



The Healthy Farm, Healthy Watershed Program: Lessons Learned And Future Opportunities

Northern Rhode Island Conservation District

Project Summary

Small-scale livestock farmers (<15 acres) in the Scituate Reservoir Watershed (SRW) typically do not have the resources for on-site composting and manure storage, or enough land to spread manure properly. Manure is often mishandled on-site, piled on the soil surface close to wetlands or streams, where it threatens both ground and surface water quality through nutrient loading and pathogen contamination. In order to reduce nutrient loading (phosphorus) and associated eutrophication in the SRW, the Regional Compost Feasibility Study and Pilot Project was implemented from 2015-2017 by the Northern RI Conservation District (NRICD). Final project results revealed important information that was not previously considered- farmers don't see their manure as a problem or nuisance even if they are not utilizing it, farmers aren't interested in giving their manure away for free, farmers understand their manure piles to be compost when they aren't, and they are not making the connection between their manure and water quality. The purpose of The Healthy Farm, Healthy Watershed Project was to steer small-scale livestock owners in the SRW toward making the connection between their manure piles and water quality. NRICD implemented a farmer-driven education and outreach effort for livestock farmers that made clear the connection between manure and water quality, and rewarded farmers who demonstrated this connection through the "Healthy Farm, Healthy Watershed Certification Program." Additional program aspects included an on-the-ground inventory of small livestock farms in the Scituate Reservoir watershed and the creation of factsheets and videos that can be used to educate farmers about safe and water-friendly livestock waste management for years to come. Though challenges in working directly with farmers led to modifications to the initial scope of work, the project still yielded benefits that will aid future outreach efforts on the continually-important issue of manure management in the SRW.

