

MEETING SUMMARY

Date of Meeting: May 20, 2021 **Re:** Des. No. 1900011 (DHPA No. 26693), SR 933 Bridge Project – Scope Undetermined, Bridge No. (933)31-71-03690 E (NBI No. 011046), SR 933 (Michigan Street) over St. Joseph River

Location: Virtual **Issue Date:** May 26, 2021

Submitted By: Hannah Blad

In Attendance: Mary Kennedy, INDOT CRO
Kelyn Alexander, INDOT CRO
John Krueckeberg, INDOT PM
Danielle Kauffmann, SHPO
Rachel Sharkey, SHPO
Kari Carmany-George, FHWA
Adam Toering, Historic Preservation Commission of South Bend & St. Joseph County

Chad Costa, Lochmueller Group
Gary Quigg, Lochmueller Group
Hannah Blad, Lochmueller Group
Ruth Hook, Lochmueller Group
Michael Vereb, Lochmueller Group

This summary is an overview of the meeting discussion and is not presented as detailed minutes, wherein each individual speaker's questions or comments are quoted as a matter of record. Although, in several areas for clarity, more precise wording from the recording of the meeting has been used for optimal representation.

ITEMS DISCUSSED:

- I. Welcome & Introductions:**
 - a. The attendees listed above were introduced and their affiliations were provided.
- II. Section 106 & Indiana's Historic Bridges Programmatic Agreement Background**
 - a. Hannah Blad (HB) of Lochmueller Group opened up the meeting by explaining the background of Section 106 and the National Historic Preservation Act (NHPA). HB explained Section 106 is part of the National Historic Preservation Act, a federal law requiring federal government agencies to take into account the effects of their undertakings (i.e. construction projects) on historic properties (resources either eligible for, or

listed in, the National Register of Historic Places [NRHP]). Kari Carmany-George (KCG) of the Federal Highway Administration (FHWA) was asked to provide any additional information and she noted that Section 106 applies when certain criteria are met and that usually it is federal funding that engages the Section 106 process. KCG stressed that FHWA wants to hear from the Consulting Parties regarding their concerns and that the project team is “here to listen” today as well as present information.

- b. HB then went on to explain the steps of the Section 106 process and provided an outline. HB then moved on to explain the history of Indiana’s Historic Bridges Programmatic Agreement, including when the agreement was initiated, the goals of the agreement, and the management tools that came out the agreement. HB also explained the 2010 Indiana Historic Bridges Inventory, the resulting list of eligible bridges, and how they are divided into “Select” and “Non-Select” bridges and what these terms mean. The SR 933/Michigan Street Bridge is a “Select” bridge.
- c. HB gave a quick review of the Section 106 process to show where the SR 933 bridge project stands now. HB noted that Step 1 has been completed and Early Coordination Letters were sent to potential consulting parties on November 2, 2020. As a result, the State Historic Preservation Officer (SHPO), Indiana Landmarks – Northern Regional Office, the Historic Preservation Commission of South Bend & St. Joseph County, and the Miami Tribe of Oklahoma have accepted consulting party status.
- d. HB then talked about Step 2, the identification of historic properties, noting that a Historic Property Short Report (HPSR) was sent to consulting parties on January 28, 2021. HB also noted that an Archaeology Report will be completed, if necessary, after the final project scope has been determined. It was also brought up that a mistake was made in the consulting party invitation email. This email incorrectly noted that an Archaeology Report was available for review, but such a report has yet to be produced and will only be produced if deemed necessary after the scope of the project has been determined. Finally, HB talked about Step 3 which is the Historic Bridge Alternatives Analysis (HBAA). This step was noted as ongoing.
- e. HB then moved on to reviewing the above-ground resources within the APE for the project. HB first explained what a historic property is and what criteria a property must meet to be listed in the NRHP.
- f. HB then provided an overview, explaining each resource already listed in the NRHP and deemed eligible for the NRHP within the APE for the project. Each resource was shown along with a short summary of each resource.
- g. HB then progressed further into defining Step 3 of the Section 106 process, the development of the HBAA, and introduced Michael Vereb (MV).

