

## ICNet Members' New England Research & Project Survey



<b>Research/Project Focus</b>	Sealing Small Movement Bridge Expansion Joints – Sealant development, testing, field installation and monitoring
<b>Research/Project Description</b>	The main objective of this project was to conduct research which will contribute to the development of durable joint sealing material design for small movement bridge expansion joints in New England States. This included development of sealant material, laboratory testing, and field installation and monitoring.
<b>Primary Category*</b>	Roads Bridges Culverts
<b>Geographic Location</b>	New England & New York
<b>Funding</b>	New England Transportation Consortium (NETC) and Federal Highway Administration (FHWA)
<b>Contact</b>	Ramesh Malla, UConn: MallaR@enr.uconn.edu
<b>Infrastructure sectors effected, subject area</b>	Bridges
<b>For modeled climate or sea level rise projections, AOGCM or other sources used</b>	N/A

<b>Other Information, data, models, used</b>	Laboratory experiments, field installation and monitoring
<b>Time periods analyzed</b>	2003 – 2011
<b>Status /Date submitted to ICNet</b>	Completed. Submitted Sept , 2013
<b>Brief key findings to date</b>	<p>From the laboratory testing the newly developed silicone foam bridge joint sealant displayed improvements over the commercially available solid silicone sealants in key areas, including adhesion to the bonding substrate, amount of sealant required to fill the joint, high extensibility, and low modulus. The foam system has great potential for reducing installation and maintenance costs and has the added attraction of using much less of a costly polymer. At the same time, the foam was observed to maintain the desirable properties of relatively rapid curing, self-leveling, and ease of installation that make the sealant appealing. The newly developed sealant has been successfully installed and monitored for over 2 years in 4 New England bridges, one each in Connecticut, New Hampshire, New York and Rhode Island.</p>
<b>Key publications/reports?</b>	<p>Malla, R. B., Swanson, B., and Shaw, M.T. (2010b). "Laboratory Evaluation of a Silicone Foam Sealant for Field Application on Bridge Expansion Joints," <i>Procs., the 2010 SEM Annual Conf. &amp; Exposition</i>, Soc. of Experimental Mech., Bethel, CT, June 2010, 12 pages onward</p> <p>More publications are available</p>
<b>Other information (e.g., web links to technical reports).</b>	<p><a href="http://www.uvm.edu/~transctr/pdf/netc/netcr58_02-6.pdf">http://www.uvm.edu/~transctr/pdf/netc/netcr58_02-6.pdf</a>  <a href="http://dx.doi.org/10.1061/(ASCE)1084-0702(2007)12:4(438)">http://dx.doi.org/10.1061/(ASCE)1084-0702(2007)12:4(438)</a></p>

**\* Categories: Roads, bridges, and culverts; Pavement and/or soils; Hydrology (study of data/floods); Environmental/water resources (stormwater, drinking water); Transportation assets (network); Climate model output**