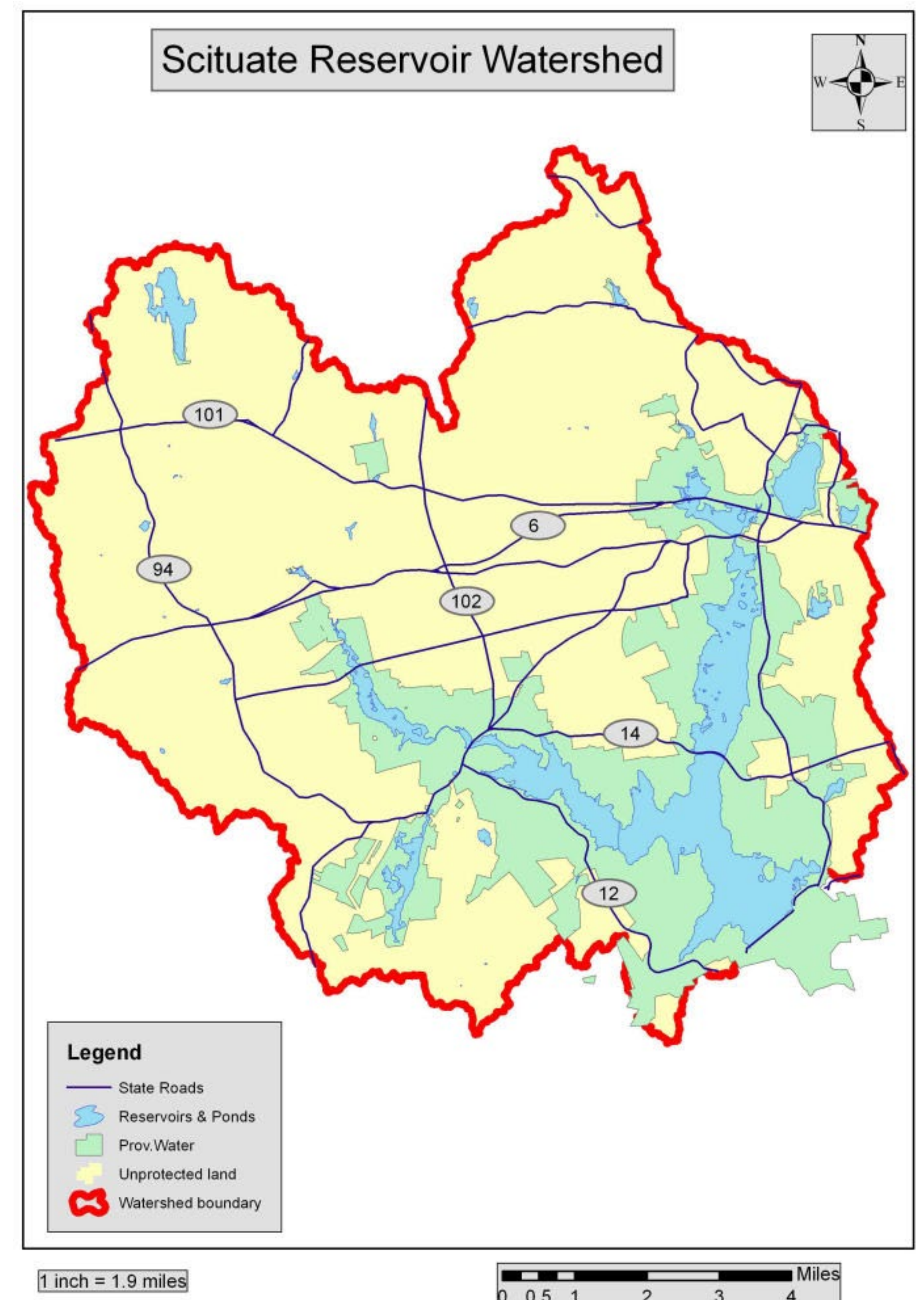


Above: A manure pile on a small privately-owned family farm in the Scituate Reservoir watershed. This manure was relocated away from water resources as part of the project.

Below: Manure Ambassadors were offered 2' by 4' weatherproof signage to display their manure management efforts to their neighbors.
 Right: The Project encouraged manure management among livestock owners in the Scituate Reservoir watershed in Foster, Glocester, Scituate, Johnston, and Cranston, RI. Map: Providence Water



The Healthy Farm, Healthy Watershed Program was supported by the Southeast New England Program (SNEP) Watershed Grants. SNEP Watershed Grants are funded by the U.S. Environmental Protection Agency (EPA) through a collaboration with Restore America's Estuaries (RAE). For more information on SNEP Watershed Grants, see www.snepgrants.org.



Early Project Steps And COVID-19 Challenges

The inventory of livestock farmers in the SRW as well as the update of existing URI Cooperative Extension factsheets were completed in 2019-2020. The livestock farmer inventory was uploaded into ArcGIS and distributed to project partners for future use in outreach efforts and watershed planning. During this time, conversations with potential farmer consultants who committed to participate in the project indicated that many were no longer available due to changes in their personal situations and, later, the complications brought by the COVID-19 pandemic beginning in March, 2020. A decision was made to work with interested farmers on an individual, instead of group, basis. Also early in the project, the "Watershed Farmers: Growing Healthy Food and Clean Water" poster contest curriculum was created and distributed to teachers in 2019. However, due to the COVID-19 school shutdowns in 2020 only 140 students received a classroom visit and only 56 poster contest entries related to the theme were received. The outreach portion of the program adapted to the newly-virtual environment by creating a virtual classroom lesson (viewed 56 times), a virtual workshop for adult watershed residents, and a backyard livestock waste management magazine insert (distributed to over 15,000 homes).

As project work began, information provided by USDA NRCS revealed that the Small Manure Composting Facility project could only be funded for producers that obtain a Comprehensive Nutrient Management Plan, a process that interested farmers found to be prohibitive. Therefore, NRICD decided to fund the creation of one Small Manure Composting Facility that could be used as a demonstration site for watershed residents, as opposed to 3-6 structures funded by USDA NRCS as initially planned. Construction on this facility, located at a small privately-owned farm in Scituate, RI, was completed in 2022. One ambassador installed a manure storage facility, while another took other steps to mitigate manure impacts to the SRW, including manure removal.

Small Acreage Livestock Farms - Best Management Practices

Protecting Water: Fact Sheet 1

GOAL: Understand the connection between your manure storage and nearby water quality. You will identify practical on- and off-farm practices to minimize risks to water resources.

Your farm benefits your family and your community:
 Small acreage livestock farms are family-owned and operated. It is often a hobby that has the added benefit of bringing in supplemental income. Small farms provide benefits to the community by practicing environmental stewardship of the land and water. Currently there are many hardworking, enthusiastic Rhode Island farmers that practice land stewardship for their health, their families, and the environment. Farming provides food security, enhances wildlife habitat, grows the local economy, and provides tax benefits to communities. Small farms can also maintain rural and historical characteristics of the community while bringing neighbors together.