III. Step 3: Development of the HBAA

- a. MV started his part of the presentation reintroducing the participants to the Michigan Street Bridge. He discussed the physical characteristics of the

bridge including its type, style, construction materials, and length, width, and bridge typical section features.

- b. MV then moved on to discuss the history of the rehabilitation work done to the bridge using a series of historic photos of the bridge. MV pointed out the original bridge typical section features were modified through the years including changes to the sidewalks, the addition of raised curb barriers, the removal of the historic light standards, and the replacement of the light standards. MV then brought up a timeline of the rehabilitations, noting that since its original construction in 1914, the bridge has undergone five significant rehabilitation projects.
- c. MV then proceeded to talk about the structural condition of the bridge. MV first noted that railing cracking and coping deflections are an indication of underlying structural deficiencies. Next, MV pointed out the arch and pier segment displacement that has occurred. MV noted that a portion of Pier 3 settled due to undermining and that this led to the displacement of arch segments in Spans B and C. Photos were then shown of the arch segment displacement, noting that in 2013 INDOT began taking measurements at marked locations along the separation to monitor the arch segment displacement. The measurements have not appreciably changed since 2013, which means the movement appears to be stabilized.
- d. MV then moved on to discuss the repairs that have been made to address the structure deficiencies. MV noted that in 2006 a cofferdam was added around each of the piers consisting of a sheet piling perimeter filled with concrete. While the addition of the concrete filled cofferdam helped to stabilize the foundations, it also added load to the existing foundations. MV noted that in 2012 deterioration of the arch rings was addressed by epoxy injection of transverse cracks, patching, and installation of Carbon Fiber Reinforced Polymer (FRP) strips. This rehabilitation did not address the differential settlement of the arch segments in Spans B and C and that condition remains today. MV further detailed the FRP strips, noting that a coating was applied to the underside of arches for UV protection of FRP and that there are some locations where the FRP strips are becoming unbonded and have peeled off the bottom of the arch, especially in Span B.
- e. Finally, MV discussed the overall limestone condition of the bridge. MV noted, and showed with images, that the limestone shows different types of deterioration including spalling, weathering, and mortar joint deterioration. MV also showed images of cracking and spalling of the limestone blocks in the spandrel wall fascia.

IV. Review of Anticipated Alternatives:

- a. Prior to discussing the alternatives, MV first talked about the purpose and need for the project. MV noted that the purpose and need on the slide were abbreviated versions. The purpose and need statements are below:

1. The primary need for the Michigan Street Bridge project is evidenced by the deteriorated condition and insufficient load capacity of the bridge. In addition, the sidewalk on the east side of the bridge does not meet current Americans with Disabilities Act (ADA) standards.
 2. The purpose of the project is to provide a crossing of the St. Joseph River that has a condition rating of at least 7 out of 9, which is considered to be in "good" condition, as well as provide ADA-compliant pedestrian facilities. In addition, the purpose of the project is to improve the load rating factor. This project will extend the life of this crossing for a minimum of 25 years.
- b. MV then described the three alternatives, first discussing the No Build Alternative. MV stated that the No Build alternative would not result in any work being done to the structure and leaving it as is. MV also noted that this alternative is not feasible because the current structure has an estimated remaining service life of 5 to 10 years until rehabilitation or reconstruction is needed.
 - c. The second alternative MV discussed was Alternative B1a which is the Rehabilitation for Continued Vehicular Use Meeting Secretary of the Interior's Standards for Rehabilitation, including arch and foundation rehabilitation. Plan sheets were shown with colors indicating what would be removed and replaced and what would be removed, repaired, and reinstalled on the bridge. This alternative includes the removal and storage of light standards and limestone for repair and replacement. The pier foundations will be strengthened, a portion of the arch where the displacement has occurred will be reconstructed, all the arches will be patched and waterproofed, the spandrel walls will be reconstructed, the arch fill will be replaced, and the pavement/curb barrier/sidewalks will be reconstructed.
 - d. The third alternative MV discussed was Alternative B1b which is the Rehabilitation for Continued Vehicular Use Meeting Secretary of the Interior's Standards for Rehabilitation, including arch and foundation replacement. Similar to the second alternative the limestone and light standards will be removed and stored before they are repaired and replaced on the rehabilitated structure. This alternative includes the construction of a new abutment and pier foundations on new piling. The arches will be reconstructed and waterproofed. The spandrel walls will be reconstructed, the arch fill replaced, and the concrete pavement/curb barrier/sidewalks will also be reconstructed.
 - e. Following the alternatives, MV showed an image of both elevations of the bridge where the current limestone and concrete conditions are color coded. The yellow-colored limestone fascia and railing post and pilaster elements (as shown on the image) would be removed and replaced on the rehabilitated structure to match the existing appearance. The red colored

