



**Department of  
Transportation**  
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Mike DeWine, *Governor*  
Jim Tressel, *Lt. Governor*  
Pamela Boratyn, *Director*

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# Waterville City Council

## June 1, 2026

- Official Minutes and Attendance Records: Stakeholder Meetings 1–5
- Estimate and correspondence from KoKosing
- A memorandum of understanding created by the district detailing concerns, processes, and disclosures
- Cursory review letters provided by:
  - Mike Brokaw, PE - former FHWA Bridge Inspection Engineer
  - Sean Meddles, PE – Administrator, Office of Structural Engineering, ODOT
  - Dr. Douglas Nims, PE – Professor Emeritus, University of Toledo
- Bridge Physical Condition Report – May 2026
- Submittals & Assessment Reports: Save the Bridge Association  
Historic Bridge Engineer

Official Minutes and Attendance  
Records: Stakeholder Meetings 1–5

## **Roche de Boeuf Committee Meeting**

Friday, April 17, 2026, 8:15 pm; ODOT District 2 Office

Attendees: Pat McColley, David Geckle, Joanie Cherry, Mayor Tim Pedro, City Administrator Jon Gochenour, Councilman Todd Borowski, John Pautz, Bill Vermes, Rex Childers

### **Meeting Minutes**

- Pat McColley and Tim Pedro thanked everyone for coming together
- Introductions around the table
- Tim Pedro discussed his meeting with the governor and his decision to provide 30 days for City of Waterville, STBA and ODOT D2 to investigate an alternate way forward. Tim stated the governor asked for regular updates from the City and Pat McColley stated the governor requested the same from ODOT D2.
- Pat discussed how ODOT is a de-centralized department and how D2 has completed multiple rehabilitation of historic bridges. This includes several bridge projects dating back to 1842 that carried the Miami-Erie Canal over streams that were repurposed to carry US 24 as well as maintaining the only suspension bridge on the state highway system.
- Pat McColley stated that ODOT continuing to own the Roche de Boeuf bridge does not fit the mission of the Department of providing safe and reliable transportation system and a new owner for the bridge (public entity) needs to be determined. All agreed with this statement.
- Rex Childers introduced himself and provided his background and roll with the STBA.
- Pat McColley explained the history of the Roche de Boeuf bridge, the Feasibility Study completed by ODOT and past efforts to find a new owner. Project funding was discussed and how on August 5, 2025, ODOT told City of Waterville (Tim and Jon) ODOT could transfer the \$4 million budgeted for demolition to the City of Waterville if they took ownership of the bridge.
- Rex Childers explained some of the issues with the City of Waterville taking the \$4M environmental commitment to take the structure "as-is". Primarily, no insurance carrier would accept the risk as is, based upon a "future" planned stabilization. This is one of the points he made directly to the governor in the meeting on April 14, 2026. However, he described a path forward - the State uses the funds to stabilize if engineering determines the piers and arches can support a future structure that City of Waterville can vote for, with confirmation of Bill Vermes and John Pautz. This is a handoff that accomplishes both the State of Ohio/ODOT need to transfer the bridge and allows Waterville to go forward with all responsibility.

- Bill Vermes introduced himself and provided his background. He discussed the design of the bridge and how it was constructed. He presented a bridge condition inspection report of the arches and spandrel walls he performed.
- Dave Geckle discussed the concrete deterioration shown in the provided inspection report and the ODOT Bridge Inspection manual guidance on deterioration. The presence of efflorescence is an indicator of concrete's deterioration.
- Bill Vermes discussed his proposal for rehabilitating the bridge into a functioning pedestrian bridge. He stated he is in contact with a couple of prefabricated bridge suppliers about the project.
- John Pautz presented cost estimates and scope of work for multiple options (Stabilizing the Bridge, Bridge over Bridge Concept and Bridge Rehabilitation). He worked with Bill Vermes on the scope of work and costs.
- Pat McColley started the conversation of a new owner. ODOT D2 stated in the first meeting with the City of Waterville and STBA that a new owner needs to be found to save the bridge. The City of Waterville is in the best position to take ownership of the bridge. Other entities, such as the Toledo Metroparks, are not interested in owning infrastructure such as the Roche de Boeuf Bridge. Time Pedro stated time is needed for the decision. Pat McColley stated there is enough time to make the decision and all the information needed to make the decision has been presented and additional information from Bill Vermes will be provided within a month.
- Pat McColley continued to discuss ODOT is moving forward with the contract to demo the bridge. Kokosing Construction Company has been awarded the demolition contract. The first day the contractor is allowed to start work in the Maumee River is June 1, 2026. An ownership decision by City of Waterville can happen up until that date. It was emphasized and agreed upon by City of Waterville, STBA and ODOT that the City of Waterville needs to act and cannot keep delaying the decision on taking ownership of the bridge.
- Pat McColley brought up the possibility of ODOT working with Kokosing Construction Company to alter the demolition contract to only demo the spandrel walls and remove the fill from the concrete arches. This would greatly reduce any current liability of the bridge. It was stated for it to happen; City of Waterville would need to take ownership of the bridge first. This option would help stabilize the bridge and take advantage of the causeway that needs to be built to perform the demolition work.
- After some discussion on liability if the City of Waterville takes the bridge prior to demolition commencing, Pat McColley and the ODOT D2 team explained a contractor has the liability and responsibility of any construction site once the contract is awarded. The ODOT team explained that this is the case in road and bridge projects and is part of the contract with the contractor. Pat McColley also explained that if it makes the City of Waterville feel more comfortable with taking ownership prior to the actual demolition commencing the state could lease back the site for \$1 until the end of the contract.

- Pat McColley stated funding could still be provided to the City of Waterville for taking ownership, however, it would be the original \$4 million minus any costs associated with cancelling a contract with the contractor or costs involved with performing partial demolition. ODOT would still have to work with Kokosing to determine if it is possible.
- Next meeting was set for Monday, April 27 at 8:30 am at ODOT District 2 Office
- Meeting Adjourned

## **Roche de Boeuf Committee Meeting**

Friday, April 27, 2026, 8:30 am; ODOT District 2 Office

Attendees: Pat McColley, David Geckle, Joanie Cherry, Kacey Young, Mayor Tim Pedro, City Administrator Jon Gochenour, Councilman Todd Borowski, John Pautz, Bill Vermes (via Teams), Rex Childers

### **Meeting Minutes**

- Pat McColley and Tim Pedro thanked everyone for coming together
- Rex Childers discussed how the group is working positively together and how to keep moving forward, handoff of information and responsibility needs to continue to happen.
- Tim Pedro stated although the Roche de Boeuf project is not going to be discussed in the Monday council meeting, he is keeping council updated.
- Bill Vermes recapped the information in the email he sent the group on Friday April 24, 2026. Please see a copy of the email at the end of the meeting minutes.
- John Pautz discussed the possibility of modifying the contractor's construction contract. He presented a revised estimate of approximately \$6.75 million based on 12 spans of Contech pedestrian structures.
- John Pautz inquired about delaying the construction contract for one year to allow time for engineering. By doing so, the causeway needed for demolition could be utilized to do the bridge over bridge option. During the delay, grants could be acquired to help offset costs. He also asked what ODOT's design-build options are.
- Pat McColley stated ODOT has an awarded contract and is moving forward. He explained from a funding perspective, no funding is available in one year. OPWC has a short turn around but does not fund pedestrian projects. ODOT/TMACOG Transportation Alternative Funds (TAP) are typically available 4 years from funding approval and usually have a maximum of \$2 million per project.
- Pat McColley explained if the City of Waterville takes ownership of the bridge, ODOT can provide assistance in funding applications. However, he also stated the purpose and need which is needed for funding applications will be a struggle to document since there are no pedestrian accommodations on the Wood County side and pedestrian accommodations are available just downstream at the existing Waterville bridge. Pat stated ODOT does not typically use design-build in their projects but instead use design-bid-build. He stated currently, the best option is getting the bridge to a state which the City of Waterville is comfortable taking ownership of.
- Rex Childers stated although there is no connection path on the Wood County side, the Buckeye Trail and towpath are connections which exist on the Lucas County side. He discussed the history of the Buckeye Trail and battle site and how the bridge is associated with stories.

