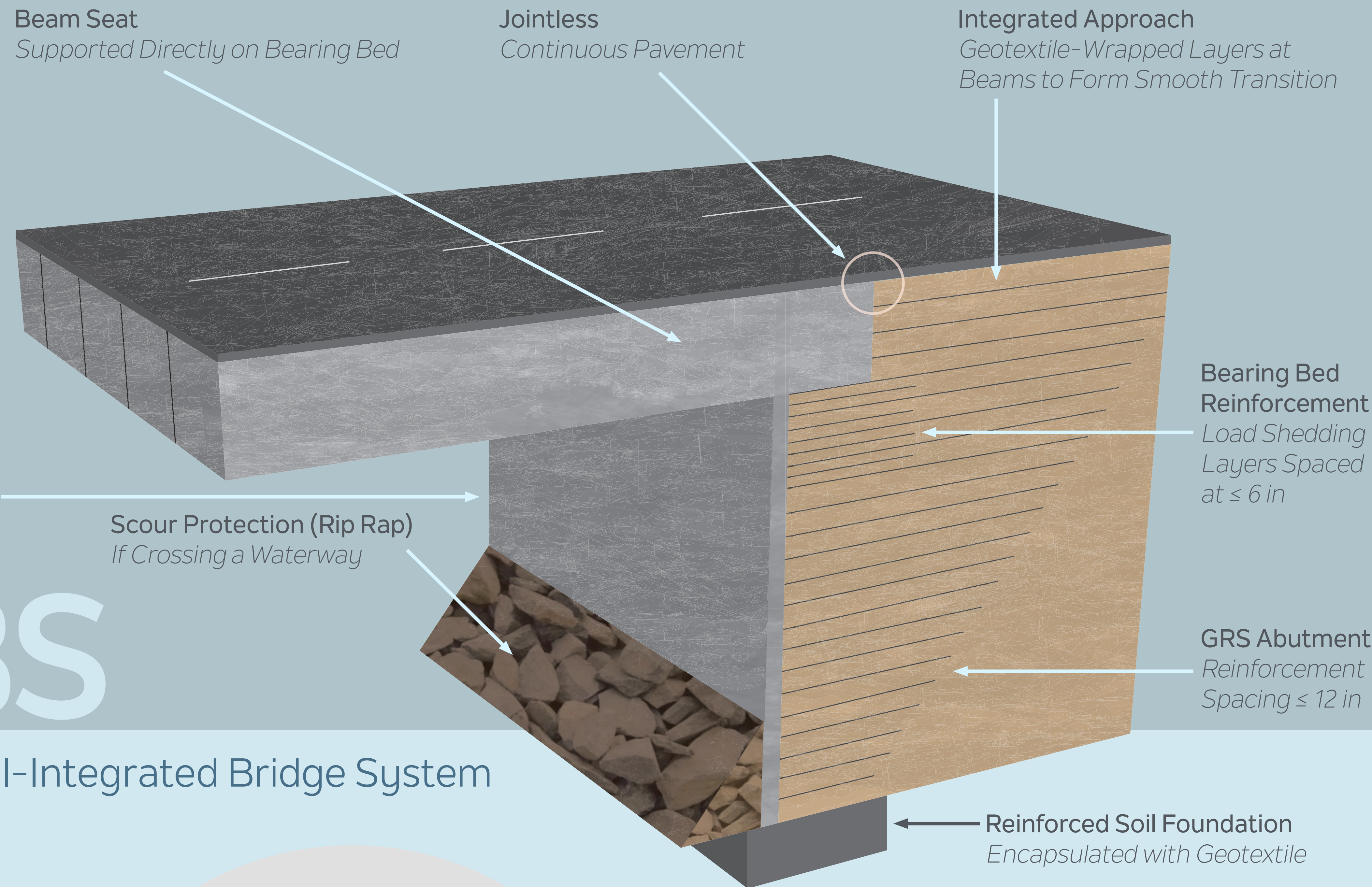