limestone (as shown on the image) indicated damaged limestone that will either be repaired or replaced in-kind. MV noted that the light blue rail panels (as shown on the image) are the existing concrete panels and they will be replaced in-kind. MV pointed out two purple colored rail panels (as shown on the image) on the east elevation on the south end of the bridge. These are the only two remaining rail panels constructed of limestone. MV noted the intent of the project is to preserve the limestone railing panels and place them back in their location with the rehabilitation. The next slide showed images of the two remaining limestone railing panels and their current condition.

V. Summary Remarks/Next Steps:

- a. Following the discussion of the alternatives, HB talked about the next steps for the project which includes the distribution of the meeting summary, the acceptance of consulting party comments regarding the consulting party meeting, and the eventual distribution of the HBAA.
- b. Danielle Kauffmann (DK) asked for clarification regarding the replacement of the concrete rails, asking if they will be replaced in-kind and if the only two existing limestone panels will be the only limestone railing panels on the bridge following the reconstruction. MV concurred with DK's statement, noting that concrete rails will be replaced in-kind with concrete rails and that only the two existing limestone railing panels will continue to be constructed of limestone following the rehabilitation alternatives as currently planned. MV noted that as early as 1945, limestone panels were replaced on the bridge which indicates that the material was and is not ideal to use in the railing area of the bridge. MV also noted that some of the historic aesthetic details of the original railing panels might be restored in the reconstructed concrete railing panels, as over time the previous rail replacements were not sympathetic to the original design of the bridge.
- c. Mary Kennedy (MK) asked if replacing the concrete rails in-kind was a cost issue, deadweight issue, a combination of the two, or another issue entirely. MV indicated that it was not a structural issue, but that it would be a cost issue that would prevent putting limestone railings throughout the structure. MK asked if there were durability issues with the limestone railings. MV concurred with this statement, noting that starting in 1945 the panels began to be replaced. He noted that weathering and maintenance issues likely resulted in the replacement of the limestone railing panels. John Krueckeberg (JK) asked MV if the concrete railings could be stamped to look like limestone or somehow given the appearance of limestone. MV concurred with that statement. JK then asked HB if the material or the aesthetic would be more important to the historic nature of the bridge. HB noted that both the material and aesthetic are important but that if the material used in the original construction has long term maintenance issues, a comparable material would be acceptable. HB noted that if the concrete

can be made to look more like limestone, the bridge would retain a higher level of historic aesthetic. MV and JK continued to talk about the use of concrete. MV noted that aggregate can be seen in the concrete panels and that it could be possible to stamp them or texturize the replacement panels to look similar to limestone. HB asked if the salt use (for ice melt on the pavement) on the bridge can be attributed as the main cause of the deterioration of the limestone railing panels. MV agreed that the use of the salt could be a cause of the deterioration and noted that the remaining two panels do seem to indicate that, since the one closer to the road has significantly more deterioration than the other panel. MV also noted that in general the varied degree of limestone deterioration in the individual blocks could be the nature of the material, depending on where they were extracted from as evidenced by similar weathering of fascia blocks on the spandrel walls which are not directly exposed to road salt. Adam Toering (AT) asked if the remaining limestone panels were located at the end of the bridge where the railing flares. MV confirmed that the remaining limestone panels are located at the southeast corner of the bridge.