- Pat McColley stated the battle site was there before the bridge was built and pedestrians and bikes can utilize the current bridge in Waterville.
- Pat McColley pointed out how the conversation about the bridge turns into a “we could do this” conversation. Eight years ago, when the project started the community and City were quiet. ODOT has always shared information with the public about the project from the beginning.
- Pat McColley brought up Todd Borowski’s question of what work would need to be done in 10-15 years to the bridge. Pat stated the highest risk items currently are the spandrel walls.
- Rex Childers pointed out the group is doing their due diligence for the City of Waterville by exploring all options in reference to the question about delaying the construction contract. He also said Waterville City Council needed a better understanding of liability than what has been presented to them in the past.
- Todd Borowski asked for more information about the causeway sequence and the footprint. A discussion about the causeway continued about the possible sequence of construction, environmental limitations and how the contractor controls means and methods during construction.
- Bill Vermes discussed wanting to access the top of the bridge and hand excavating to better determine the condition of the arches. Bill and Rex Childers agreed the south end access would be the best. Bill stated this activity would provide reassurance of the arch condition and more information the better. He said the load rating would take approximately 1.5 weeks and would be done using LFR code.
- John Pautz asked if any additional tools or tests could be done during the exploratory activities. Tim Pedro stated he had access to a windsor probe and penetrometer.
- Tim Pedro recapped a decision of the City of Waterville taking ownership of the bridge should be done no later than June 1. Information will be presented during city council meeting on Monday May 12.
- Pat McColley said an indication of ownership needed to take place before June 1. ODOT will talk to the construction contractor about different possibilities when the City of Waterville demonstrates forward momentum regarding possible ownership.
- Meeting Adjourned

## Cherry, Joanie

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**From:** Bill Vermes <bvermes@ymail.com>  
**Sent:** Friday, April 24, 2026 1:27 AM  
**To:** jpautz@gmail.com; rexchildersphd@gmail.com; Young, Kacey; Geckle, David; Cherry, Joanie; Doug Miller; Mccolley, Patrick; tim.g.pedro@gmail.com; jgoch@waterville.org  
**Subject:** Roiache de Boeuf - Engineering Group Update April 24

Everyone,

Here is a summary of my inquiries this week.

### **Arch Condition (Cause and Effect of Visible Efflorescence)**

I contacted Patrick Sparks (Sparks Engineering, San Antonio, Texas), and sent him representative photos of the efflorescence present on the arch intrados. Here is his reply.

*Bill,*

*It looks like the efflorescence aligns more or less with the longitudinal bars (6" o.c.) suggesting corrosion initiation. The efflorescence may very well be calcium hydroxide from the fill. I would want to test it to see what it is, and what is the chloride and sulfate content. Also, it would be essential to test for depth of carbonation. With a bridge that old, the carbonation may be pretty deep, if not all the way through. Every bridge I've looked at that is in that age category has been deeply carbonated. Once they get past 80 years, it is hard to save them. At 120 almost, I think it is unlikely that rehab could stop the progress of decay.*

*So, I'd recommend those basic tests before deciding.*

*Give me a call any time. I'm semi-retired now.*

*Patrick Sparks, P.E.  
Sparks Engineering, Inc.*

Let me add the following. First, TTL's petrographic analysis of the two cores states all observed carbonation depths to be less than  $\frac{3}{4}$  inches, which is not near the cover distance of the steel reinforcing. It is my understanding that carbonation penetration is linear over time, thus I do not think carbonation will be an issue for quite some time.

Regarding calcium hydroxide, the following is from Wikipedia:

*Calcium hydroxide (traditionally called slaked lime) is an inorganic compound with the chemical formula  $\text{Ca}(\text{OH})_2$ . It is a colorless crystal or white powder and is produced when quicklime (calcium oxide) is mixed with water. Annually, approximately 125 million tons of calcium*

*hydroxide are produced worldwide. Calcium hydroxide does not corrode iron and steel, owing to passivation of their surface.*

## **Maintaining Historic Bridge Status**

I contacted Mary Rody Ohio State Historic Preservation Office, inquiring if enough of the historic fabric would remain if all spandrel walls were removed from the bridge. Her reply is....

*Hi Bill!*

*Thanks for making the inquiry. At first blush, I am skeptical that the bridge would retain sufficient integrity. Due to conflicting schedules, I am going to confer with staff early next week and will report back.*

*M*

While this reply appears disappointing, I think there is room for discussion and mitigation. There are numerous examples of significant percentage of concrete element replaced in-kind on historic concrete arch bridges without the historic status being lost. Let's see where this discussion leads.

## **Finite Element Model**

I contacted a consultant that I know well and trust during my time in consulting and as the bridge engineer for Portage County if they could develop an FE model and analysis using Midas of the Roche de Boeuf. Considering the immediacy of the decision making, I asked for a cost estimate and list of deliverables by today with a delivery an FEA by Friday, May 8, and shared my AutoCAD file and technical information I have of the structure. Wednesday, I received a reply that they cannot meet this tight schedule due to their current workload and priorities.

When I return from Oklahoma, I will start hand calcs of the arch. It won't be as accurate as FEA, but I may be able to get it done.

Zimmerman Bridge: I read this short article twice, and it is clearly stated that no equipment was on the bridge when it failed. The article also conspicuously says little more than that. I wonder if an imbalance occurred with fill still present on the first arch standing from the removed arch. On Roche de Boeuf, there are clear unreinforced compression regions that should not be placed in reversal.

## **Survey & Inspection**

As I work on my Oklahoma project, I have been making opportunities to meet bridge engineers and historic preservation officials. Some of these meetings have become annual endeavors. Most discussions are related to Oklahoma bridges but some is of bridge work in general. Yesterday, a bridge engineer mentioned to me a new technology of stitching video together to develop a 3-D model of bridge. The new technology uses AI to develop this model and it can show defects as small as cracks in concrete and chips in paint on bridge steel. It was suggested that the cost to make this model could be less than a LIDAR survey and quicker. I'm awaiting for more information.

I don't know if the above survey can be implemented in time, but I feel it's worth considering.

Thank you,  
Bill Vermes

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## **Roche de Boeuf Committee Meeting**

Friday, May 8, 2026, 1:30pm; ODOT District 2 Office

Attendees: Pat McColley, David Geckle, Joanie Cherry, Kacey Young, Mayor Tim Pedro, City Administrator Jon Gochenour, John Pautz, Bill Vermes (via Teams), Rex Childers

### **Meeting Minutes**

- Tim Pedro thanked everyone for coming together
- Pat McColley summarized the meeting held with Craig Wing with Kokosing on Monday, May 4 at 11:00am. City of Waterville was in attendance and was able to ask questions. Kokosing expressed safety concerns and equipment access. They shared the simplicity of the demolition option, and a partial demolition required more precision. Kokosing discussed their sequence plan to start the causeway on the Lucas County side, leapfrog over to the Wood County side, then back again for removal. Pat McColley stated ODOT asked ODNR for approval to waste the causeway on the Wood County banks above the ordinary high-water mark. ODNR rejected the proposal because of the Maumee River's status of a scenic river.
- Kacey Young stated one of Kokosing's biggest concerns was if the bridge was to collapse when working on one of the last spans and then additional money would need to be spent to demolish the bridge. She stated Kokosing wants to do well and not disappoint. The contractor is working on a range of costs and should be submitting their estimate to ODOT by Friday May 15.
- Bill Vermes presented his Physical Condition and Preservation Alternatives Report. He mentioned he did not include estimated costs in the report, and it is intended more for guidance. The report is included as an Appendix to the meeting minutes.
- Bill Vermes discussed how he and other members of the STBA visited the bridge and was able to access the first three spans. They did hand excavation to view the top of the arch and TTL was on site to conduct Windsor Probe testing. Results can be found in the Alternatives Report. He mentioned more testing would be beneficial.
- John Pautz spoke about the bridge over bridge option shown in the Alternatives Report. The figure shown in the rehabilitation option will make this option look more like the original bridge. Also, the proposed concrete pathway allows for a second transverse tie between the spandrel walls. John acknowledged the challenges being awarded grant money and the group is looking to the community for support. A long-term goal would be for ODOT and Wood County to incorporate pedestrian paths into their future road projects.

