

Town of Charleston, Maine

Municipal Stream Crossing Grant Program

OVERVIEW

Road crossing issues have been of concern to the town of Charleston, Maine for over 30 years. Like other Maine towns, many of Charleston's culverts are undersized and in poor condition, requiring frequent maintenance and posing threats to both the local community and environment. Since 2008, the town has prioritized funding to improve crossings and will complete a total of 5 replacements in 2020. Three of the five culvert replacement projects are funded in part by the Maine Department of Environmental Protection's (ME DEP) Municipal Stream Crossing Grants Program (MSCG).



PARTNERS AND TECHNICAL ASSISTANCE

ME DEP, United States Fish and Wildlife Service (US FWS), Atlantic Salmon Federation (ASF), US Department of Interior Natural Resource Damage, Maine Audubon Society, Maine State Department of Marine Resources (ME DMR)

PROJECT DESCRIPTION (Anticipated Completion August, 2020)

Undersized crossings are likely to fail during a large flood event and can heavily impact local communities, especially in smaller towns. In Charleston, culverts that are overwhelmed by high stream flows threaten normal access for Charleston's residents, local businesses, including farms and a gravel operation, the Mountainview Correctional Facility, and emergency services. Proper reconstruction of these crossings will help create greater social and economic stability in the town during high flow events.

The public infrastructure improvements of relatively close sites will widely expand the overall stream network connectivity of the upper Crooked Brook watershed. This series of undersized culverts restrict the passage of aquatic and terrestrial organisms, affecting both the watershed's ecosystem and the locals who have been fishing in the streams for generations.

Restoration plans for all five sites incorporate relatively low-cost, but extremely durable, low-maintenance, long lasting structures with a significantly increased capacity than the existing culvert pipes, restoring and protecting local habitat while ensuring public safety. The Town of Charleston is combining funding from local and outside sources to complete these replacement projects..

CHALLENGE

Like many other communities in Maine, acquiring the necessary resources to complete such a project was an initial challenge. Doing so required finding partners and technical assistance providers to fund and/or finance the infrastructure improvements that adequately address the social, economic and environmental needs of the town.



APPROACH

The overall project is largely financed through an oil-spill settlement stemming from damage done in the lower Penobscot River watershed. With the assistance of contractors and government agencies, the town found money to supplement these contributions and willing partners to bring needed expertise and oversight, assuring that all sites could be restored. Additionally, by utilizing similar designs across all replacements and a short work window, they were able to reduce mobilization costs and further capitalize on the financial, informational, and technical resources available.

RESULTS

Completion of these three public crossings in Charleston will foster the integrity of the roads and protect the social, economic and environmental resilience of the town. Altogether, restoration of all five crossings will open 12.6 miles of previously disconnected streams, allowing for free movement of aquatic and terrestrial organisms within an extensive area of the Crooked Brook watershed.

The three culverts and cost estimates are:

- Site 1303 Bacon Road, Unnamed Tributary to Crooked Brook - \$162, 098
- Site 1286 Garland Road, Crooked Brook - \$105,698
- Site 1302 Bacon Road, Crooked Brook - \$125,073

LESSONS LEARNED AND APPLICABILITY TO OTHER MUNICIPALITIES

This project is focused on improving connectivity to a variety of habitat types for fish and other organisms. In these times of high prices for such road construction projects, it was vital that additional funding sources were identified early in the process to ensure that all five sites can be replaced. Seeking assistance and combining different financial and technical assets can enable towns such as Charleston to build the high-quality stream crossings needed to safeguard the townspeople, traveling public, local economy, and natural resources.

The restoration plans for highly resilient but low-cost crossings at all five sites provide a good model for municipal crossing upgrades elsewhere in Maine. These plans are based on very thorough assessments grounded in years of survey experience and tied directly to principles of proven Stream Simulation Design principles and techniques. Forethought and proper planning translates directly into cost- and construction efficiency, additionally aiding towns in preparing applications and increasing the likelihood of receiving grant monies.

RECOMMENDATION

We encourage other towns that experience flooding, road washouts and economic and social disruption from extreme weather events to use the approach that the Town of Charleston took to link their culvert replacement projects within a connected stream network, and to maximize construction efficiency through their replacement schedules. Charleston used many sources of local, state and federal funds to leverage limited town resources.

FOR MORE INFORMATION

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