

CASE STUDY: INFRASTRUCTURE

Flood-Resilient and Fish-Friendly Road-Stream Crossings

Lead Agency: Housatonic Valley Association (HVA)

Partners: Princeton Hydro, UConn Civil & Environmental Engineering, CT DEEP Division of Inland Fisheries, Civil Engineer, municipalities

Funding: [NFWF New England Forests and Rivers Fund](#), [Long Island Sound Futures Fund](#), [Bring Back the Natives Fund](#), UConn CIRCA

Website: [HVA](#), [North Atlantic Aquatic Connectivity Collaborative Database search page](#)

Project Overview:

From 2014 to 2017, HVA conducted a region-wide assessment of road-stream crossings in the Northwest Hills region, including 1,300 bridges and culverts using protocol from the [North Atlantic Aquatic Connectivity Collaborative](#). HVA's research indicates that about 56% of non-bridge road-stream crossings are moderate or worse barriers to fish and wildlife movement. Through partnership with the University of Connecticut, they've used flood modelling to evaluate water flow over roads. That modelling showed about 29% of non-bridge structures do not have the capacity to deal with a 25-year recurring flood interval. HVA worked with experts in biology, landscape-scale conservation, and watershed protection and officials in the municipalities to prioritize culvert replacement. By identifying the problem structures, it is possible to restore habitat connectivity *and* reduce flooding risk at these crossings. HVA also worked with the towns of Oxford and Seymour through a [CIRCA grant-funded project](#). HVA has been applying for infrastructure funding from various sources like the National Fish and Wildlife Foundation's [Long Island Sound Futures Fund](#) and the [Bring Back the Natives Fund](#) to couple with local and state investment to replace priority culverts like those on Pound Mountain Brook in Kent and Guinea Brook in Sharon. Each of these priority structures are barriers to fish and wildlife movement through high-quality cold-water habitat, a risk that will be exacerbated by climate change.

How Project Contributes to Rural Resiliency:

A community with a limited budget for large-scale infrastructure can maximize their investment in both natural resource conservation and flood management, using a reliable protocol coupled with scientific and local knowledge. The interaction between climate change risks, infrastructure, and natural resources is significant. This case study not only improves the existing infrastructure but can inform future infrastructure investments with new design standards.



Barrier Culvert in Kent, CT photo by HVA

Suggestions for towns and/or COGs to assist in this type of project: Partnering with a watershed organization that can help with prioritizing areas of conservation and/or infrastructure improvements will benefit the larger landscape while maximizing the capital investments.

Contact for Questions:

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Wozniak-Brown, Joanna. "Rural Resiliency Vision and Toolkit." Northwest Hills Council of Governments. December 2018. Available at <https://resilientrural.com>