- Rex Childers and Bill Vermes spoke on the Roche de Boeuf bridge and the views it offers. The bridge would be different than the modern bridge in Waterville with pedestrian paths and vehicular traffic. Bill Vermes stated the piers and concrete arches will stand and the arches are in better condition than he previously thought. Rex Childers said the point of Section 106 is if the bridge is a usable structure and has a purpose.
- Bill Vermes stated that a demolition test of the spandrel walls could be done on the first span on the south side of the bridge. This subject was discussed as a possibility in the meeting with Kokosing.
- Pat McColley talked about different options when Kokosing submits their cost range for partial demolition of the work. Based on the previous meeting with Kokosing, Pat McColley stated it should be assumed there will be no leftover funds of the \$4 million. Craig Wing from Kokosing wanted to know the budgeted amount for the partial demolition work. ODOT and Kokosing agreed if his estimates were coming out to be much higher than the budget, no more time or effort should be wasted. If the low end of Kokosing's estimate range is close to the budget, it may make sense for the test demolition on the south span, but only if it can help narrow the cost range. If the cost comes in well over the \$4 million, ODOT would not move forward with the partial demolition unless another entity covers the additional cost.
- Dave Geckle stated per Daniel Luten's book, there is approximately 9,000 cubic yards of concrete in the existing bridge which is approximately the amount in the causeway which will be built for demolition.
- Pat McColley stated three things that need to all align; Political, technical capability and financial.
- Pat McColley stated ODOT would not be paying for any additional cores. ODOT does not want to spend additional taxpayer money if the City of Waterville does not take ownership.
- John Pautz offered his and Bill Vermes expertise about the bridge to Kokosing to help with their partial demolition costs and plan.
- The group discussed possible methods for the partial demolition. Pat McColley ended the conversation by stating Kokosing is a very experienced contractor with many resources.
- Jon Gochenour asked who is responsible for ensuring the restrictions of the environmental permit are being met, more specifically the fill being removed properly instead of entering the Maumee River. ODOT responded that the construction inspector ensures the environmental commitments are being met per the plans and USACE permit. Also, the contractor is responsible for submitting a demolition plan which the inspector enforces.

- Dave Geckle asked about the status of the load rating Bill Vermes was preparing. Bill stated it is started but still needs time to complete.
- Pat McColley stated Kokosing mentioned starting work on July 1. He then explained that the City of Waterville needs to take ownership no later than June 15 so environmental documents can be revised and approved. ODOT does not want to waste money paying for a delay in start of construction from the contractor.
- Rex Childers brought up the benefit of extra testing again. Pat McColley responded it could be an owner directed change order to the contract, but only if the cost estimate aligns.
- Dave Geckle stated if Kokosing's cost estimate range is very high, it is still a possibility for the City of Waterville to take ownership of the bridge as is and the \$4 million offered previously minus any incurred costs for ODOT to end the contract with Kokosing.
- Pat McColley said that ODOT will offer John Pautz and Bill Vermes expertise to Kokosing on Monday May 11.
- Pat McColley asked if the City of Waterville has enough information to decide on how to proceed.
- Tim Pedro responded council is looking at whether it is feasible and if there is money left over to transfer to the City of Waterville.
- Rex Childers spoke about the narrative being presented to the public to gain community support.
- Pat McColley cautioned using the pedestrian access narrative when there are already safety gaps in pedestrian facilities in the community which serve a greater purpose. He gave an example of the lack of sidewalks leading to and at the Anthony Wayne School property.
- Rex Childers also mentioned the current narrative about the liability of the bridge collapsing and it has been proved it will not fall.
- ODOT responded that it is currently falling into the river.
- Rex Childers responded only the spandrel walls and fill are collapsing and not the arch or piers. The Alternative Report by Bill Vermes shows it is not in danger of collapsing.
- Jon Gochenour asked about additional money over the \$4 million dollars ODOT has mentioned being budgeted for overruns in the contract and if that money will be transferred to the City of Waterville.
- Pat McColley responded with the offer has always been \$4 million dollars and no more.

- Tim Pedro listed action items:
  - o Inform City of Waterville council.
  - o Wait for Kokosing's cost estimate for partial demolition.
  - o Possible additional future testing on the bridge.
  - o ODOT to offer Bill Vermes and John Pautz's expertise to Kokosing.
- Pat McColley brought up the potential issue with optics of the City of Waterville citizens for Council to vote on ownership of the bridge in one read.
- Pat McColley presented letters to the City of Waterville from Sean Meddles, State of Ohio Bridge Engineer and Mike Brokaw, former State of Ohio and FHWA Bridge Inspection Engineer. The letters are included as an Appendix to the meeting minutes. Also informed the group ODOT is seeking letters from other parties regarding a very high-level review of the feasibility study and the bridge.
- Tim Pedro scheduled the next meeting to be Friday, May 15 at 1:30pm at ODOT District 2 Office.
- Meeting Adjourned

## **Roche de Boeuf Committee Meeting**

Friday, May 15, 2026, 1:30pm; ODOT District 2 Office

Attendees: Pat McColley, David Geckle, Joanie Cherry, Kacey Young, Mayor Tim Pedro, City Administrator Jon Gochenour, John Pautz, Bill Vermes (via Teams), Rex Childers

### **Meeting Minutes**

- Pat McColley and Tim Pedro thanked everyone for coming together.
- Pat McColley summarized where the group was to date. Kokosing, ODOT and Waterville met on Monday 4, 2026. ODOT passed along Craig Wing's from Kokosing contact information to Bill Vermes and John Pautz for them to coordinate. As of today, when Kacey Young called Craig Wing, Bill Vermes had not reached out yet. Kokosing does not have an estimate currently, but hopes to have one prepared by next Wednesday, May 20, 2026.
- Bill Vermes stated he called Craig Wing before this meeting and they will be following up next week.
- Tim Pedro talked to City of Waterville Council. He told them Kokosing was preparing an estimate for the partial demolition of the bridge and explained the timeline of needing an ownership decision no later than June 15, 2026.
- Pat McColley updated the governor's office. Pat McColley sent them the AI image Kacey Young prepared, discussed the ownership/technical/cost items which need to align, the June 15<sup>th</sup> deadline, Kokosing wanting to start construction on July 1<sup>st</sup>, and summarized ongoing conversations with City of Waterville and the STBA.
- Rex Childers discussed a recent meeting with SHPO. They discussed the history and possibilities of the Roche de Boeuf bridge location including Fort Deposit and possible future engagement activities with the Native American groups and BGSU.
- Pat McColley stated the Native American Shawnee Tribe does not agree with leaving the bridge in place and will need to investigate further memorialization of tribal history is needed.
- Rex Childers said the bridge site has many opportunities and perspectives.
- Pat McColley asked what SHPO's opinion of the historic determination of the bridge if the partial demolition takes place.
- John Pautz said they discussed with SHPO and they stated they would reevaluate. Their concern was the loss of main spandrel wall elements. A variation of the original Luten design could affect historic determination. There was also a

discussion about not revising the NRCP and notifying of changes to the demolition project.

- Pat McColley stated any future grants would require coordination with SHPO and they would be notified of changes at that time.
- Rex Childers stated although not required, SHPO was happy to be part of ongoing discussions. Pat McColley stated Erica Schneider from ODOT Central Office remains in contact with them as well.
- Rex Childers presented a planning board which included information and pictures of the bridge. Rex showed pictures and talked about how minimal vertical reinforcing in the spandrel shows there is not much resistance to them being removed.
- Pat McColley pointed out in the drone videos taken by ODOT, there are areas where vertical reinforcing in the spandrel walls pulled out into the arches in some areas where the walls have already collapsed. This shows the vertical reinforcing does provide a level of resistance.
- Rex Childers spoke to a property owner who stated there was a recent collapse of a portion of a spandrel wall. Pat McColley added due to the pattern of spandrel wall collapse, an additional collapse could possibly happen.
- John Pautz added non-deformed bars do not bond to concrete as much as deformed bars which may make partial demolition easier.
- Pat McColley said it is good Bill Vermes and John Pautz are coordinating with Kokosing. ODOT does not want to dictate means and methods to the contractor.
- Rex Childers will be sharing the planning board with the group and Kokosing. Pat McColley stated ODOT has shared the drone video with Kokosing.
- Bill Vermes talked about pictures which show there are transverse ties which secure the spandrel walls together. This may be why minimal reinforcing is in the walls. From the photos, it appears there may be up to three transverse ties per wall. Also, in the spandrel wall coping, only one reinforcing wall is present. John Pautz added there are no reinforcing stirrups in the coping.
- Bill Vermes stated he is creating elevation and cross section details showing the reinforcing pattern and will share with Kokosing on Monday along with loading patterns.
- Pat McColley said the information will be useful to Kokosing and may help them prepare a more accurate cost estimate.
- Tim Pedro and Pat McColley discussed next steps which included receiving Kokosing's cost estimate for partial demolition next Wednesday, an assumption the arches are okay to leave, and the next City Council meeting is June 8<sup>th</sup>. Tim Pedro stated a special meeting can be set up if needed.