- d. AT then asked about the lifespan option associated with the alternatives, noting that the bridge currently has a lifespan of 5-10 years, but wondered if the other two options had an anticipated lifespan of 25 years or a longer outcome. MV noted that the full replacement of the foundations and arches would result in an anticipated lifespan of about 75 years, while the rehabilitation of the foundations and arches would be less, the exact lifespan amount is unknown at this time. MV brought up the fact that the bridge has load restrictions and that the foundation fixes in the past have added additional weight. These problems will persist even after the rehabilitation.
- e. MK noted that the bridge is a local historic landmark and due to local preservation ordinances, a Certificate of Appropriateness (COA) will be needed for the work on the bridge. MK asked AT if any of the proposed alternatives would cause problems with getting an approved COA, and that INDOT should be looking out for any problems the work will cause with regard to getting an approved COA. AT noted that he thinks the alternatives will be able to be approved administratively because of how the bridge will be reconstructed. AT noted that if the footprint changed or if the light standards were removed, that's when such an issue would come up and the COA would need to go in front of the board. AT reiterated that tentatively he thinks either alternative could be approved but noted that a lot of review needs to happen before the application can be approved.
- f. No other questions were asked, and HB concluded the meeting.

VI. Next Steps

- a. **Consulting Parties have 30 days to provide comments on the preliminary alternatives. Comments are expected by June 25, 2021.**

May 26, 2021

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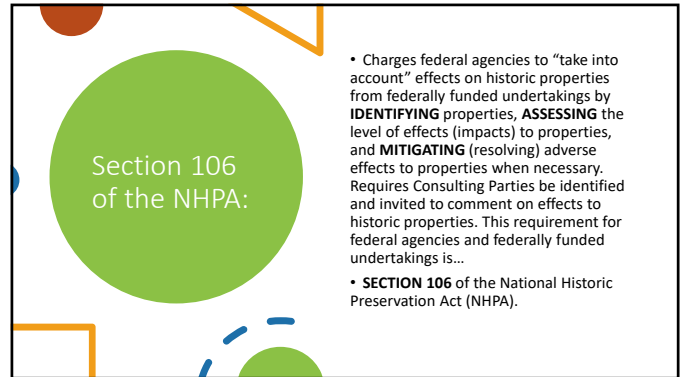
The meeting concluded at approximately 10:57 am.

Meeting Summary prepared by Hannah Blad and Gary Quigg

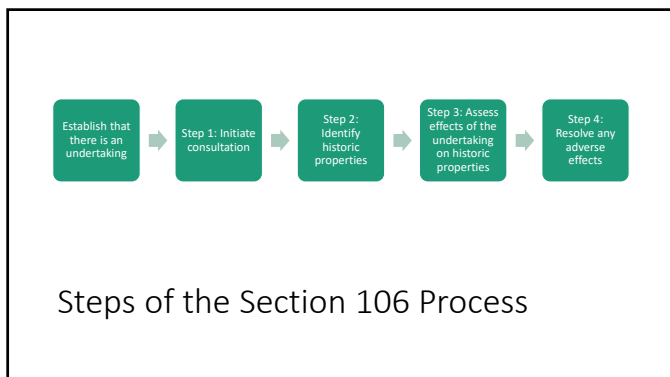
The above constitutes our understanding of the meeting. If you believe there are omissions, additions, or corrections, please send your written comments within seven working days to Lochmueller Group.