The critical need to protect water:
 Groundwater¹ and surface water² are interconnected. When it rains or snows, groundwater and surface water are recharged. Activity on your property can affect surface water and/or groundwater - either positively, negatively or both.

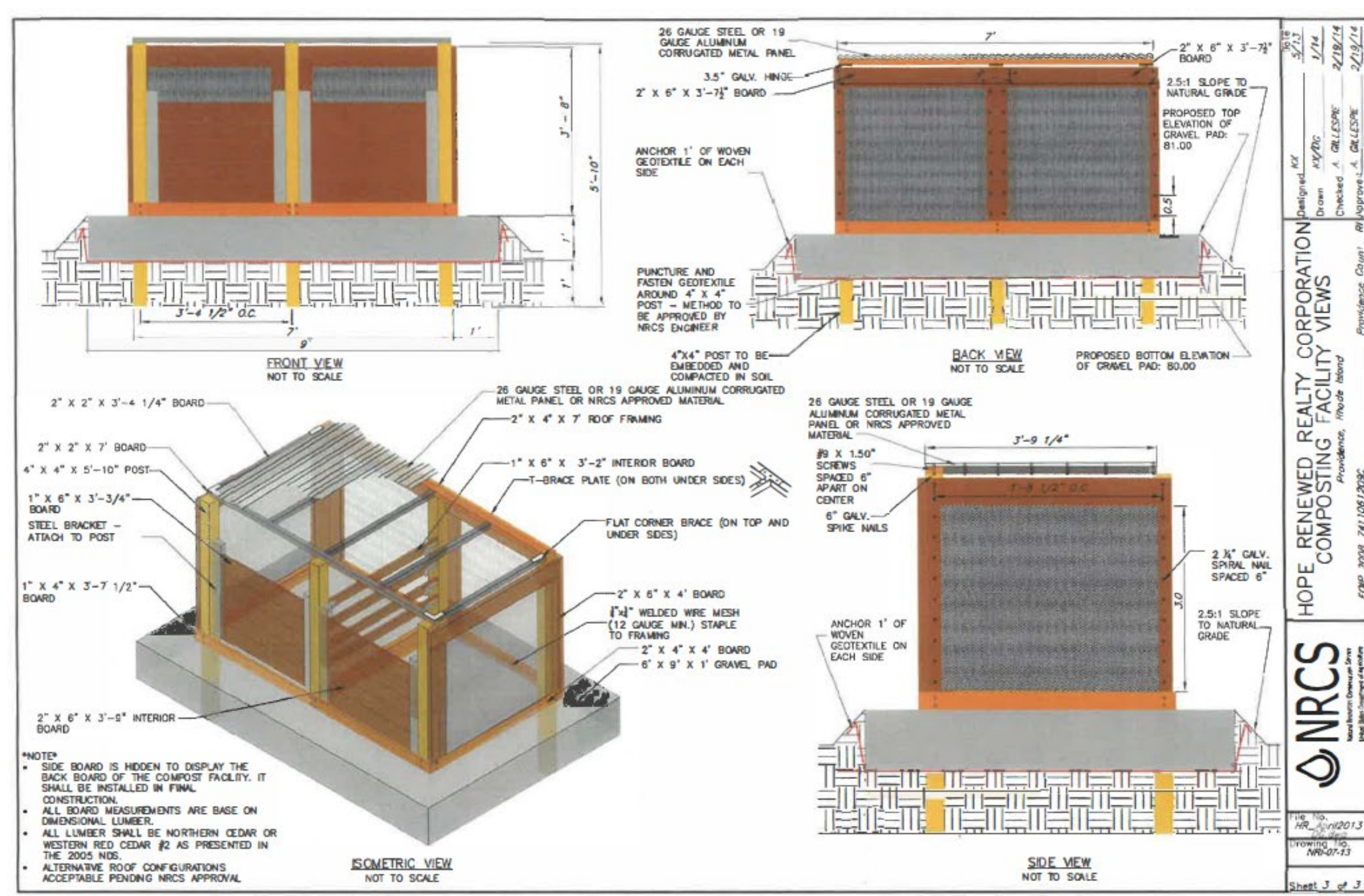
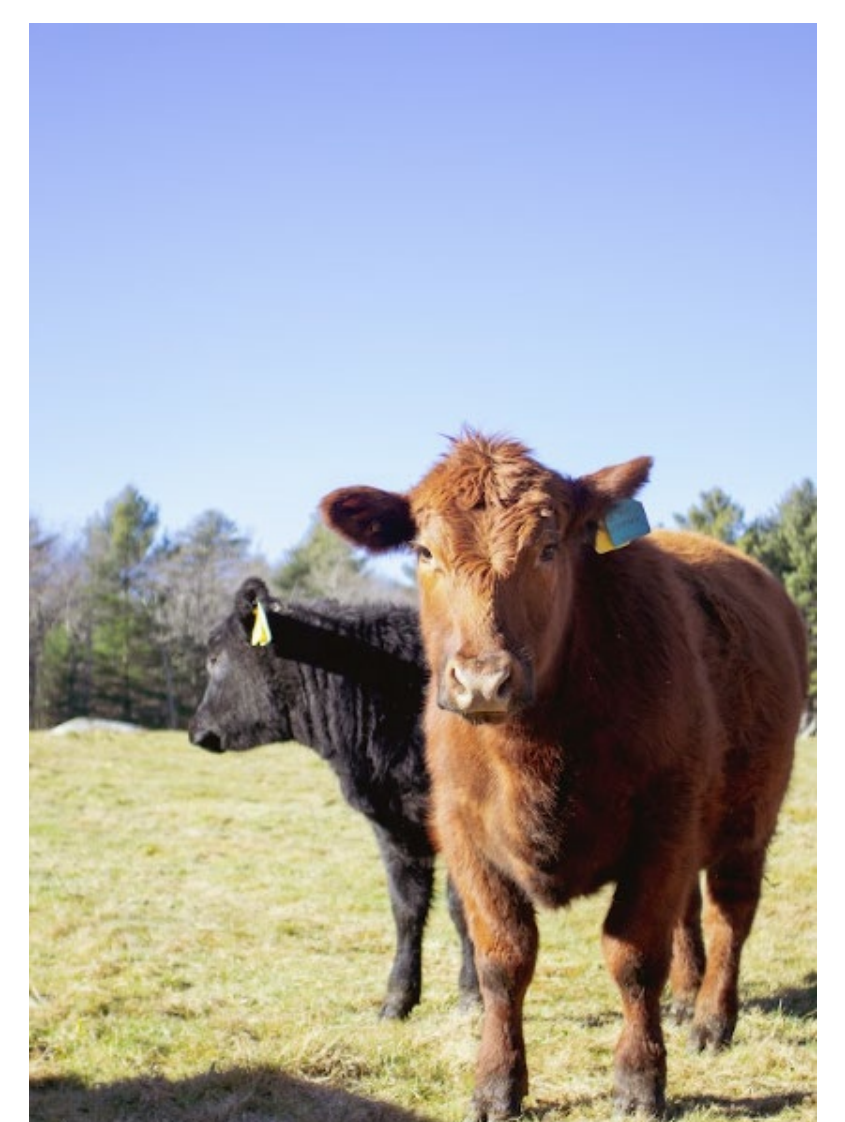
Over 60% of Rhode Islanders get their drinking water from the Scituate Reservoir. A reservoir is a natural or man-made body of surface water that is used as a drinking water supply. Protecting the Reservoir's watershed³, our watershed, is critical to the health and quality of our drinking water and the environment. The City of Providence owns much of the woodlands surrounding the Scituate Reservoir, which filter and clean the water before it enters the drinking water supply. Most properties that are not owned by the City are owned by private homeowners—many of whom have their own wells and raise animals.