- Kacey Young stated Kokosing did not express strong interest in the test demolition on the last span on the Wood County side discussed last meeting.
- Tim Pedro set up the next meeting to be Tuesday May 26, 2026, at ODOT D2 at 1:30pm.
- Pat McColley offered to have ODOT attend the next City Council meeting to explain and answer any questions Council may have. Jon Gochenour added a special meeting would be helpful so Council could concentrate on what is being presented.
- Pat McColley cautioned putting any updates out to the public before receiving Kokosing's cost estimate. Pat McColley also added City Council can decide whether they want to discuss the acquisition of the bridge in executive session or in an open meeting. Pat is having ODOT hold the next City Council meeting on their calendars.
- Rex Childers stated the bridge is important to the community and although there have been different ideas in the past, the STBA wants to act now.
- Pat McColley asked if all members of the STBA understand the current discussions between the ODOT, City of Waterville and some members of the STBA. Rex Childers confirmed STBA knows the City of Waterville is the principle.
- Rex Childers shared the goal is to save the bridge now and improve later. The City of Waterville is the potential new owner of the bridge, not the Toledo Metro Parks. The STBA is aligned and wants to work with City of Waterville and ODOT. Any concerns the STBA have will be brought to the City of Waterville. The STBA would like to investigate fundraising for future improvements after the bridge is saved.
- Pat McColley stated it helps politically, City of Waterville Council and externally when all parties are aligned in a goal.
- Meeting Adjourned

## **Roche de Boeuf Committee Meeting**

Friday, May 26, 2026, 1:30pm; ODOT District 2 Office

Attendees: Pat McColley, David Geckle, Joanie Cherry, Kacey Young, Mayor Tim Pedro, City Administrator Jon Gochenour, Councilman Todd Borowski, John Pautz, Bill Vermes (via Teams), Rex Childers

### **Meeting Minutes**

- Pat McColley thanked everyone for coming together. Kokosing's partial demolition cost estimate of \$4,287,754.15. Pat McColley discussed the following:
  - o The revised demolition cost estimate is within 10% of ODOT's original allocation for the demolition project.
  - o ODOT is willing to move forward with the partial demolition assuming City of Waterville takes ownership of the bridge.
  - o Presented Right-of-Way plans and a draft Contract of Purchase. These documents are attachments to the meeting minutes.
  - o ODOT is willing to present information to the City of Waterville as an advisory.
- Tim Pedro asked for clarification of two items in Kokosing's estimate. The mention of a delay beyond July 6<sup>th</sup> could result in extra costs and the assumption material to be removed in more than two lifts could increase cost estimate.
- David Geckle explained July 6<sup>th</sup> is Kokosing's start date for the project and if they are delayed by ODOT, they can ask for extra costs for a compensable delay. He also explained Kokosing's assumption that the fill on top of the bridge can be removed in no more than two lifts to ensure loading on the concrete arches remain as consistent as possible. Kokosing has not yet hired a demolition engineer to stamp/sign a plan, so it is possible their assumption may need to change. If fill removal is required in more than two lifts, additional movement of the causeway will be needed.
- Bill Vermes addressed thrust forces and agreed with Kokosing's assumption. He said it may even be possible to remove all the fill in one lift.
- Pat McColley said ODOT does not dictate a contractor's means and methods.
- Kacey Young explained that the contractor is responsible for hiring the demolition engineer.
- Tim Pedro asked if the demolition engineer had been identified.

- Kacey Young explained Kokosing has not hired a demolition engineer yet because they want to make sure the partial demolition option is moving forward before accruing the costs for the demolition engineer which is approximated to be \$40,000.
- Rex Childers offered Bill Vermes and John Pautz to Kokosing to assist in demolition ideas.
- Pat McColley stated Kokosing was confident in their assumptions and not interested in test demolition on the southernmost span.
- Bill Vermes agreed the test demolition would not be necessary.
- Rex Childers clarified Kokosing is not responsible for damage to the arches during partial demolition per their assumptions. He also stated that no patching will be performed and the existing hole in the one arch span will remain per their email.
- Bill Vermes agreed with Kokosing's statements in their email.
- Todd Borowski asked what happens if one arch collapses during the project.
- Kacey Young handed out the draft MOU and her and Pat McColley started to go over it with the group. The MOU is an attachment to these meeting minutes.
- David Geckle passed out copies of letter from Dr. Douglas Nims, PhD, P.E. and a physical condition assessment from Jared Backs, P.E. and Ed Hayes, P.E. about the existing bridge. The documents are attached to the meeting minutes.
- Dave Geckle explained that the spandrel walls were scored with the concrete arches in the physical condition assessment due to the bridge type being a filled concrete arch. This is explained in the assessment and follows ODOT Bridge Inspection Standards.
- Todd Borowski asked about details of the demolition project.
- Dave Geckle explained the demolition sequence shared by Kokosing in a phone call with ODOT. The causeway would start from the Lucas County side and the first lift of fill over the arches would be removed. The causeway would then be moved to the Wood County side, and the remaining first lift of fill would be removed. The second lift of fill and spandrel walls then would be removed, the causeway flipped again to the Lucas County side and the same repeated. The causeway would then be removed.
- Todd Borowski asked if the portion of existing structure on the opposite side of River Road would be removed.
- Pat McColley explained this would be left in place to accommodate City of Waterville's awarded TMACOG grant to build a bridge over River Road to a lookout area.
- Rex Childers asked why the fill is assumed to be removed in two lifts and what would cause it to be potentially required to be removed in additional lifts.
- Dave Geckle and Bill Vermes discussed unbalanced loads on the arches.

- Dave Geckle stated if Kokosing's demolition engineer will not approve and stamp/sign spandrel wall removal and arches remaining in place, this would be an issue.
- Rex Childers asked what level of City of Waterville decision needs to be made for Kokosing to hire the demolition engineer.
- Pat McColley stated a final decision regarding ownership and execution of documents.
- Pat McColley explained the conditions which would lead to a full demolition outlined in the MOU is intended to help ODOT/Kokosing/City of Waterville make a timely decision and agree in case anything happens during the project.
- Jon Gochenour asked when City of Waterville would be required to start contributing costs to the project.
- Pat McColley explained City of Waterville would be responsible for costs outside the original scope of work of partial demolition such as has concrete patching, material testing, etc. ODOT will cover 100% of costs of partial demolition project if the scope of work is not changed. If a full demolition is triggered during partial demolition, ODOT will also be covering the full demolition cost
- Tim Pedro asked how potential additional material testing be handled.
- Pat McColley explained two options. Potentially Kokosing could hire a testing company to perform the testing and City of Waterville pay for it. Or City of Waterville could hire their own company and upon approval of Kokosing, the hired testing company could access the site to perform testing procedures.
- Dave Geckle clarified any additional costs Kokosing would need to spend to accommodate a testing company would be responsibility of the City of Waterville.
- Rex Childers asked Bill Vermes what type of additional testing would be needed. Bill Vermes said concrete cores would not be necessary and an assumption of concrete strength could be used.
- Todd Borowski asked what potential concrete patching looks like. Dave Geckle explained different methods and materials which have been used on past projects.
- Bill Vermes stated in the last span on the Lucas County side, the spandrel walls are one foot thicker than the rest of the spans making the arch width twelve feet instead of 14 feet.
- Dave Geckle clarified the concrete arches would not look like the AI image Kacey Young presented in previous meetings.
- Tim Pedro discussed the next City Council meeting on June 8<sup>th</sup>, but in the meantime, there will be discussions with council. A field visit will be scheduled as well. Future grant opportunities and ODOT working as an advisory to the City was discussed.