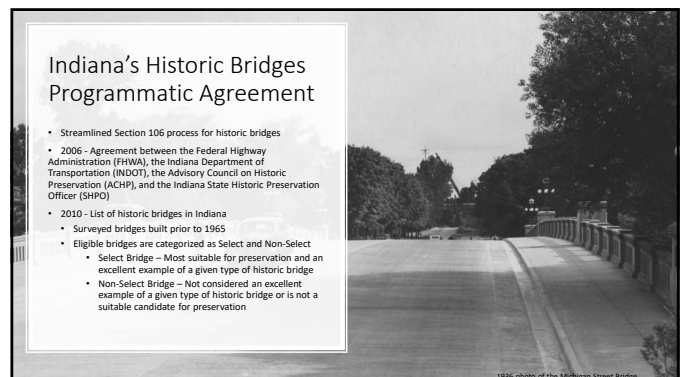
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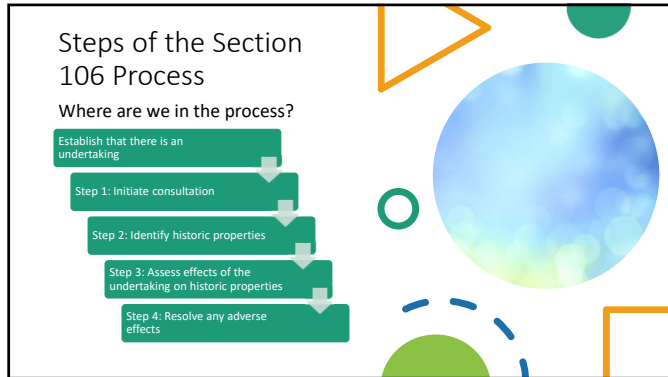
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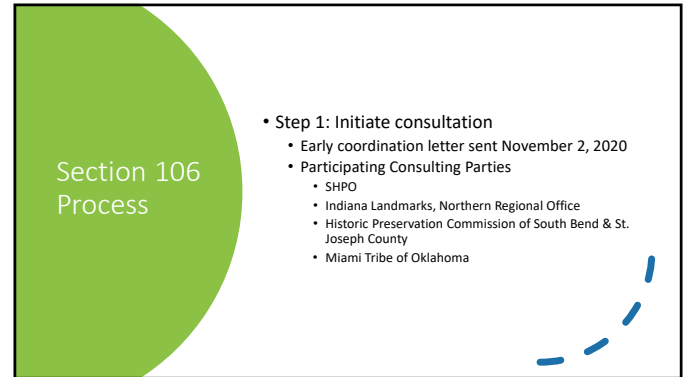
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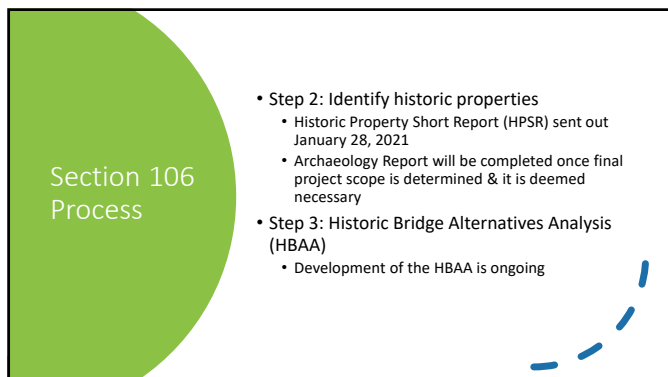
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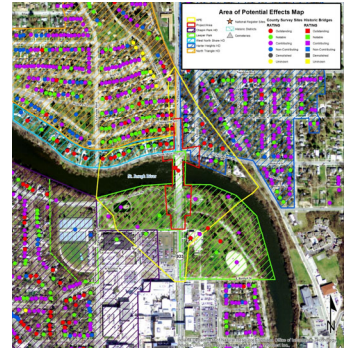
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What is a historic property?

