

Hello and welcome,

Did you know Massachusetts has nearly 30,000 miles of roads and more than 30,000 culverts statewide? That means you could drive over a culvert every mile. The majority of existing culverts are undersized, deteriorated, and at risk of failing and having negative effects on roads, infrastructure, and stream health.

You may remember receiving a survey about culverts from me this summer. As culvert expert and stream continuity specialist with the Mass Department of Fish and Game's Division of Ecological Restoration, I will share new culvert and bridge technologies, interesting projects, and funding sources as I come across them.

Got a culvert question or want to learn more about a topic? Give me a call or send me an email. With my background as a construction superintendent and environmental consultant I provide communities with a wide variety of technical assistance including finding funding, project planning, design, and construction methods.

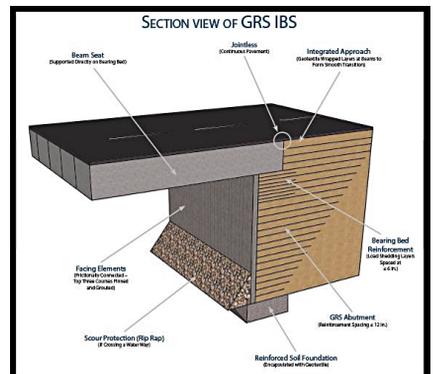


Hemlock Street crossing in Douglas, MA used GRS abutments that are, on average, 60% less expensive than traditional abutments.

The first cost savings technology I want to share is GRS-IBS abutments. The Town of Douglas, MA used them on Hemlock Street for the replacement of a 12'-6" wooden

bridge with a 26'-8" long wooden bridge.

Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS or GRS for short) abutments are made up of alternating soil lifts and layers of geosynthetic fabric and faced with dry laid concrete block. GRS can be faced with anything from waste blocks to sheet piling because the face is not a structural component of the bridge. GRS provides a very stable abutment for a bridge of almost any span.



A section view of GRS (precast.org)

MassDOT recently used GRS abutments for a 105' bridge in Sheffield, MA. The Douglas's Highway Superintendent, John Furno was able to implement GRS abutments on this bridge replacement project to reduce both cost and construction time. Bridges that use GRS abutments cost up to 60% less than traditional concrete abutment and project construction times are shortened to just weeks (FWHA). The total project cost for this nearly 27 foot bridge was approximately \$460,000 and even with a few construction delays took under 8 weeks to construct.

Additionally, GRS abutments enable you to pave directly over the bridge eliminating the traditional bumps when crossing a bridge. In Douglas, DPW staff had to constantly replace bolts in the old bridge that were being ripped out by plows. They replaced the existing wooden deck with asphalt, and annual plowing and maintenance is much easier.



Paving over the bridge deck

Overall, the project was less expensive and completed faster than traditional bridge construction. These advantages over traditional methods allow you to span the stream and meet the MA River and Stream Crossing Standards. By spanning the stream Douglas also increased their storm readiness against high flows.

For more information about GRS abutments check out [FHWA website](#), [their webinar](#), or [their short video](#) on YouTube.

For more information about the project please contact Douglas's Highway Superintendent, John Furno (508) 476-3378 or jfurno@douglasma.org.

Please forward this to your municipal officials and reach out to me with questions concerning culvert replacement at (617) 626-1541, Timothy.Chorey@State.ma.us, or visit me at our booth at the MassDOT Innovation and Tech Transfer Exchange on March 8 & 9 for your chance to win a Yeti 20oz Rambler travel coffee mug.

If this message was forwarded to you [Subscribe Here](#) to receive the latest culvert news in Massachusetts.

Sincerely,



Tim Chorey

Stream Continuity Specialist

Division of Ecological Restoration, Mass DFG

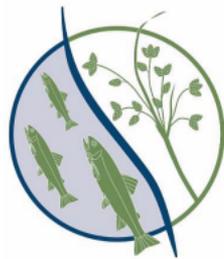
251 Causeway Street, Boston, MA 02114

Email: timothy.chorey@state.ma.us

Office: 617-626-1541 / Fax: 617-626-1505

Web: <http://www.mass.gov/der>

Follow us on Twitter: twitter.com/MassEcoRestore



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