps).

## **NEEDS**

Particularly for rural municipalities, there is a dire need to simplify definitions within the shoreland Zoning statute and the Guidelines that follow from it, and to have them make reference to best-available and scientifically-defensible data sources that can be used to create shoreland zoning maps.

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## **LESSONS LEARNED**

The extraordinary number of geoprocessing steps is necessary (not to mention entirely outside of the capacity of small rural municipalities) because the law and the guidelines do not reference specific best-available data sets, for example the National Hydrography Dataset. Furthermore, the law and guidelines do not use widely-used and scientifically-defensible definitions. For example, Stream Protection criteria are similar to but not identical to stream order. Vagueness is encountered in several ways. There is no definitive guidance for operational interpretation of terms like “abutting” or “surfacially” connected. There are not minimum acreages or widths for when land should be placed in Resource Protection or in Stream Protection. Many questions that arise about when to place land in Resource Protection or in Stream Protection are settled by Maine DEP staff “looking at the aerial”. Finally, Maine DEP staff lack sufficient mapping expertise to answer questions about geospatially generated mapping products.

## **APPLICABILITY FOR OTHER MUNICIPALITIES**

As noted above the GIS model was already used in Androscoggin County and could be adapted to any other county in Maine.

## **FOR MORE INFORMATION**

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