- **Must meet one of the four NRHP criteria:**
- A) Associated with events significant to the broad patterns of history
- B) Associated with the lives of persons significant in our past
- C) Embodies distinctive characteristics (architectural significance)
- D) Must show, or be likely to yield, important information to history
- **Historic properties are generally at least 50 years old or older**
- **Historic properties are either *listed* or *eligible for listing* in the NRHP**

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Area of Potential Effects (APE)



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Leeper Park
NRHP-listed

Criterion C (architecture)
SR 933 (Michigan Street) Bridge is a
Contributing Resource to Leeper Park



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Chapin Park Historic
District
NRHP-listed

- Criterion A (community planning and development)
- Criterion C (architecture)

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Harter Heights
Historic District
NRHP-eligible

- IHSSI #201-597/598-35001 – 35277 & #201-597-10019 – 10021
- Criterion A (exploration/settlement and community planning and development)
- Criterion C (architecture)

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Step 3: Development of the HBAA

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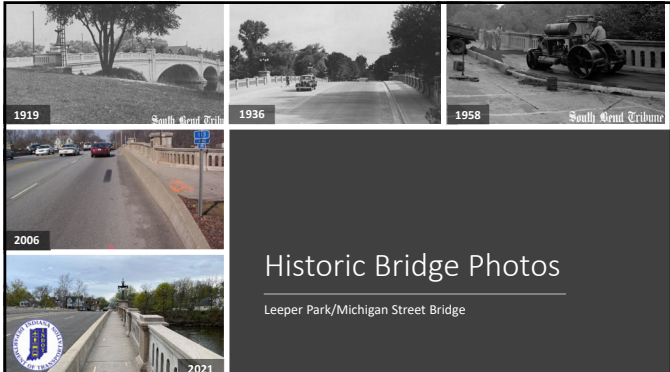
ERECTED
1914
COUNTY COMMISSIONERS
FRANK J. WARD DANIEL A. WHITE
FRED RANKERT
CLARENCE SEDGWICK, AUDITOR
DAN PYLE, ATTORNEY
CHAS. W. COLE, ENGINEER

2020.11.18 8:55

Leeper Park Michigan Street
Bridge

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1919 1936 1958

2006 2021

Historic Bridge Photos

Leeper Park/Michigan Street Bridge

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Rehabilitation Timeline



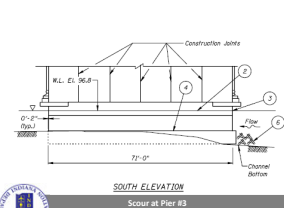
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Railing Cracking & Coping Deflection Signs of Structural Problems



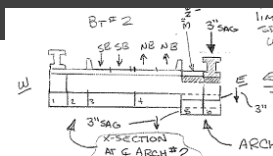
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1994 Underwater Inspection – Scour Discovered

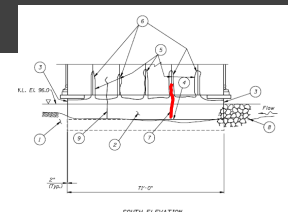


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Routine & Underwater Inspections Discover Arch & Pier Displacement



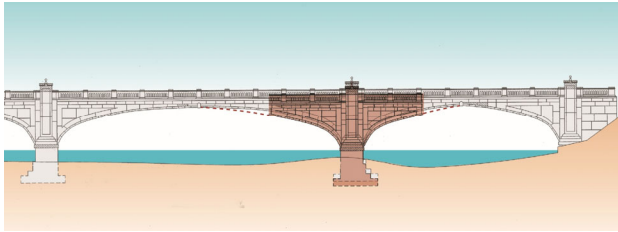
Arch Displaced & Large Cracks in Limestone
1998 Routine Inspection



Scour & Vertical Crack at Pier #3
2003 Underwater Inspection

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Arch & Pier Segment Displacement



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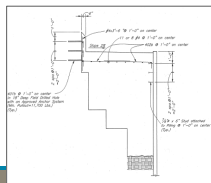
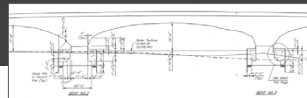
Arch Segment Displacement Today



