

COASTAL COMMUNITY GRANTS: Preparing For Coastal Storms, Erosion and Flooding, Coastal Hazards



Town of Damariscotta Flood Resiliency Project

Project Description (completed February 2015)

The 2012 Lincoln County Sea Level Rise – Coastal Hazard Study, conducted jointly by the Lincoln County Regional Planning Commission and the Maine Geological Survey (funded with support from the Maine Coastal Program) assessed the vulnerability for 450 miles of coastline to sea level rise and storm surge. Damariscotta's Flood Resiliency Project essentially picked up where the Coastal Hazard Study left off for Damariscotta by addressing The Town's historic downtown area's vulnerability to flooding. Damariscotta's downtown village is particularly vulnerable given its location in a low lying area adjacent to the tidal Damariscotta River. The major focus of the consultant's work was on providing a preliminary assessment of steps that could be taken to protect the downtown businesses and public infrastructure from flooding.

Project Partners

Key partners in this study were the Maine Department of Agriculture, Conservation and Forestry Coastal Program, Town of Damariscotta, Lincoln County Regional Planning Commission (LCRPC) , Great Salt Bay Sanitary District, Maine Geological Survey, downtown businesses and the Town's Flood Resiliency and Waterfront Improvement Project Committees. Other organizations consulted during the course of the study were the Damariscotta River Association, the Army Corps of Engineers (ACE) , the Federal Emergency Management Agency (FEMA), Maine Department of Environmental Protection (DEP), the Damariscotta Chamber of Commerce, and the Damariscotta/Newcastle Harbor Committee . Private sector partners were Milone and MacBroom which conducted the study, Maine Coast Surveying, Mitch Razor, LLC and Wright-Pierce Engineers.



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Issue Area

The Lincoln County Sea Level Rise- Coastal Hazard Study identified the Damariscotta downtown village area as one of the locations in Lincoln County most vulnerable to the continuing rise in sea level and increasing occurrences of storm surges. The “Storm of Record” that occurred in January/February, 1978 provided the baseline for much of the analysis in both the County’s Coastal Hazard Study and this current study of the impact of flooding on downtown Damariscotta. The impact of a reoccurrence of this storm and various higher levels of flooding are available for viewing through the LCPRC website: <http://lcrpc.org/coastal-projects-planning/sea-level-rise-scenarios>.

The Challenge and Approach Taken

In January and February, 1978, the elevation of a storm tide reached 10 feet as compared to the average highest annual tide of 6.2 feet and a mean high tide of 4.4 feet elevation. During the 1978 storms, the lower levels of several buildings and a large portion of the Town’s parking area were inundated.

Ground elevations in the downtown study area range from 7.6 feet to 15.8 feet. The National Oceanographic and Atmospheric Administration (NOAA) data shows that tides will continue to rise and that by 2100, the highest annual tide will be 11.2 feet.

In late November, 2013, the Town received notice that it had been awarded a \$20,000 Maine Coastal Communities Grant from the Maine Department of Agriculture, Conservation and Forestry. The grant, supplemented by a \$5,000 local in-kind contribution, was used to fund the services of an engineering firm that prepared a preliminary engineering report outlining options and cost estimates for adapting downtown buildings and the municipal parking lot to address the potential impacts of storm surge and sea level rise. In early March, 2014 letters were sent out to the 23 downtown property owners whose businesses were identified as being potentially impacted by a storm surge similar to the February, 1978 Storm of Record. Public notices announcing the meeting were also included in the Lincoln County News and in the Town Manager’s email newsletter.

The work of a Flood Resiliency Committee, comprised of citizens, representatives of the business community and Town, State and County officials dovetailed with the continuing activities of the Town’s Waterfront Project Committee. Several individuals served on both committees. The Waterfront Committee had already been addressing the overall improvements planned for the municipal parking lot including reconstruction of the lot itself,



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construction of public restrooms and improved pedestrian access from Main Street and the development of a more aesthetic and pedestrian-friendly harbor-front.

The Lincoln County Planner and the Town Manager drafted a request for proposals that was subsequently reviewed and approved by the Flood Resiliency Committee. After interviewing representatives of the two firms that submitted proposals, Committee members selected the firm of Milone and MacBroom (MMI) to provide the consulting services.

Several of the representatives from the firm met with the Flood Resiliency Committee and were in regular communications with the Town Manager and members of the Committee via emails and conference calls throughout the project. After a discussion with the consultant, the Committee decided that a 12 foot flood elevation should be the level on which to base the consultant's recommendations.

Opportunities for citizen and business involvement continued throughout the term of the project. Updates on the project were provided on the Town's website, in the Town's email newsletter and in periodic newspaper articles. Citizen open houses were held on the waterfront project on February 12 and June 18, 2015. A significant portion of the PowerPoint presentations at each of these two meetings was devoted to a review and discussion of the flood resiliency issues. Approximately 75 people attended the February 12 meeting while about 20 attended the June 18 meeting.

