



The CoastWise Approach for Tidal Road Crossings

The Challenge

Safe, dependable roads are crucial for supporting Maine’s economy, access to critical services, and a way of life valued by citizens and visitors alike. Maintaining roads is a challenge for most communities in Maine, especially in coastal areas experiencing rapid change due to accelerated sea level rise. Where roads cross tidal wetlands at over 800 locations in Maine, the challenges are considerably magnified.

The services provided by tidal wetlands can include coastal storm and flood damage protection, pollutant break-down, fish and wildlife habitat, and opportunities for commercial harvesting and recreation. Some, like salt marshes, store atmospheric carbon that would otherwise contribute to sea level rise and other climate shifts. To deliver these services, tidal wetlands must remain healthy and resilient to sea level rise. That requires unimpaired tidal flow, but about 90% of Maine’s tidal road crossings are tidal restrictions. These crossings put Maine’s tidal wetlands at risk, but are also more apt to experience flooding, higher maintenance costs, and interrupted access to emergency services.

The CoastWise Response

Traditional practices for designing tidal road crossings haven’t adequately addressed the unique complexities, uncertainties, risks, or benefits associated with tidal environments. In response, Maine Coastal Program and over 30 organizations have developing the CoastWise Approach for tidal crossing design. CoastWise provides a voluntary set of best practices, decision-making tools, and path for designing safe, cost-effective, ecologically supportive, and climate-resilient tidal crossings.

CoastWise Principles

Tidal wetlands are dynamic systems influenced by a wider range of interacting social and environmental factors than most non-tidal streams. They require a design approach that adequately addresses complexity and risk, now and in the future. Principles of the CoastWise Approach include:

- ◆ **Know your Tidal Crossings:** Use the Maine Coastal Program’s [Tidal Restriction Atlas](#) or other available tools to learn which crossings are tidal or likely to become tidal in the coming decades.
- ◆ **Ask for Advice:** CoastWise Technical Partners can help with project planning, connecting with the right resources, and providing other support to navigate the tidal crossing design process.
- ◆ **Engage Qualified Engineers:** Engineers skilled in tidal hydrodynamic modeling are essential to crossing investments that effectively manage risk and provide the greatest resilience benefits.

- ◆ **Encourage Local Participation:** Crossing design involves value judgements having lasting impact. A transparent, participatory design process encourages outcomes that serve communities best.
- ◆ **Start with Sea Level Rise:** Objective, risk-based selection of a sea level rise scenario early in the project process provides the necessary foundation for all subsequent work.
- ◆ **Identify Low-lying Features of Concern:** Understanding the vulnerability of flooding to severely damaged wetlands, the built environment, and resource uses is essential for managing risk.
- ◆ **Establish Clear Objectives:** Early development of clear, measurable crossing performance objectives streamlines the design process and avoids costly design revisions.
- ◆ **Size Crossings for Resilience:** Keeping pace with sea level rise requires tidal wetlands to experience the full ebb and flow of the highest tides throughout the life of the crossing.

Learn More

For information about the CoastWise Program, please contact Slade Moore (below). For advice on individual crossing projects, contact any of the listed providers according to their service areas.

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Organizations Contributing to Development of the CoastWise Approach