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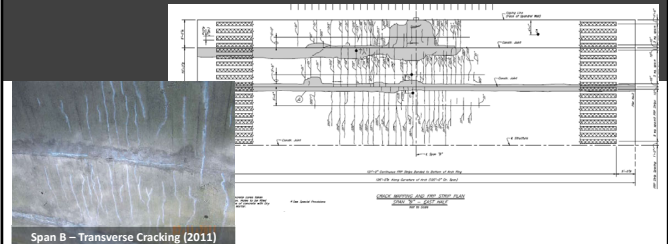
2006 Rehabilitation – Addition of Cofferdam



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2012 Rehabilitation – Transverse Cracking



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2012 Arch Repair & Strengthening with Fiber Reinforced Polymer (FRP)



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Limestone Condition – Railing Posts



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Limestone Condition – Spandrel Wall Fascia



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Purpose and Need

The primary need for the Leeper Park Michigan Street Bridge project is evidenced by the deteriorated condition and insufficient load capacity of the bridge. In addition, the sidewalk on the east side of the bridge does not meet current Americans with Disabilities Act (ADA) standards.

The purpose of the project is to provide a crossing of the St. Joseph River that has a condition rating of at least 7 out of 9, which is considered to be in "good" condition, as well as provide ADA-compliant pedestrian facilities. In addition, the purpose of the project is to improve the load rating factor. This project will extend the life of this crossing for a minimum of 25 years.

