

2019 Research Showcase

& STIC Annual Meeting

Evaluating Effectiveness of Floodplain Reconnection Sites along the Lamoille Valley Rail Trail: A Blueprint for Future Rail/ River Projects

PROJECT TITLE

Evaluating Effectiveness of Floodplain Reconnection Sites along the Lamoille Valley Rail Trail: A Blueprint for Future Rail/ River Projects

STUDY TIMELINE

September 2018 – August 2020

INVESTIGATORS

Kristen Underwood, UVM
Mandar Dewoolkar, UVM, PI
Donna Rizzo, UVM, Co-PI
Beverley Wemple, UVM, Co-PI
Arne Bomblies, UVM, Co-PI

VTRANS CONTACTS

Emily Parkany, Research Manager
Jeff Ramsay, Environ. Spec. Sup.

VTANR CONTACT

Staci Pomeroy, River Scientist

This fact sheet was prepared for the 2019 VTrans Research Showcase & STIC Annual Meeting held at the Dill Building in Berlin, VT, on September 11, 2019 from 8:30 am– 1:00 pm.

Fact sheets can be found for additional projects featured at the 2019 Symposium at

<http://vtrans.vermont.gov/planning/research/2019showcase>

Additional information about the VTrans Research Program can be found at

<http://vtrans.vermont.gov/planning/research>

Additional information about the VTrans STIC Program can be found at

<http://vtrans.vermont.gov/boards-councils/stic>

Problem Statement

Lowering of historic rail beds to restore floodplain function is a river restoration practice with great potential, but which must also consider the multiple uses and functions of river and rail corridors, along with the potential impacts and benefits to adjacent infrastructure, life safety and health, and the environment.

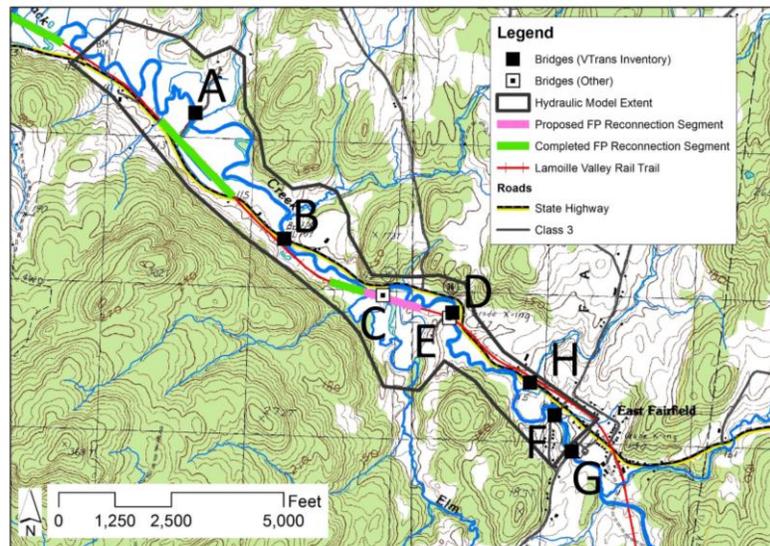


Figure 1. Hydraulic modeling extent along the Lamoille Valley Rail Trail and VT Route 36, East Fairfield, VT

Methodology

Using a two-dimensional hydraulic model, the team is evaluating several alternatives for enhanced floodplain reconnection at a demonstration site on the Black Creek in Fairfield (Figure 1).

Next Steps

We will quantify the effectiveness of each alternative for flood-water attenuation and sediment / nutrient storage over a range of design flows and evaluate potential impacts and benefits to adjacent infrastructure with potential changes in flood stage due to a reconnected floodplain.

Potential Impacts and VTrans Benefits

The modeling effort and alternatives analysis will illustrate an investigative approach that can be replicated at other sites where berms for historic rails or roads traverse floodplains, and the feasibility of floodplain reconnection can be explored. Additional floodplain reconnection sites identified within the Lake Champlain Basin represent an opportunity for VTrans to achieve reductions in pollutant discharges from impervious surfaces under its Phosphorus Control Plan.