Groundwater¹ is water that is held underground by soil or spaces in rocks. Groundwater is everywhere, but the depth to groundwater varies.

Surface water² is water that collects above the ground.

Watershed³ is an area of land that drains all the streams, rainfall, and surface water to a common outlet, such as the surface of a reservoir or stream.

Left: NRICD staff edited and revised the manure management fact sheets created by URI Cooperative Extension. The fact sheets can be accessed at nrird.org/manure, and are utilized by NRICD technical staff. Below: Cattle at the home of one of the program's two successful manure ambassadors.



Program Successes And Challenges, 2022-2024
 Farms identified in the inventory were targeted with direct mailings at several points during the project, both to participate in a potential manure exchange program and to attend workshops. Direct mailings proved a successful method for attracting workshop attendees in the target demographic. However, the manure exchange website, hosted by farmfreshri.org, only had two farmers sign up as of the project's end date. This served to highlight that farmers believe that their manure has value and they are not interested, in most cases, in giving it away. However, they are interested in learning how to manage it better to protect their own water resources and those of their neighbors. Two Ambassadors ultimately entered into agreements during the program; one installed the NRICD/PW-funded manure storage unit, and the second participated in manure removal and re-siting of her manure storage pile. Workshops were held in 2022 and 2023. Despite frequent poor-weather rescheduling, 5-7 farmers attended each event. Though these numbers may seem small, all of the participating farmers were small livestock owners living in the Scituate Reservoir watershed, who can now take small steps in their manure management to improve water quality in the Scituate Reservoir watershed.

Lessons Learned

Many lessons were learned during the outreach components of this project that can be useful to other organizations considering farmer-centered outreach efforts in the future.

1. Most small farmers are juggling myriad family, work, and property commitments that can cause frequent changes to their availability to participate in farmer-centered outreach efforts, even when initial interest is high.
2. The identity of small livestock owners changes rapidly. Some try out farming for several years before learning it is not for them, and new farmers can move in just as quickly. This showcases the advantage of enduring web- and document-based educational methods for this audience.
3. Accessing funding resources from the USDA remains challenging for many farmers. This showcases the importance of low-cost manure management methods such as proper manure pile siting and pile coverage that can be implemented without USDA or other professional assistance.
4. Classic outreach methods such as print-ads, mailing, and in-person workshops remain popular with the rural farmer demographic in western Rhode Island.

Above left: Plans for a small manure storage facility provided by USDA Natural Resources Conservation Service. Above right: The small manure storage facility, designed to plan and installed by a manure ambassador in Scituate, RI. The installed facility was shared with the public at two free outreach events.

Right: The manure exchange website remains live at nrird.org, and currently lists four manure suppliers. Suppliers report that interest is high but successful transactions have been challenging, as many of those seeking manure do not have means to transport it. Below: Due to difficulty with securing funding for manure storage facilities from federal sources, NRICD also encouraged livestock owners to take small steps such as covering manure piles with tarps to minimize runoff to area water resources.

NRICD Home Program Details Fact Sheets Manure Exchange Program Event Calendar

Program Summary of Program

Outreach & Education Projects

Providers by Location

Locate the Manure Provider near you using the county map at right, then scroll down for provider details and contact information.

For a printable version of this list, [click here](#).

Funding to assist in removal and transportation of manure is available.
 For more information you can reach out to:
 Molly Allard, District Manager
mallard.nrird@gmail.com
 (401) 934-0840 ext. 2



Moving Forward: Addressing Small Manure Producers in the Scituate Reservoir Watershed Beyond Project Completion

The "Healthy Farm, Healthy Watershed" project has created many deliverables that will be used beyond the project's closing date of February, 2024. The small livestock owner GIS layer is being used by USDA NRCS contractors to create a watershed plan for the USDA's National Water Quality Initiative. As part of this project, USDA NRCS is funding NRICD to conduct additional outreach related to manure management in the Scituate Reservoir watershed. These upcoming 2024-2025 outreach projects will be designed taking the lessons learned in the Healthy Farm, Healthy Watershed program into account. The Healthy Farm Healthy Watershed Toolkit is live at nrird.org/manure, and will continue to be hosted and shared with new livestock owners that NRICD planning staff interact with in the course of their duties. The manure exchange remains active, with one participating manure supplier reporting frequent inquiries received during the early months of 2024.

Project resources, including educational videos created in 2024, will be incorporated into the ongoing Scituate Reservoir Watershed Education Program outreach project in the Scituate Reservoir watershed towns of Foster, Glocester, Scituate, and Johnston, which is a partnership between NRICD and Providence Water. Thus, though some of the project deliverables were not completed as imagined in the grant proposal, it remained a useful project to the partnership that continues to seek a reduction of small livestock waste pollution in the Scituate Reservoir watershed.

Project Partners