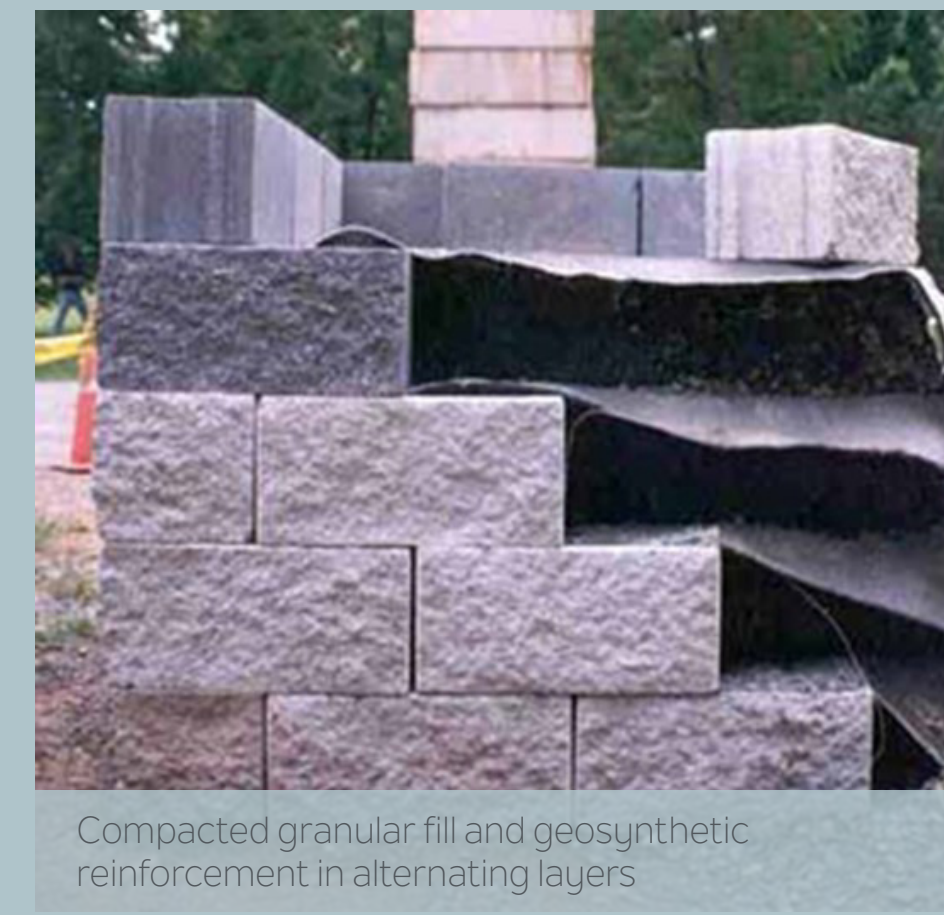


