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Crossing Rivers Health Surgical Department & Birthing Center

OPEN HOUSE & **BUSINESS AFTER 5**

Wednesday, November 15, 4:00 - 7:00 p.m.

- Explore the Surgical Department & Birthing Center
- Interactive demonstrations
- Learn more about our services and programs
- Meet our healthcare team

Business After 5, co-hosted by the Prairie du Chien Chamber of Commerce.



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Prairie Du Chien

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Dec. 1 is reopening date for Keystone Bridge

Submitted by admin on Tue, 11/14/2023 - 15:16

Weather Sponsored by Lansing Furniture. Click Here For Full Forecast (http://forecast.weather.gov/MapClick.php? CityName=Prairie+Du+Chien&state=WI&site=ARX&lat=43.0432 &lon=-91.14#.V-RBD0vd5Zg)

Construction crews continue work on Elkader's Keystone Bridge, pouring the sidewalk and putting on finishing touches in anticipation of re-opening the bridge Dec. 1. (Photo by Willis Patenaude)

By Willis Patenaude, Times-Register

Elkader's Keystone Bridge project is nearing completion. Dec. 1 is the deadline, according to the most recent update by project engineer Nate Miller.

While that was the major headline and the takeaway listed on social media by the city of Elkader, the update included other details. This included delayed railing installation, the existence of internal issues that were not revealed on previous scans and necessitated more work and a 9 percent increase in the estimated budget, amounting to approximately \$400,000.

According to Elkader City Administrator Jennifer Cowsert, that will bring the total cost of the bridge to well over \$7 million,



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The railing delay was a potential issue discussed several months ago due to the fabrication process. Part of the problem is that the final fabrication cannot proceed until the bridge sidewalk has been poured and the supporting falsework has been removed. Since the sidewalk is supported by cantilevered steel beams that are anchored to the bridge, it is anticipated those steel beams will end up having a "small amount of deflection" after the sidewalk is poured, causing variations in the location of the beam.

"Fabricating the railing after the sidewalk has been placed will allow for these variances to be accounted for in fabrication and ensure the proper alignment of the finished railing," Miller said.

As a result, the railing will be installed 90 days after the sidewalk is poured and will require about two weeks to be installed. This will disrupt either vehicle or pedestrian traffic during that time, though the city has yet to make a decision on the issue.

In the meantime, it was reported that CJ Moyna & Sons will install a temporary chain-link fence, at no cost to the city, so pedestrians can use the sidewalk and both

almost \$2 million of which the city is responsible for.



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lanes of traffic can be opened on the bridge.

Due to the anticipated delay in fabrication, the temporary railing concept was already in place as a contingency plan. Additionally, Miller stated the contractor is "very confident" the final installation will be finished with the twoweek timeframe

The next item was the additional work that led to the 9 percent cost increase. Eighty-five percent is related to masonry restoration efforts, which were required to repair previously unknown deterioration throughout the bridge.

According to Miller, these internal issues were "not detected" during the initial scanning process with project subconsultant Atkinson-Nolan & Associates, who scanned areas of the spandrel walls and arch rings using surface penetrating radar.

At the time, the intent behind the scans was to "determine the thickness of key elements and evaluate any loss of section that would adversely impact the structural capacity of the bridge," Miller said.

However, the scanning effort, which cost about \$7,000, was limited by the snooper truck provided by the DOT, meaning certain sections were not scanned during the process. Miller stated scanning the entire bridge would have been "cost prohibitive" and that the representative scanning was "determined to be adequate."

Unfortunately, the representative sampling missed several unknown conditions that were encountered during the project, much like the cracked stone, which was also missed during scanning. The scanning situation and lack of detection led council member Deb Schmidt to state, "it blows my mind."

"I still hold to my dislike of the handling/procedures of the evaluation of the bridge in the bid given to the city by the hired experts who chose the equipment they used. What was found after construction started even surprised the engineers and construction crew who are repairing the bridge. It showed nothing to what was really happening inside these arches," Schmidt elaborated in a separate interview.

The list of items contributing to the additional cost is lengthy, including the elevation of the waterproofing membrane that needed to be adjusted to provide proper drainage and flow around the various components under the bridge deck paving, which required placement of on additional 80 cubic yards of special backfill.

Then there was an additional 3.5 cubic yards of structural concrete required on the inside faces of the spandrel walls below the bridge deck paving to stabilize the spandrel walls and provide a uniform surface to terminate the waterproofing membrane. Construction of the below grade portions of the spandrel walls varied from the above grade portions, as the original construction used smaller, rougher cut stones than the above grade portions.

While these issues weren't known when construction started, they have been repaired, along with several other internal issues such as the pinning of the arch rings to the arch barrel, limestone block replacement, void filling and mortar injections and other masonry efforts.

Addressing the additional cost, Miller stated, "It is important to note that if all of the unknown conditions had been known during design, these additional costs would have been included as part of the original bid price and the city is not paying extra to include them now."

While it doesn't essentially change the trajectory of the budget, Schmidt argued that, had these issues been known earlier in the process, decisions might have been made differently.

"I feel that, if we'd known what we were up against from the beginning and had a better understanding of what was inside the limestone pillars, how much decay the old stones really had in them, the previous council would've handled things differently. A grant would've been written differently. The state could've reacted differently. But this didn't happen, why we don't know, so it makes a mess in our economic future to repay our debt that we now have," Schmidt said.

Moving forward, routine maintenance of the bridge will be required, including ongoing mortar repointing, bridge deck sealing and stone dressing efforts. Miller couldn't provide a definitive timeline on how often.

Miller also noted "big ticket items" will require attention in the future, like areas of stone Dutchman repairs to repair other stones as they continue to deteriorate. While he didn't have an exact timeline, he said it is reasonable to expect some of the stone Dutchman repair will be required in the next 15 to 20 years, depending on the rates of deterioration.

With setbacks and rising cost, council member Tony Hauber inquired whether a new bridge would have been cheaper. At the meeting, Miller stated his "gut" felt like a new bridge would have been more expensive, though, in an email exchange, Miller noted "a new bridge would have a longer lifespan and lower maintenance costs, which could result in a lower overall life cycle cost."

"The complexities of the site and historical significance of the existing bridge complicate the full life-cycle cost analysis. This formal analysis has not been completed, but I do believe that the current restoration project was in the best interests of the city," he added.

It is a position Hauber continues to agree with, even though he said "it is tough to be the bearer of the financial information about the coming change order, especially as someone who has worked hard to try to offset the cost of this project via fundraising. That said, I wholly believe, even with additional costs and repairs, that restoring the bridge that binds this community is, was and will continue to be the path forward for this community."

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