

Title: Assessment of Culvert Replacements Modified for Fish Passage

SPR No: RSCH011-969

Project Description: With over 50 modified culverts previously installed throughout the State of Vermont, the objective of this research project is to determine the effectiveness of fish passage restoration. An examination of five representative fish passage structures will define the character, durability, and stability of the constructed habitats and improved connectivity upstream and downstream of the culvert. In addition, the research project will evaluate the cost-effectiveness of these types of structures, including the timing of the natural bed load accumulation in the structure. The field investigation is to be broken down into several steps including stream cross-sectional surveys, thalweg profiles, stream velocity measurements, and

substrate evaluation. In addition, observations on durability of the structure with regards to the fish habitat modifications will be noted throughout the study duration.

Since 2008, all the site surveys have been completed for each of the five sites located in Whitingham, Warren, Readsboro, Buel's Gore and Jay. This includes physical three-dimensional surveys of the banks, stream bed and manufactured stream beds inside the culverts as well as pebble counts upstream and inside the culverts to quantify the type of bed materials and mobility. Flow measurements were also collected along with a visual assessment of the integrity of the culvert, presence of a low flow channel inside the culvert and any scour pools that may be present.

Start date: 09/28/2005

End date: 09/28/2012

Status: Active Inactive Completed

Total Dollars: \$25,000

Index Terms: Administration Bridges Construction Environmental

Geotechnical Maintenance Materials Pavements Safety Traffic Transit

Sponsor Organization

Name: Vermont Agency of Transportation

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Subjects: Environmental, Aquatic Organism Passage, Culverts, Stream Hydrology



Conducting pebble counts--
Jay, VT

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