FACT SHEET

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

RESEARCH 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

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This fact sheet was prepared for the 2018 VTrans Research and Innovation Symposium & STIC Annual Meeting held at the State House in Montpelier, VT, on **September 12, 2018** from **8:00 am– 1:00 pm**.

Fact sheets can be found for additional projects featured at the 2018 Symposium at

http://vtrans.vermont.gov/planning/research/2018symposium

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

Introduction

Lowering of abandoned 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.
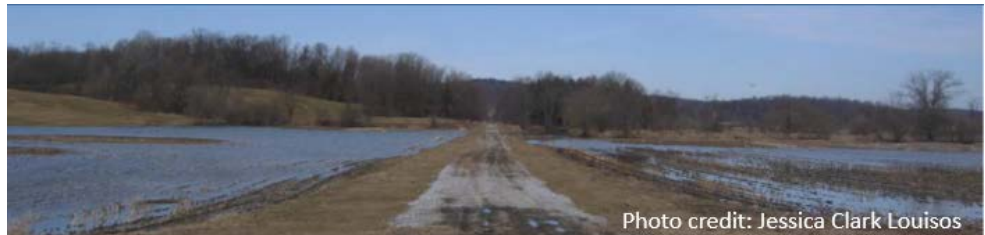

Photo credit: Jessica Clark Louisos

Fig. 1. Flooding on rail bed reconnection site, Black Creek, Fairfield, VT, 2008

Methodology

Using a two-dimensional hydraulic model and digital elevation model derived from an Unmanned Aerial Survey, the team will evaluate several alternatives for enhanced floodplain reconnection at a landowner-approved demonstration site on the Black Creek in Fairfield that would seek to restore 22 acres of floodplain by modifying 1,300 feet of embankment. 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. The completed research will also provide Vermont agencies with a protocol for identifying and prioritizing potential floodplain reconnection sites along river and rail corridors state-wide. Ten reconnection sites on the Lamoille Valley Rail Trail completed in 2006-2008 will be evaluated for their effectiveness.

Next Steps

The research team will begin work in September of 2018 in collaboration with VTrans and the Vermont Rivers Program.

Potential Impacts and VTrans Benefits

The modeling effort and alternatives analysis will illustrate an investigative approach that can be replicated at other sites where historic rail beds 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.