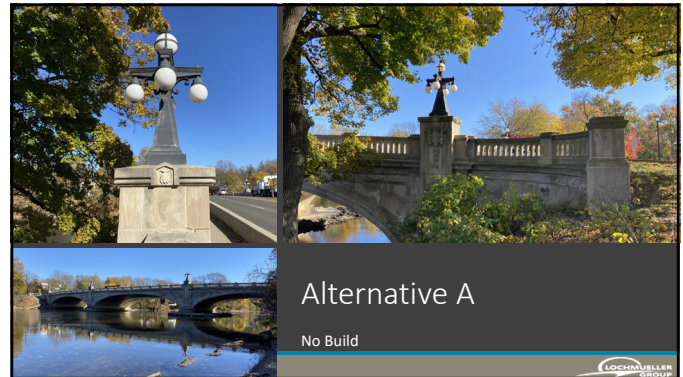


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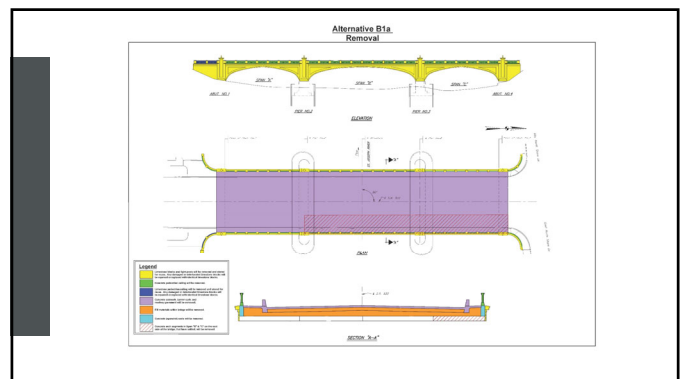
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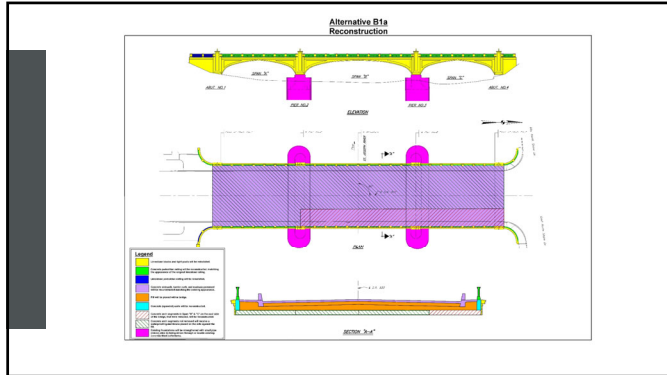
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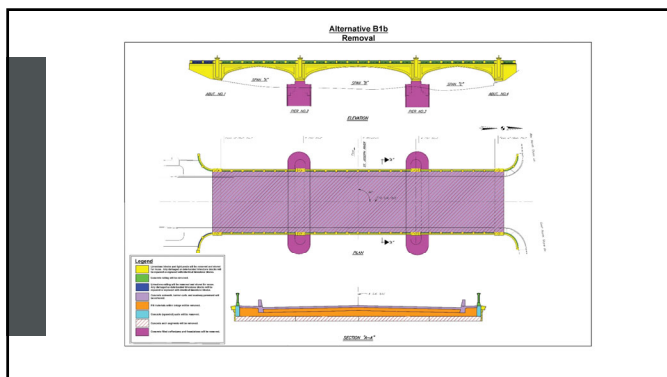
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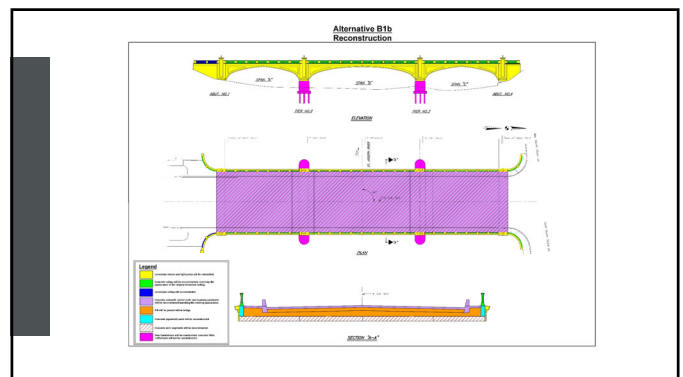
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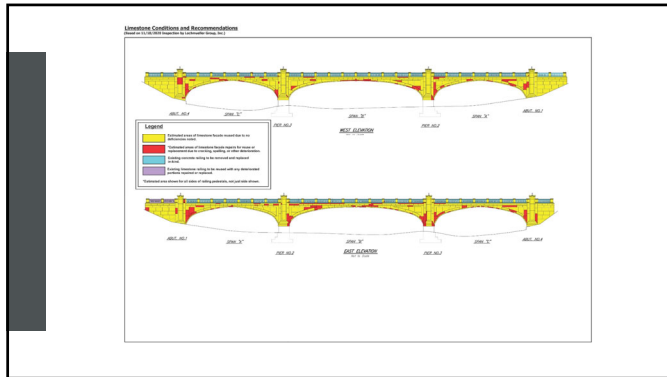
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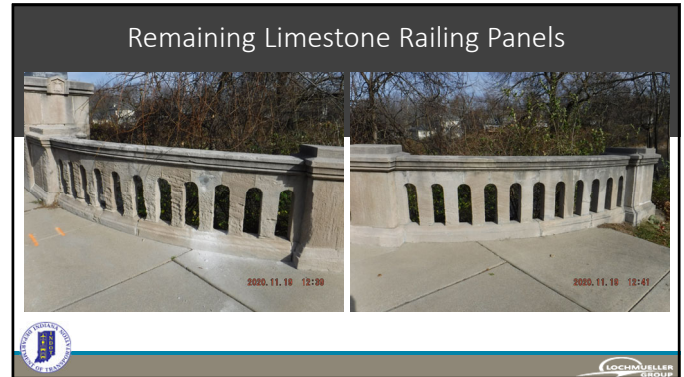
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Next Steps

- Meeting Summary distributed to Consulting Parties
- Consulting Party Comments
 - Submit to Hannah Blad, Lochmueller Group hblad@lochgroup.com
 - Submit by June 19, 2021
- Preparation of Historic Bridge Alternatives Analysis
- Historic Bridge Alternatives Analysis sent to Consulting Parties
 - 30-day review period

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Thank You!

Questions or Comments

Hannah Blad - 574.334.5487 or hblad@lochgroup.com

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