BUILD MORE BRIDGES WITH YOUR BUDGET

Innovations in Restoring Fish Passage in the Pacific Northwest

GRS bridges are a cost-effective system for restoring fish passage during a time when more bridges are needed, but less funding is available.



GRS-IBS

Geosynthetic Reinforced Soil-Integrated Bridge System

Where it's applicable

Single-span crossings with low to moderate scour

Bearing Stress
Less than 4,000 lb/sf

Height
Less than 30 feet

Length
Less than 140 feet

Estimates indicate only 12 to 15% of needed funding is available in Washington, assuming conventional bridge construction. GRS-IBS would help stretch funds further to get more bridges built.

Why it's needed here



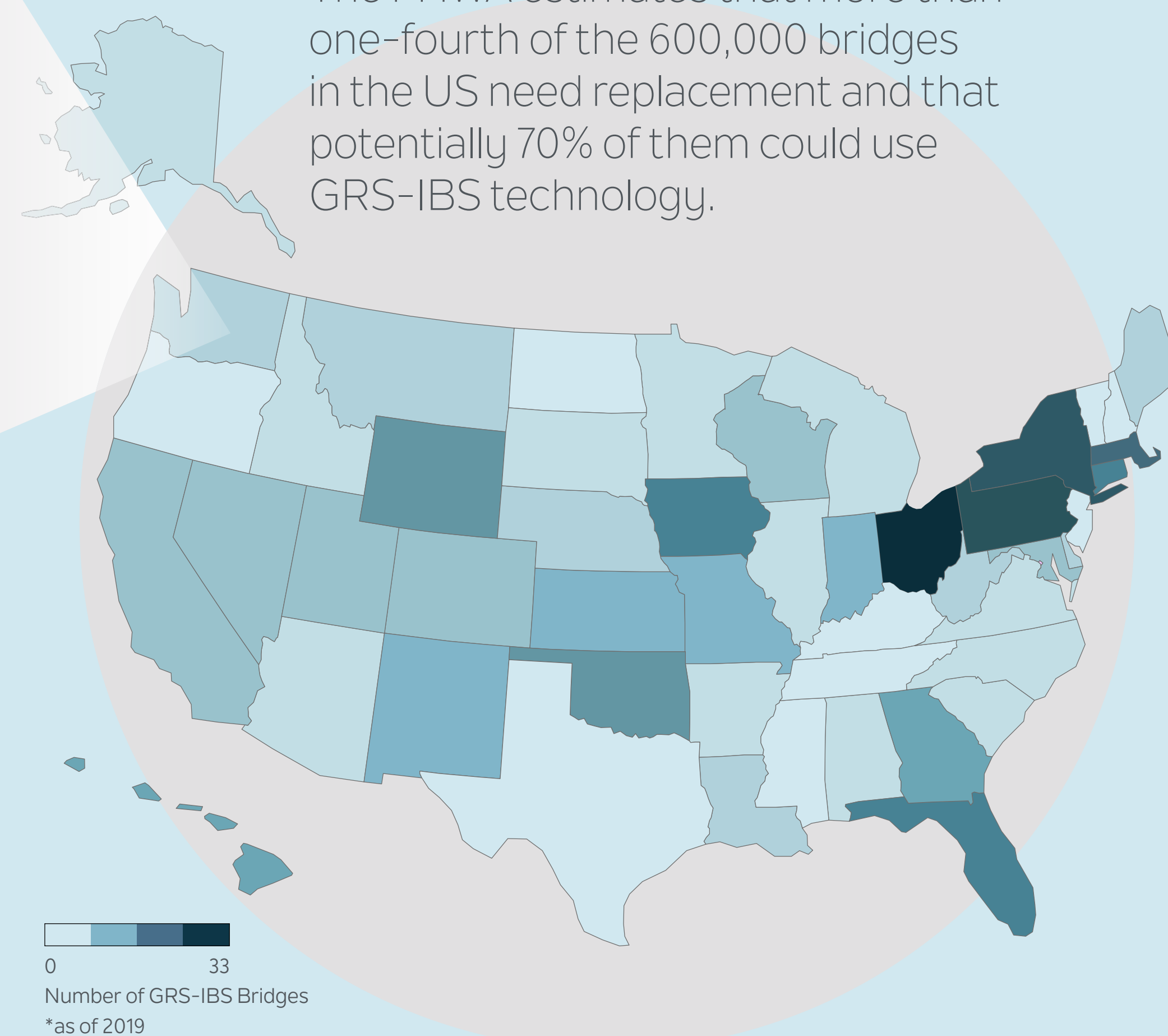
Thousands of highway crossings in Washington present barriers to fish. Hundreds of state-owned culverts will need to be replaced by 2030.¹ GRS-IBS technology has only been used on two Washington bridges so far.

¹ <https://www.seattletimes.com/seattle-news/environment/tied-u-s-supreme-court-decision-means-washington-must-remove-barriers-to-salmon-migration/>

Where it's being used

Over 300 bridges nationally in 44 states*

The FHWA estimates that more than one-fourth of the 600,000 bridges in the US need replacement and that potentially 70% of them could use GRS-IBS technology.



Why Use GRS Abutments? They Save Time and Money!

- \$ Less expensive (20–60%) than conventional bridges
 Easy to maintain (fewer bridge parts)
 Non-proprietary
- ⌚ Fast, easy, simple construction (5 to 6 weeks close to open)
 Common, readily available materials and equipment
 Straightforward design and details (simpler plan set)
- ⚠ Local labor force (non-specialized)
 Nearly all-weather construction
 Very flexible and modular (easy to adapt in the field)
 Works on poor subgrade soils and in seismic areas
 Minimal construction noise and vibration
 Smaller crane required for superstructure
 Abutments serve as permanent, engineered crane pads
 Fits many types and layouts of superstructure
 No bump at transition between bridge and embankment
 Typically can be installed without constructing a cofferdam

