

# From The Board

## By Janell Bradley

November 23, 2020

Fayette County was privileged to be one of just eight counties in Iowa chosen as recipients of a grant promoting the use of UHPC (Ultra High Performance Concrete) for its Q Avenue box beam bridge project just south of Highway 93.

UHPC is a concrete material with a minimum compressive strength of 17,000 pounds per square inch, and can result in excess of 29,000 pounds psi. This is around 10 times greater than the strength of normal concrete.

Also known as reactive powder concrete, a simplified description of how the material is formulated, is to combine reactive powder with water and either high carbon steel, glass, or other material (see accompanying photos.)



**Pictured inside a cup, are some of the many 'thin, pin-like' fibers mixed with reactive powder as part of the Ultra High Performance Concrete process.**



**Once the reactive powder has 'cured' it looks like this. Pin-like fibers were used to strengthen the material, which was designed to be far-less permeable to water and salt – the foe of bridge joints.**

Concrete slabs form the base of the bridge surface, while the UHPC is poured into the joints. For the Q Avenue bridge, pin-thin fibers were mixed into the 'milk-shake' consistency liquid of reactive powder and water. For our purposes, we expect to see a much longer life for this bridge, because the material's low permeability is designed to be impacted much less by salt and rain, which over time, corrode the joints.



**Employees of the firm with whom Fayette County contracted for Q Avenue bridge work, are pictured transferring a bag of reactive powder into a container where it is combined with very fine fibers and water to create Ultra High Performance Concrete, used in the joints of a concrete slab deck for which Fayette County received**

The value to Fayette County in acquiring this grant, is about \$120,000.

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On an entirely different topic, the Fayette County Solid Waste Commission recently received its annual audit report from Renner & Bircham, P.C. of Mason City. As a Board, we recently became aware that some in the public may not be aware that the 28E agreement governs not only the recycling program, but solid waste. While Fayette County no longer buries garbage in its landfill, Iowa DNR requires monitoring of former landfills for up to 30 years.

Thirty percent of the Commission's net position is restricted for closure and post-closure care. State and Federal laws and regulations require the Commission to place a final cover on the landfill sites and perform certain maintenance and monitoring functions at landfill sites for a minimum of 30 years after closure.

Among the highlights of the audit:

- the Commission's operating revenues decreased 2.2% or \$25,688 from fiscal 2019-20.
- operating expenses decreased 1.5% or \$16,518
- net position increased 3% or \$112,538

Total operating expenses for the year ended June 30, 2020 were \$1,083,637, of which the largest portion was paid for tipping fees of \$401,766 and 4348,076 being paid to wages/benefits.

Joan Swenka reported IDNR inspected the landfill site in October and found only one minor infraction relating to signage.

As a point of reference, the transfer station will be closed to the public & solid waste haulers for the Christmas holiday, on Friday and Saturday, December 25 and December 26.