Another partner in the greater Waterfront project effort is the Orton Foundation who in April, 2015 agreed to provide financial assistance for the community outreach and marketing efforts. The Town used part of the grant from the Foundation to pay for a survey of citizens and businesses on the various elements of the Waterfront project. A total of 281 individuals completed the survey with 77.2 percent indicating support for an option that incorporates the Milone and McBroom recommended flood resiliency measures in the parking lot reconstruction project. Similarly, while some of the citizens present at the open houses objected to other aspects of the Waterfront project, there was no opposition to including the flood protection measures.



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The Results

Milone and MacBroom submitted its final report to the Town on February 3, 2015. It included its evaluation of the plans for the reconstruction of the Town's municipal parking lot and recommendations on both area-wide and individual business by business flood resiliency strategies.

The Flood Resiliency Committee approved going forward with the recommendation that provides for an area-wide approach to mitigating flood issues. This option would require the construction of a sea wall at the 12 foot elevation along the municipal parking lot adjacent to the river frontage on the southern side of downtown and a much smaller embankment on the northern edge of the downtown area. The preliminary recommendations were provided to the Selectmen and will be included in the Waterfront Committee's final recommendations.

In line with the Waterfront Improvement Project Committee's overall plans for the parking lot, the seawall will be largely underground and will not affect the excellent view that citizens and visitors have of the harbor from the Town parking lot and Riverside Park. This is due to the fact that the proposal from Milone and MacBroom calls for increasing the elevation of the parking lot when it and the sanitary sewer and underground drainage infrastructure are reconstructed.

Next Steps/Opportunities/Needs

On August 19, 2015 the Damariscotta Board of Selectmen accepted the Town's Waterfront Improvement Project Committee's report. The top recommendation of the Committee was to reconstruct the parking lot with the drainage and sewer line improvements and the flood resiliency measures recommended in the Milone and MacBroom Report. The Town's next steps will be to create an Implementation Committee that will begin marketing the entire waterfront project and to continue to seek funding sources for the next phase of the project. The focus at this point is to secure funding or technical assistance for an engineering report with sufficient design details to complete an application for the Conditional Letter of Map Revision (CLOMR) from FEMA. The CLOMR would provide assurance that if the Town were to implement approved flood protection measures, the downtown area would be removed from the one percent flood zone. The result could mean a significant savings in insurance premiums for these businesses.



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Lessons Learned

The Milone and MacBroom Report was an excellent follow-up step to the 2012 County-wide Coastal Hazard Study. However, the limited scope of the study did not permit examination of three key areas:

1. While the study focused on sea level rise and storm surge and thus protection of the downtown from inundation from the waterfront, it did not address hazard mitigation of a storm surge event combined with heavy precipitation.
2. The assumption has been that given its historical and economic benefit to the region, it is very important to protect the downtown area. However, during the next, more detailed study, it will be important to complete a thorough cost/benefit analysis of implementing flood protection measures.
3. Various trend analyses show that a flood protection system that would withstand a sea level rise/storm surge of twelve feet will be adequate for the next fifty years. However, other predictions indicate that such measures may not be adequate. The conclusion is it is very difficult to get a good handle on what will be the most prudent course of action given the scientific uncertainty in our current ability to predict sea level rise.

Applicability for other municipalities

Although the completion of the project was delayed due to a change in the consultant's project management, the observation of many of those involved was that both the quality of the consultant's work and the timing of the study were very advantageous for Damariscotta region and, perhaps coastal Maine, overall. The consultant's final report has hopefully placed the community in a very competitive position with regard to the Town's eligibility for Federal flood hazard mitigation funding. Moreover, by identifying the measures that can be taken to remove the downtown area from the one percent flood zone, there is the potential that FEMA could be willing to approve a flood map revision that would help businesses avoid the increasing costs for flood insurance and encourage new compatible development and redevelopment within the community's downtown. Similar flood protection projects have been undertaken in Fort Fairfield and Fort Kent. However, this would be the first such project in coastal Maine.



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Municipal Official Quote

“The flood resiliency study funded through the Maine Coastal Program was significant in terms of providing the citizens, businesses and public entities in the Damariscotta area with a much clearer picture of the vulnerability of the downtown area to storm surge and sea level rise. The report prepared by Milone and MacBroom serves as an excellent resource document and as a very good foundation for our efforts to obtain additional funding and technical support for downtown flood mitigation projects.”

Matt Lutkus, Damariscotta Town Manager

For more information

Contact Matt Lutkus, Town Manager; mlutkus@damariscottame.com; 207-563-5168;

The report from Milone and MacBroom and other documents related to the resiliency project can be accessed through the Town’s website:

www.townofdamariscotta.com

