

The Need for State Funding to Provide Matching Cost Share to the NRCS's EWP Program

Spring and summer flooding on tributaries to the Missouri River in Southwest Iowa caused damage to in-stream grade control structures built to protect critical public roadway and bridge infrastructure needed to sustain the rural Iowa agricultural economy. The Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) Program will provide 75% cost share to make the necessary repairs.

Due to the huge amount of repair work needed, many counties affected don't have the flexibility to absorb the burden of 25% match on their own. The more cost share we can provide to the counties, the more work will be completed. Unfortunately, these projects are not eligible for State of Iowa Flood Recovery Fund monies because grade control projects are not considered a flood response, flood recovery, or flood mitigation activity. Additionally, no other federal or state programs exist to perform these emergency repairs.

Based on the estimates we have so far from the NRCS, we have documented 77 sites totaling about \$13 million of repair work. Most work will be concentrated in Page, Montgomery, Adair, Pottawattamie, and Taylor Counties. Less severe or extensive repair work will occur in Crawford, Cass, Audubon, Harrison, Mills, Adams, Woodbury, and Monona Counties. Each individual county or city will oversee survey, design, bid letting, construction, inspection, etc.

2019-2020 EWP Projects by County and Entity				Project Types				
Eligible for HCA Cost Share - Grade Control Portion				New Grade Control		Weir	Outlet	Dam
County	Sponsor	Number	Est. Cost	Weir	Culvert	Repair	Repair	Repair
Adair	Adair Co BOS	8	\$ 1,616,200	1	1	5	1	
Adams	Adams Co BOS	1	\$ 164,805	1				
Cass	Cass Co BOS	9	\$ 653,125			6	3	
Crawford	Crawford Co. BOS	4	\$ 399,326	1			3	
Harrison	Harrison Co BOS	1	\$ 409,600				1	
Mills	Mills Co BOS	1	\$ 248,175			1		
Monona	Monona County SWCD	1	\$ 46,050					1
Montgomery	Montgomery Co BOS	14	\$ 1,588,365			12	2	
Page	Page Co BOS	12	\$ 4,416,605	1		11		
Pottawattamie	Pottawattamie Co BOS	16	\$ 1,435,005	1		8	7	
Taylor	Taylor Co BOS	4	\$ 1,055,420			4		
Woodbury	Woodbury Co. BOS	3	\$ 824,555		1	2		
Woodbury	Woodbury County SWCD	3	\$ 173,828					3
		77	\$ 13,031,059	5	2	49	17	4

The Hungry Canyons Alliance (HCA) is committed to providing an additional 10% in cost share for all EWP projects with grade control, as we did after the last EWP declaration in 2008. The HCA could not wait until the State could approve funding because EWP rules state that all work must be completed within 220 days from when the federal government authorized each project last fall. Work is starting now and is expected to be completed by July 4, 2020, but extensions will be requested.

To meet this goal of providing an additional 10% of cost share for all EWP projects with grade control, the HCA needs approximately \$1.3 million (10% of \$13 million). The HCA will use everything at its disposal to accomplish this. This includes a moratorium on new cost share obligations and using all our remaining unobligated balance of \$812,000.

The HCA asks the state legislature for a one-time appropriation of \$1 million in FY2021 to specifically match the federal EWP funds, an increase of \$550,000.

- The HCA typically receives an annual appropriation of \$450,000 from the state of Iowa.
- An extra \$100,000 would allow us to match all of the federal funds at 75% with 10% state funds and 15% local funds.
- An extra \$450,000 would allow us to continue to offer \$450,000 in cost share to the counties for non-EWP projects.

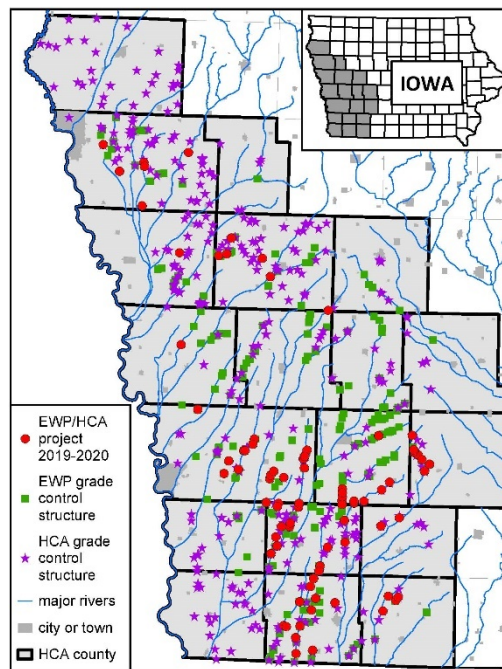
This action has precedent as the State legislature appropriated an additional \$100,000 to the HCA in 2010 to help match federal EWP funds following the 2008 declaration.

The hardest hit counties, especially Page County, would appreciate additional funds being made available to help them cover their 15% share so they can repair all sites. They are considering only repairing approximately two-thirds of their damages because they may not have enough funds to cover their 15% share for all damaged sites.

As demonstrated in past work funded by the Hungry Canyons Alliance, these streams are best stabilized and future damages prevented by using in-stream grade control structures. The most common grade control structure, called a weir, is constructed with steel sheet pile, driven into the streambed, with a riprap and concrete grout slope immediately downstream, a riprap stilling basin downstream of the weir slope, and riprap covered banks. All grade control structures allow the stream elevation to drop in a controlled setting, restore lost stream grade, and prevent further degradation. They also reduce streambed slope upstream creating a calm backwater condition where silt can settle out, decreasing sediment loads and turbidity and increasing water quality.

More than two-thirds of the projects to be repaired in southwest Iowa, especially those projects south of Interstate 80, are problems caused by the breakdown of limestone riprap over time. Limestone locally-quarried in western Iowa tends to have fine laminations, or layers, that can break down over time due to repeated freeze and thaw cycles, including riprap that has been tested and labeled "class E" due to its supposed durability. We now believe this freeze/thaw action is accelerated near streams due to the fluctuation of water levels.

Considering this, the HCA is discouraging the use of all locally quarried limestone, even if grouted, due to the poor-quality rock received in the last ten years. Although it will often cost more, all projects going forward will use harder rock: either quartzite from South Dakota or dolomite from northeast Iowa or even properly sized broken concrete.



Map of grade control structures (GCS) in western Iowa. Purple stars represent past HCA projects. Green squares represent past EWP projects. Red circles represent the EWP projects to be completed in 2020 with the funding being discussed.



Photo of grouted limestone riprap on a weir. Despite being built less than thirteen years ago, the white limestone riprap is flaking and crumbling apart. Even though the riprap was covered with concrete grout (the gray coating), the grout cannot prevent the breakdown of the riprap. Eventually the rock will completely weather away, leaving a ring of grout which will then collapse because it has nothing left to support it. As you look at the photos below, note how the rock and grout, if present, weathers and disappears at the water line, whereas riprap or grouted riprap higher up the streambanks remains in good condition.

Below are before and after flood photos of sites that will be repaired under EWP in 2020.



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