

# Norfolk Insider

City of Norfolk, NE

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## “Preliminary Engineering on Bridge”

People may scratch their heads when they hear \$55,000 will be spent by the City of Norfolk for a study on a new bridge to be built on Norfolk Avenue. What bridge can take that much study?

“Bridge study’ is probably a misnomer. It is actually preliminary engineering as analysis and design work will be undertaken to produce construction options and cost estimates of those options for the City Council,” said Dennis J. Smith, Public Works Director for the City of Norfolk.



“This is a bit of a complicated project for a number of reasons. First of all, we need survey work from First Street to Cottonwood so we know what we’re working with as far as the approaches on both sides of the bridge. We’ll need a traffic study to determine the best roadway configuration,” Smith said.

It will also be determined what bridge structure will best suit the needs of the project with possibilities that include a girder and deck, precast arch or box culvert.

A hydraulic analysis will be done to measure the maximum flow of water under the bridge so that proper modifications can be made in the design to accommodate that flow. This analysis is important as the current bridge was built in 1933 when the North Fork of the Elkhorn River flooded regularly. The flood control was constructed in 1968 so flows are now significantly less.

Another variable of the bridge project is how a trail might be incorporated into it as the City has applied for a grant for a River Front trail just north of the proposed bridge site. The engineers are planning to design the bridge so that a trail could be built underneath.

“The data they collect and the designs they come up with will be used in the final plans for the project. Proper planning makes sure the bridge is built to support busy traffic and heavy loads,” Smith said.

It’s estimated that the total cost of the project could be up to \$1.5 million. The current bridge has been found to be structurally and functionally deficient following a biannual inspection required by the Federal Highway Administration and the Nebraska Department of Roads.

structurally sound and useful for many more years to come. The integrity of the entire project depends on the preliminary work that is done now. We want to do it right," Smith said.

The preliminary engineering is expected to be completed in May 2015 with bridge construction beginning in 2016.