- Jon Gochenour asked for clarification if signing the MOU means intent to take ownership.
- Pat McColley discussed the role of the City of Waterville being a responsible party as part of the project. The City of Waterville needs to be serious about taking ownership of the bridge. ODOT currently holds all the liability regarding the project, including cost overruns within scope. He summarized how ODOT has incurred costs accommodating the City of Waterville so far. One example was paying the design consultant to revise demolition plans to save portions of the existing bridge to accommodate the City's TMACOG grant.
- Jon Gochenour stated he understood but was concerned about project cost overruns being the City's responsibility.
- Pat McColley gave many examples of instances where ODOT covers 100% of costs for local owner projects. He again stated ODOT is responsible for 100% of the project costs as long as the scope stays the same. ODOT is just asking City of Waterville to take ownership of the bridge which they have been asking to be saved for the past year and a half.
- Pat McColley suggested the draft MOU could be revised to address Jon Gochenour's concern about project cost overruns not being the City's responsibility.
- Pat McColley reminded the group ODOT has given the revised decision date of June 15<sup>th</sup> which is one month longer than the original 30 day extension.
- Tim Pedro suggested a meeting next week for ODOT to answer any questions City of Waterville Council may have about the project. He asked to hold the date of Monday June 1<sup>st</sup> for a special meeting. Tim Pedro stated the City of Waterville will need ODOT's assistance in the future if the bridge is saved.
- Pat McColley stated a current risk is ODOT will still be the owner in two years. He stated at this point, ODOT and the City of Waterville are the project partners, not other groups.
- Todd Borowski stated ODOT has gone above and beyond so far and thanked them.
- Meeting Adjourned.

# Estimate and correspondence from KoKosing

# State of Ohio - Department of Transportation Bid Results

Page: 5  
Date: 05/15/26  
Time: 7:11 AM

<u>Project Number</u>	<u>State Estimate</u>	<u>PID Number</u>	<u>Letting Date</u>	<u>Completion Date</u>	<u>Federal State</u>
<b>260183 AWARDED</b>	<b>\$850,000.00</b>	<b>118692</b>	<b>4/9/2026</b>	<b>7/15/2027</b>	<b>E250(512)</b>
Stark Sippo Valley Trail Bridge 8		BRIDGE REPLACEMENT (1 BRIDGE) <b>DBE Goal</b>			

<u>Contractor</u>	<u>Address</u>	<u>Bid Amount</u>	<u>%</u>
<b>MATT WINTERS EXCAVATION LLC</b>	3310 Kent Rd., Ste 6, Stow, OH 44224	\$744,413.00	-12.42
<b>AWARDED</b>			
STANLEY MILLER CONSTRUCTION COMPANY	2250 HOWENSTINE DR SE, EAST SPARTA, OH 44626	\$796,619.00	-6.28
J D WILLIAMSON CONSTRUCTION CO INC	441 GENEVA AVE, PO BOX 113, TALLMADGE, OH 44278	\$798,548.12	-6.05
BLACK HORSE BRIDGE CONSTRUCTION INC	5185 WOOSTER ROAD WEST, NORTON, OH 44203	\$864,336.00	+1.69
S E T INC	235 EAST WATER ST, LOWELLVILLE, OH 44436	\$1,282,373.50	+50.87

<u>Project Number</u>	<u>State Estimate</u>	<u>PID Number</u>	<u>Letting Date</u>	<u>Completion Date</u>	<u>Federal State</u>
<b>260184 AWARDED</b>	<b>\$781,000.00</b>	<b>122838</b>	<b>4/9/2026</b>	<b>11/20/2026</b>	<b>E260(027)</b>
Warren SR 123-16.79		MINOR RECONSTRUCTION <b>DBE Goal</b>			

<u>Contractor</u>	<u>Address</u>	<u>Bid Amount</u>	<u>%</u>
<b>BARRETT PAVING MATERIALS INC</b>	3751 COMMERCE DR, MIDDLETOWN, OH 45005	\$818,000.00	+4.74
<b>AWARDED</b>			
JOHN R JURGENSEN COMPANY	11641 MOSTELLER RD, CINCINNATI, OH 45241	\$846,720.33	+8.41
SUNESIS CONSTRUCTION CO	2610 CRESCENTVILLE RD, WEST CHESTER, OH 45069	\$943,479.67	+20.80

<u>Project Number</u>	<u>State Estimate</u>	<u>PID Number</u>	<u>Letting Date</u>	<u>Completion Date</u>	<u>Federal State</u>
<b>260185 AWARDED</b>	<b>\$860,000.00</b>	<b>123503</b>	<b>4/9/2026</b>	<b>11/1/2026</b>	<b>E260(172)</b>
Washington SR 26-03.75		INTERSECTION <b>DBE Goal</b>			

<u>Contractor</u>	<u>Address</u>	<u>Bid Amount</u>	<u>%</u>
<b>SHELLY &amp; SANDS INC</b>	1515 HARMON AVE, COLUMBUS, OH 43223	\$934,443.00	+8.66
<b>AWARDED</b>			
OHIO-WEST VIRGINIA EXCAVATING CO	56461 FERRY LANDING ROAD, SHADYSIDE, OH 43947	\$977,287.57	+13.64
ALAN STONE CO INC	5519 St. Rt. 339, Suite A, Vincent, OH 45784	\$1,057,552.40	+22.97

<u>Project Number</u>	<u>State Estimate</u>	<u>PID Number</u>	<u>Letting Date</u>	<u>Completion Date</u>	<u>Federal State</u>
<b>260186 AWARDED</b>	<b>\$3,525,000.00</b>	<b>107405</b>	<b>4/9/2026</b>	<b>10/1/2027</b>	<b>E240(629)</b>
Wood Roche De Boeuf Interurban		DEMOLITION <b>DBE Goal</b>			

<u>Contractor</u>	<u>Address</u>	<u>Bid Amount</u>	<u>%</u>
<b>KOKOSING CONSTRUCTION COMPANY INC</b>	6235 WESTERVILLE RD, WESTERVILLE, OH 43081	\$3,062,301.50	-13.13
<b>AWARDED</b>			
GEDDIS PAVING & EXCAVATING INC	1019 WAMBA AVE, TOLEDO, OH 43607	\$3,197,051.00	-9.30
L M SESSLER EXCAVATING & WRECKING INC	1257 ST RT 96 N, WATERLOO, NY 13165	\$5,667,788.00	+60.79

## Mccolley, Patrick

---

**From:** Craig Wing <caw2@kokosing.biz>  
**Sent:** Wednesday, May 20, 2026 4:57 PM  
**To:** Young, Kacey; Mccolley, Patrick; French, Brian  
**Cc:** tim.g.pedro@gmail.com  
**Subject:** Roche De Boeuf - Revised Demolition Proposal  
**Attachments:** Roche De Boeuf Rev Demolition.pdf

ODOT District 2 / Waterville,

Kokosing's revised cost to remove the infill material and remove the spandrel walls only from the Roche De Boeuf Bridge is \$4,287,754.15. We have attached a revised price proposal for this work, however only 1 unit price was changed from the original bid; Ref. #20 – Portions of Structure Removed, Over 20' Span.

The following conditions and assumptions apply to this revised proposal.

- Care will be taken during the demolition and removal processes to inflict as little damage possible to the components that are to remain, however Kokosing will not be liable to repair/replace any items damaged during removal.
- This revised pricing assumes that the required removal of the infill material will be accomplished in a maximum of two lifts. If the final approved demolition plan requires the material to be removed in more than 2 lifts, costs to cover additional movement of the causeway material will be required.
- Start date of July 6<sup>th</sup> was assumed in the preparation of this estimate. If start of work is delayed beyond July 6<sup>th</sup> for any reason, additional costs may be incurred and Kokosing will expect this delay to be considered an excusable/compensable delay.
- Once work has started, any changes to the project scope will be covered under C&MS 104.02.D, and any adjustments in contract prices will be handled accordingly.
- The condition of the structural components that are to remain will be "as is" upon completion of the demolition and removal operations. No additional effort has been included in this estimate to touch up or improve said components.

Please do not hesitate to contact me if you have any questions.

