

# CENTER ROAD BRIDGE #1 REPLACEMENT

TOWN OF BROWNINGTON, VERMONT



*Damaged Structure, Note Abutment in River*



*Completed Brownington Bridge*

Bridge No. 1 over the Willoughby River was damaged beyond repair during Tropical Storm Irene. Floodwaters overtopped the bridge and scoured the southern abutment, causing it to undermine then shift into the stream dropping the southern side of the deck approximately 5 feet from the road, leaving it partially suspended above the river. FEMA, the Agency of Natural Resources, and Fish and Wildlife Officials agreed that the damaged structure needed to be removed prior to the spring thaw to prevent further damage to the Willoughby River, which is a valued salmon and trout spawning ground in the Northeast Kingdom of Vermont. DG was hired to prepare bid documents and solicit bids for the removal of the structure immediately, and DG worked with Eckman Engineering to complete final designs and bid documents for a separate contract for the reconstruction of the new structure.

The State of Vermont Agency of Natural Resources would not allow construction of the structure without increasing the span to meet the required minimum channel width based on ANR calculations and the hydrology and hydraulics of the site. FEMA determined the additional length of the structure would not be eligible for reimbursement from FEMA grants, so DG worked with the Towns of Brownington and Barton to secure a Town Highway Structures Grant to pay for the additional length and to include approach slabs to ensure longevity of the structure.

The bridge was opened on November 29, 2012, one month early and approximately 20% (\$240,000) under budget.

## KEY FEATURES:

- Construction work to remove the structure during winter 2011-2012 to reduce the risk of environmental damage to the Willoughby River.
- Hydrology and hydraulic evaluation to determine bridge sizing.
- Assisted Towns in obtaining structures grant to cover improved portions of the Project.
- Completed construction 1 month early and 20% under budget.