Stone Infiltration Landing at Wentworth Lake

The finished project looked like it could have been there all along. During rain storms, the Murray's place at Wentworth Lake had a trail of stormwater runoff from their parking area passing in front of the porch steps and running down the bank of the lake. The Murray's parking area had recently been regraded and they had installed some large boulders and other edging to stabilize the area and prevent runoff from reaching the lake. However this one area remained a challenge. The fix was a boxed-out, stone-filled infiltration landing at the bottom of the porch steps.

The project area before, showing runoff from the parking area running into the lake in the background, and after, showing the boxed out infiltration landing that captures the runoff.

Background

This project really began at the May 2018 Water Summit in Wolfeboro. Anne Blodget of the Wentworth Watershed Association (WWA) and Soak Up the Rain New Hampshire (SOAKNH) team members recruited homeowners who were interested in having the SOAKNH team assess their properties for signs of runoff. In July, the WWA / SOAKNH team met with ten lakeside property owners and made recommendations on opportunities to capture or prevent runoff.

When we checked in with Roger to see how the landing worked throughout the rest of the season, he said "We are very pleased with the way the stone landing is working. It addressed the runoff issue that concerned us. It did not overflow and no stones were pushed out [during storms]"

As a result of the visits, the team chose to ask the Murrays if they would be willing to collaborate on a project to address the parking area runoff issue. The Murrays had been working hard to find ways around their place to be lake-friendly and were pleased and eager to take on this project as well.

Project Details (and a Lesson Re-learned)

In September 2018, a team of five (Anne and Julie Brown from WWA, two SOAKNH team members, and Roger Murray) gathered to install the stone infiltration landing. First, we dug out the area for 6" X 6" pressure treated timbers to sit almost flush with existing grade. We were careful not to dig deeper than needed; this helps ensure that water entering the stone filled area will not move *under* the timbers and come out the other side. To further this objective, we experimented by using a small amount of quick setting concrete inside the downhill timber where it met the soil.

Getting the area reading to set the 6" X 6" timbers in place.

After setting the two timbers in place and securing them with 18" X ½" rebar rods, we excavated the rest of boxed-out area. We were careful to find a spot on the Murrays' property where the excavated material could be deposited and not susceptible to washing away during up-coming rain storms.

Luckily, we re-learned a lesson without any consequences: always call Dig Safe before digging! This applies even on your own property. We came across some electric lines that we didn't realize were there. We were able to work around them, but if we had known, we could have planned better. Dig Safe is a free service which works with utility companies to mark the location of underground lines. Simply mark out your project area, call Dig Safe 72 business hours before digging, and the underground lines will be flagged free of charge.

The final step was to fill the area in with ¾" drainage stone that had been delivered to the Murrays' place. The result was a clean and attractive project that looked more like a convenient, bare-foot friendly porch landing than an erosion-preventing, lake-friendly runoff device.

<u>Final Result</u>

This project is estimated to help keep the lake clean by capturing the following runoff and potential pollutants per year:

- 12,552 gallons (1,674 cubic feet) of water
- 18 pounds of total suspended sediment
- 0.04 pounds of phosphorus
- 0.13 pounds of nitrogen

The final cost of the project was approximately $128, as follows:

- One 12' X 6" X 6" pressure treated timber: $50
- Six 18" X ½" rebar lengths: $15
- 1 yard of ¾" drainage stone, plus delivery: $57
- Bag of quick-setting concrete: $6

Another look at the final project.

Thank you to WWA and the Murrays for their hard work and collaboration on this project!