Thanks,



### CRAIG WING

SENIOR AREA MANAGER

6235 WESTERVILLE ROAD | WESTERVILLE OH 43081

C.419X.344.3769

E. [CAW2@KOKOSING.BIZ](mailto:CAW2@KOKOSING.BIZ)

[WWW.KOKOSING.BIZ](http://WWW.KOKOSING.BIZ)





**CRAIG WING**

*SENIOR AREA MANAGER*

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05/20/2026  
H26-018OH-CW  
\*\*\* Craig Wing

15:48  
ODOT 260186 ROCHE DE BOEUF REV DEMOLITIO

**BID TOTALS**

<u>Biditem</u>	<u>Description</u>	<u>Status - Rnd</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Bid Total</u>
100	CLEARING AND GRUBBING	F - New	1.000	LS	7,800.00	7,800.00
200	EXCAVATION	F - New	418.000	CY	8.00	3,344.00
300	EMBANKMENT	F - New	1,200.000	CY	54.00	64,800.00
400	FENCE, MISC.: TEMPORARY CONSTRUCTION FENCE	F - New	2,500.000	FT	3.75	9,375.00
500	SOIL ANALYSIS TEST	F - New	2.000	EACH	60.00	120.00
600	TOPSOIL	F - New	306.000	CY	70.00	21,420.00
700	SEEDING AND MULCHING	F - New	1,127.000	SY	3.00	3,381.00
800	REPAIR SEEDING AND MULCHING	F - New	2,229.000	SY	3.00	6,687.00
900	COMMERCIAL FERTILIZER	F - New	0.150	TON	850.00	127.50
1000	LIME	F - New	0.230	ACRE	35.00	8.05
1100	WATER	F - New	7.000	MGAL	1.00	7.00
1200	SLOPE EROSION PROTECTION	F - New	1,127.000	SY	1.80	2,028.60
1300	STORM WATER POLLUTION PREVENTION PLAN	F - New	1.000	LS	1,025.00	1,025.00
1400	STORM WATER POLLUTION PREVENTION INSPTNS	F - New	1.000	LS	7,000.00	7,000.00
1500	STORM WATER PLLTN PREVENT INSPTN SOFTWR	F - New	1.000	LS	9,000.00	9,000.00
1600	EROSION CONTROL	F - New	75,000.000	EACH	1.00	75,000.00
1700	PLANTING, MISC.: 1" CALIPER, 3-GALLON CONTAINER T	F - New	168.000	EACH	175.00	29,400.00
1800	PLANTING, MISC.: 1-GALLON CONTAINER SHRUB	F - New	500.000	EACH	62.00	31,000.00
1900	LANDSCAPE WATERING	F - New	7,869.000	GAL	1.00	7,869.00
2000	PORT OF STR REM, > 20', APP	U	1.000	LS	3,816,860.00	3,816,860.00
2100	COFFERDAMS AND EXCAVATION BRACING	F - New	1.000	LS	1.00	1.00
2200	CONTRACT PERFORMANCE BOND	F - New	1.000	LS	12,000.00	12,000.00
2300	CPM PROGRESS SCHEDULE	F - New	1.000	LS	100.00	100.00
2400	MAINTAINING TRAFFIC	F - New	1.000	LS	25,000.00	25,000.00
2500	CONSTRUCTION LAYOUT STAKES	F - New	1.000	LS	1.00	1.00
2600	MOBILIZATION	F - New	1.000	LS	154,400.00	154,400.00

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Bid Total      =====>      \$4,287,754.15

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MOU created by ODOT District 2  
detailing concerns, processes, and  
disclosures



MEMORANDUM OF UNDERSTANDING  
BETWEEN  
STATE OF OHIO, DEPARTMENT OF TRANSPORTATION  
AND  
CITY OF WATERVILLE

This Memorandum of Understanding (“MOU”) is made between the State of Ohio, Department of Transportation (“ODOT”), having an address of 1980 West Broad Street, Columbus, Ohio 43223; and the City of Waterville (“City”), having an address of 25 North Second Street, Waterville, OH.

General Awareness

- The condition of the arch barrels will not look exactly as the AI rendering depicts.
- The condition of the arch barrels will be rough and weathered.
- Hanging rebar will be cut as close to the arch barrels as possible. You will be able to see rebar after the projects is finalized.
- There will be no patching of concrete as part of the ODOT project.
- The City will be assuming all risk, liability, and ownership of the bridge. The risk and liability will fall on the contractor during the construction contract.
- Deadline to take ownership of the bridge is June 15, 2026.
- The City will receive no money or other form of compensation from ODOT as a condition of or after taking ownership of the bridge. Kokosing's estimate for the partial demolition is higher than the original budgeted \$4,000,000 for the project.
- Kokosing's estimate for the partial demolition project is \$4,287,754.15. Any extra costs associated with the partial demolition or potential full demolition project will be the responsibility of ODOT. The City will only be financially responsible for extra work requested by the City.
- After the conclusion of the construction project, all future costs associated with owning the bridge will be the full responsibility of the City.
- The USACE continues to have the right to direct removal of the bridge if pieces fall into the river or for other reasons determined by the USACE.

- All requests shall flow from the City to ODOT in writing; no other parties are to interfere.
- Upon the City taking ownership, the three parties involved shall be the City, ODOT, and Kokosing.

Long-term requirements for the City to consider include, but are not limited to:

- If the bridge over bridge concept or other project is moved forward, plans will need to be stamped by a licensed professional engineer.
- If Federal funding is used for any project associated with the arch bridge, the engineer of record must be bridge level 3 prequalified. It is the City's responsibility to ensure this prequalification is met.
- If in the future the bridge is used to accommodate pedestrians inspections shall be performed to ensure safety. It will be the City's responsibility to hire a company and fund the inspections.
- If the City moves forward with a project involving the bridge, it may be required to coordinate with multiple regulatory and permitting agencies.

Conditions during construction

- The partial demolition project is an ODOT project and the contract is held between ODOT and Kokosing.
- Only ODOT is permitted to dictate work to Kokosing.
- The City is not permitted to dictate work to Kokosing.
- Any additional work not currently included in the project will be coordinated and permitted by ODOT and Kokosing.
- Kokosing is under no obligation to approve any requests for additional work during the course of their contract with ODOT.
- Any request for additional work, testing (cores), or other actions by the City must be requested in writing to ODOT by the City Administrator. If approved, all funding associated with the additional work will be fully funded by the City.
- The City will be invited to the preconstruction meeting and all progress meetings for the project. Only City representatives are permitted to attend these meetings.
- Kokosing is the sole owner of the demolition debris from the project.

Questions to be resolved and disclosure of important materials

- No reports or other information provided to ODOT have been stamped or certified by a Professional Engineer.
- No reports or other information provided to ODOT have been approved or accepted.

- All meeting minutes and notes have been provided to the City and are available for distribution.
- ODOT has received the following documents and has shared them with the City
  - Letters
    - Sean Meddles, PE, Administrator, ODOT Office of Structural Engineering
    - Mike Brokaw, PE, Burgess and Niple
    - Dr. Douglas Nims, PhD, PE, University of Toledo Professor Emeritus
  - Physical Condition Report
    - Jared Backs, PE and Edmund Hayes, PE, ODOT Office of Structural Engineering

Conditions that lead to a full demolition of the bridge

- Partial or full collapse of an arch barrel or pier.
- Any cracking, visual or audible instability, superstructure or substructure instability or deformation.
- Concrete pieces falling from the arch barrels.
- Kokosing seeing an unsafe condition in the field and not feeling comfortable proceeding.
- By recommendation of ODOT and/or Kokosing, after discussion with the City.
- Kokosing's demolition engineer determines partial demolition requires extra work causing the estimate to exceed \$4,400,000
- Kokosing's demolition engineer determines partial demolition is not feasible.

The considerations listed above are not intended to constitute an exhaustive or all-inclusive list. They are presented merely as a baseline of identified factors.

The Parties acknowledge their mutual understanding and agreement to the risks, liabilities, and commitments detailed above.

City of Waterville

State of Ohio, Department of Transportation

\_\_\_\_\_  
Jon Gochenour, City Administrator

\_\_\_\_\_  
Patrick McColley, District 2 Deputy Director

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Cursory review letters provided by:

- Mike Brokaw, PE – Former FHWA  
bridge inspector engineer
- Sean Meddles, PE – Administrator,  
Office of Structural Engineering
- Dr. Douglas Nims, PE – Professor  
Emeritus, University of Toledo

## Geckle, David

---

**From:** Mike Brokaw <mike.brokaw.pe@gmail.com>  
**Sent:** Friday, May 1, 2026 7:22 AM  
**To:** Geckle, David  
**Subject:** Roche De Beouf Opinion

David Geckle, P.E.  
District 2 Design Engineer  
317 E. Poe Road  
Bowling Green, OH 43402

I reviewed the 2019 Feasibility Report, the photographs, and the drone footage you provided of the Roche De Beouf structure. I did not however perform a physical site visit or independent field verification. Based on the documentation provided, and my twenty-three years inspecting bridges and teaching bridge inspection classes in my previous role I am in agreement with the 2019 Feasibility Study (PID 107405) that the Roche De Beouf filled-arch structure is in a dangerous state of disrepair.

