



The CoastWise Approach for Tidal Road Crossings

The Challenge

Healthy tidal wetlands provide coastal storm and flood damage protection, pollutant break-down, and opportunities for commercial harvesting, recreation, and education. They also support species that depend on the unique features of tidal wetlands to survive. Wetlands storage of atmospheric carbon helps slow the rate of sea level rise and other climate shifts that put coastal communities at risk.

Wetlands like saltmarshes, clam flats, and others need adequate tidal flow to remain healthy and provide benefits important to people and the environment. Structures that extend across tidal wetlands like roads and dams often restrict tidal flow. Most (85%) of Maine's 900 tidal restrictions are caused by road crossings. Along with impairing the community benefits of wetlands, most of these crossings were not designed to avoid risks associated with accelerated sea level rise, like flooding, interrupted access to important services, and higher road maintenance costs.

The CoastWise Response

When road crossings wear-out or fail, they are replaced. But traditional replacement approaches don't often address the unique complexity, benefits, and potential hazards of tidal environments. In response, Maine Coastal Program and over 30 organizations are developing the CoastWise Approach for tidal crossing design. This winter, the CoastWise Manual will provide a voluntary set of science-based, field-tested best practices, planning tools, and guidelines to encourage the design of safe, cost-effective, ecologically supportive, and climate-resilient tidal crossings.

CoastWise Principles

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

- **Start planning early:** Adequate time to seek funding, collect diverse data types, perform data analysis, and develop design alternatives is crucial to successful projects.
- **Consult a Project Partner:** Consider consulting one of our cooperating CoastWise technical providers to help with project planning.
- **Know the system:** Determine if your site is or will become tidal. Maine Coastal Program's [Tidal Restriction Atlas](#) will display crossings that are tidal now and those likely to become tidal in the

coming decades. Our technical provider network can also help with this.

- **Engage a tidal engineer:** Crossing designs that integrate objectives for safety, sea level rise, environmental health, and cost effectiveness require a high level of tidal engineering expertise.
- **It's not just the stream:** Good designs require an understanding of the site's wetlands, uplands, other tidal crossings, low-lying properties, wetland health, and vulnerable species.
- **Look ahead:** Select sea level rise scenarios based on the community's tolerance for flooding, emergency access needs, desired crossing life-span, and long-term cost effectiveness.
- **Do no harm:** Consider design alternatives that best avoid risk to people, property, and environmental values. Restoring full tidal flow at the crossing is ideal, but not always possible.

Learn More

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

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The CoastWise Approach Project Partners