Based on the current progressive collapse of most spandrel walls and earthen fill material the site is potentially unsafe for anyone on, underneath or adjacent to the tipping walls or sloughing fill e.g., recreational river traffic, structural inspectors performing a more detailed inspection, technicians gathering concrete cores, maintenance personnel, and unauthorized trespassers. I concur with the Feasibility Study that the spandrel walls and earthen fill need safely removed to improve the immediate safety of the structure and surrounding site.

Beyond the immediate concerns, the arch-rings, specifically the area between the longitudinal spandrel wall construction joints visible on the upstream and downstream underside of each span, exhibit widespread moderate deterioration. Defects such as buildup of efflorescence and widespread saturation in most spans, and deep spalling in a few spans showing signs that the concrete may not be sound.

In its current state the Roche De Beouf structure is not sound; most notably the unstable spandrel walls and earthen-fill. A controlled demolition of the structure would mitigate the immediate risk of partial collapse.

Respectfully submitted,  
Mike Brokaw, P.E.

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**Department of  
Transportation**  
transportation.ohio.gov

Mike DeWine, *Governor*  
Jim Tressel, *Lt. Governor*  
Pamela Boratyn, *Director*

Pat McColley, P.E., S.I.  
District 2 Deputy Director  
317 E. Poe Road  
Bowling Green, OH 43402

Re: WOO-Roche de Boeuf Interurban Feasibility Study

The Office of Structural Engineering has reviewed the Feasibility Study for the Roche de Boeuf Interurban bridge near Waterville, Ohio funded under ODOT PID 107405. The study was prepared by DGL Consulting Engineers, LLC in June 2019. TTL Associates provided concrete test results on cores recovered from the existing structure.

The study investigated nine alternatives featuring variations derived from: No Build, Rehabilitation and Removal. The study concluded that the concrete structure was in a dangerous state of disrepair, recommending removal as ODOT's best alternative.

In the bridge's current condition, there is no question that there is insufficient structural integrity to carry any load including its own self-weight safely. There are several locations where spandrel walls have collapsed, allowing the retained earthen subgrade supporting the travel way to spill into the river. There are additional locations where the spandrel walls are leaning and in danger of collapse as well. Although no arch barrels as yet have collapsed, there is evidence of widespread efflorescence on the underside of the arches suggesting the concrete is in the final stages of sustaining structural integrity. Lastly, there is insufficient evidence to suggest that the foundations are capable of preventing a progressive collapse of the entire structure should a single arch span collapse.

The bridge is a hazard to individuals using the river, and it is an inviting temptation to adventurous individuals that could be in peril investigating the bridge. As such, our office fully supports the conclusions in the Feasibility Study to remove the bridge.

Respectfully,

Sean Meddles, P.E.  
Administrator, Office of Structural Engineering

May 9, 2026

Douglas Nims, Ph.D., P.E.  
2453 Hempstead Rd.  
Ottawa Hills, Ohio 43606  
419-297-7158  
[Douglas.Nims@utoledo.edu](mailto:Douglas.Nims@utoledo.edu)

David Geckle, P.E.  
District Design Engineer  
ODOT District 2  
317 East Poe Rd.  
Bowling Green, Ohio 43402  
D: 419.373.4377 C: 419.409.0380  
[David.Geckle@dot.ohio.gov](mailto:David.Geckle@dot.ohio.gov)

RE: Review of the WOO-Roche De Boeuf Interurban Feasibility Study

Mr. Geckle,

As we discussed, I have reviewed the subject study and the accompanying videos. Additionally, I have been to the site several times within the past year. Overall, the material provided accurately depicts the condition of the bridge, considers a wide range of options and examines the practical options. The objectives of the proposed project are safety, facility improvement, and historic preservation.

The report confirms, with appropriate petrographic analysis, what is visible: the super structure is in an advanced state of deterioration and none of it is suitable for reuse. Substructures get a brief, but reasonable consideration - they are the same concrete as the arches and will not be suitable for reuse. Thus, none of the existing structure is suitable for reuse.

In my opinion, the major item the report does not include are the costs of operating, maintaining and inspecting the rebuild options. These are difficult to estimate without knowing the type of structure, but will be a significant cost.

All of the practical options begin with complete removal of the existing structure. Prompt removal fulfills the safety objective. I find the report's recommendation to remove the crumbling bridge quickly and the rebuild, if and when funding is available, prudent.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas K. Nims". The signature is written in a cursive, flowing style.

Douglas K. Nims, Ph.D., P.E.

Professor Emeritus

University of Toledo, Department of Civil and Environmental Engineering

Bridge Physical Condition Report  
May 2026



## **Roche de Boeuf Bridge Physical Condition Report May 2026**

The Roche de Boeuf Bridge is an earthen filled concrete arch structure which originally carried an interurban trolley line for the Ohio Electric Company. The construction of the bridge was completed in January 1908. The structure was abandoned by the interurban railroad in 1937 but carried vehicular traffic in the 1940's after the downstream Waterville bridge partially collapsed after a vehicle impact. The original structure was 1,220 ft. in length and contained twelve concrete arch spans varying in length between 75 ft. and 90 ft., concrete spandrel walls confining the earthen fill and piers anchored into bedrock.

The Roche de Boeuf bridge is not assigned a Structure File Number (SFN) and there are no previous bridge inspection reports for the bridge as it has not carried public vehicular traffic since the 1940's (National Bridge Inspection Standards were adopted in 1971). The bridge does not have an active load rating.

The component condition inspection summary presented below was completed utilizing existing bridge photos and drone videos. Component condition ratings are assigned values with a range of 9-0, where 9 is a bridge in excellent condition and a 0 is a bridge that has failed. The ratings were derived based on the guidance in the following documents:

- 2025 ODOT Manual of Bridge Inspection and Inventory
- The American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Element Inspection
- Federal Highway Administration Specifications for the National Bridge Inventory (SNBI)

While there are some portions of the underside of the arch spans that may not be in poor or failed condition, the overall arch rating must consider all arch elements, including the edges and spandrel walls which are mostly in poor or failed condition. A closed spandrel arch bridge relies on the spandrel walls to support a usable bridge surface. Current bridge conditions show failures of the spandrel walls on both sides of the bridge affecting 10 of the 12 arch spans.

In summary, while there may be portions of the underside of the arch spans where the concrete visibly is not in poor condition, the overall summary ratings of the structure must take into account all areas of the arch system, **which result in a rating of “0 – Failed” for the overall Ohio General Appraisal rating due to the superstructure condition.**

The ODOT Office of Structural Engineering condition ratings and rating justifications are presented below.

### Controlling Component Condition Ratings

**B.C.01 - Deck Condition Rating (same as superstructure for this type of bridge) – 0 – Failed:**

This bridge does not have a structural deck, but to function properly, it would need a driving surface that is supported by the arches, fill material, and the arch spandrel walls. Given that the spandrel walls are failed in most locations, this bridge could not safely carry a usable surface for pedestrians or vehicles.

**B.C.02 - Superstructure Condition Rating – 0 – Failed:** There are 6 sections of the spandrel wall that have completely failed over the piers and an additional 3 spandrel locations that are in a state of failing. The only spans of the arch that visually seem stable enough to continue carrying their dead load are the 2 north end spans nearest S River Rd.

**B.C.03 – Substructure Condition Rating – 5 – Fair:** Pier condition from waterline to arch spring line are in fair condition throughout. There are isolated areas of severe spalling, but overall performance of the substructure does not seem to be affected.



North end span (looking downstream) showing sound spandrel wall



Span 11 (looking downstream) showing mostly sound spandrel walls. There is evidence that spandrel failure is starting to occur over the pier to the right.



Typical condition of failed arch spandrels over piers. There are outer sections of the arch that have failed with only the rebar hanging. This condition below would justify a General Appraisal rating of a "0" if it occurred at a singular location. This issue is occurring at 50% of the pier locations.

**Prepared by ODOT Office of Structural Engineering**

**Jared Backs, P.E.**

  
5/22/2026

**Edmund Hayes, P.E.**

  
5/22/2026

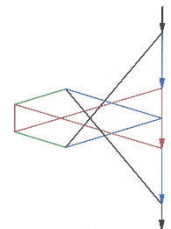
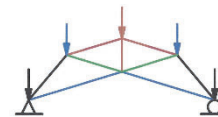
Submittals & Assessment Reports:  
Save the Bridge Association History  
Bridge Engineer  
Bill Vermes, PE

***ROCHE DE BOEUF BRIDGE COMMITTEE  
PHYSICAL CONDITION & PRESERVATION  
ALTERNATIVES REPORT***

---



**This Old Bridge, LLC  
Strongsville, Ohio**



**May 8, 2026**

## 1. Introduction

This report has been produced to provide new findings regarding the condition of the Roche de Boeuf and efforts to preserve it.

## 2. Roche de Boeuf Bridge Construction

The Roche de Boeuf Bridge is comprised of 12 reinforced concrete arches varying from 75 to 90 feet spans, face-to-face of piers. At the lower edge of the arch spans, the structure is 19'-2" wide with the arch barrels being 12'-0" wide. (The Span 12 arch barrel is 12'-0" wide, which may be an initial design consideration modified soon after construction began as the bridge was built from north (Span 12) to south (Span 1). The bridge was designed by Daniel Luten of the National Bridge Company in Indianapolis, Indiana.

Review of Luten's writings and concrete design patents shows that he professed the economy of reinforced concrete construction. At the time of the Roche de Boeuf construction, bridge designers of concrete arches were making an evolution of concrete design as they advanced from unreinforced and lightly reinforced structures to those embedded with greater quantities of steel reinforcement. Luten was at the forefront of this evolution and the most prolific advocate for concrete bridge construction.

Luten professed engineering economy. During the late 1800s and early 1900s, building materials were costly and labor was cheap. Luten strove to have concrete work to its safe limits and analyzed designs to only place steel reinforcement bars only at locations where tensile stresses in the concrete may occur. This does not mean to say he under-designed his concrete bridges, however his economy appears to have impacted the long-term performance of the Roche de Boeuf Bridge's spandrel walls.

(Sidenote: From 1915 to the early 1920s, Luten devised a laterally cantilevered barrel arch design ideal for Midwest rural areas. These designs reduced arch barrels widths from 20 feet down to a sleek 8 feet. Many of these bridges are still in use today from Indiana to Arizona.)

This information confirms that the bridge was constructed of 14-foot-wide concrete arches incorporating Daniel Luten's design of galloping reinforcing steel within tension regions of the arch (**Figure 1**).

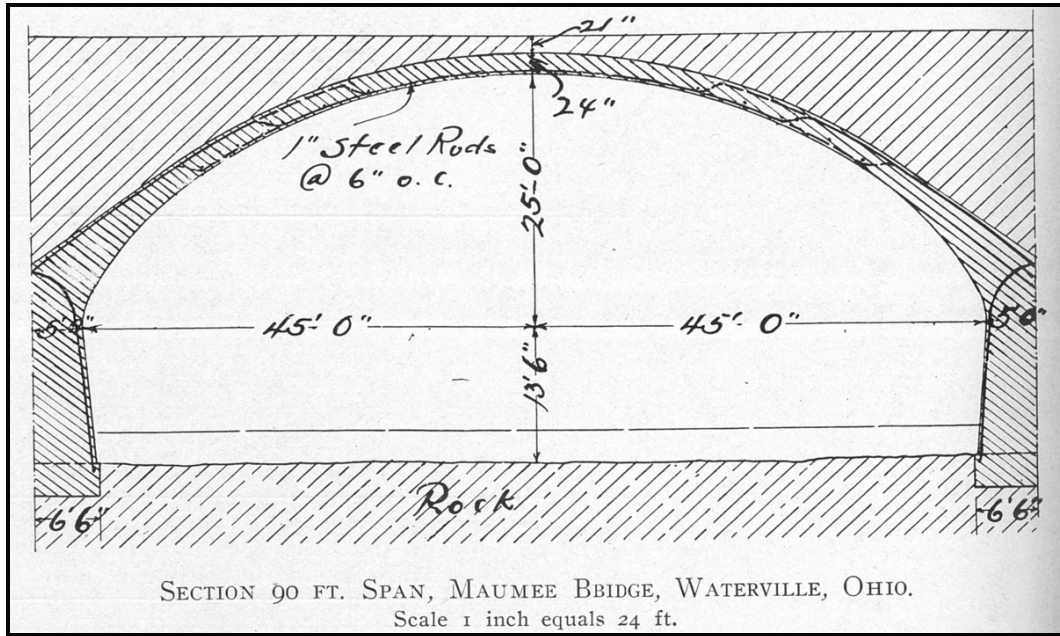


Figure 1 – Typical Arch Reinforcement Placement, Roche de Boeuf Bridge (Spans 6 & 7 Shown)

### 3. Inspection Schedule & Procedures

In preparation of this report, William Vermes, PE (This Old Bridge) performed site visits of the Roche de Boeuf Bridge, with each visit gaining new information and insights regarding the structure and means to stabilize and rehabilitate. As summary of the site visits is as follow:

- March 6, 2026: Initial site visit and discussion of repair options with John Pautz, civil engineer and retired construction cost estimator, and David Weber, Save the Bridge Association (STBA) STBA founding member. Performed initial field measurements to confirm Roche de Boeuf construction references.
- March 20: Observed construction details and deterioration patterns from alongside and below Spans 1, 2, and 12, and accessed the south face of Pier 2.
- April 12: Performed SNBI inspection and condition assessment of arch and pier components fully visible from ground level. Accessed Spans 1, 2 and 3 at grade level for initial observations of the structure topside.
- May 3: Excavated fill to top of the Span 3 arch full width, and inspected the arch intrados for condition and workmanship. Performed a level survey verifying typical arch ring thickness and determined the heights of the spandrel walls and fill. Assisted TTL technician with Windsor probe test locations from the South Abutment to Span 3, Span 12 and the North Abutment.



Photo 1 – Excavation of Span 3 Arch Intrados, May 3, 2026.

## 4. Condition Assessment

### *Spandrel Wall Discussion*

Access to the grade of Spans 2 and 3 provided observation within arm's reach of the remaining portions of spandrel wall at their failure planes. Among these observations are that the spandrel walls have considerably less steel reinforcement than contemporary design practice.

Significant observations are:

- From observation of the spandrel walls, they appear to have been cast to perform a dual role of a deep beam and retaining wall.
- The spandrel walls appear to have minimal attachment to the arch barrels in the form of lateral bottom mat barrel reinforcement continuing into the lower spandrel wall and bent upward in along the exterior wall surface.
- Vertical reinforcement, commonly placed for flexural resistance of lateral forces of the earth fill, is present only along the exterior spandrel wall surface with 3-inch cover. These bars are spaced from 24 to 48 inches center-to-center (**Photos 2 & 3**).
- With no vertical reinforcement along the interior wall surface, little flexural strength is provided.
- Within the edge of the remaining exposed fill, it appears that Luten may have provided lateral reinforced ties encased in concrete between paired spandrel walls. If this is indeed the intent of these laterals, they have become ineffective.
- Span 3: Near Pier 2, both spandrel walls lean outward approximately 12 inches. This suggests that the center of gravity of each wall has shifted outward up to 8 inches and may have produced a longitudinal crack 1.25 inches in the interior wall surface above the top of the arch barrel, the point of greatest bending.
- Span 3: At a fracture of the east spandrel wall, the remaining wall section has broken along horizontal planes. This indicates the failure planes often occur at cold joints placed in the spandrel walls due to the limitations of delivering enough ready-to-cast concrete.
- In the northern halves of the Span 12 spandrel walls, both walls exhibit longitudinal cracks above the arch barrel. The east spandrel wall has shifted outward approximately 1.5 inches (**Photo 3 & 4**).

- Span 3: Portions of the 3 ½-inch high concrete cap on top of the spandrel walls are missing in numerous locations. These caps have no steel reinforcement and thus have little connection to the spandrel wall except for friction between the concrete pours.

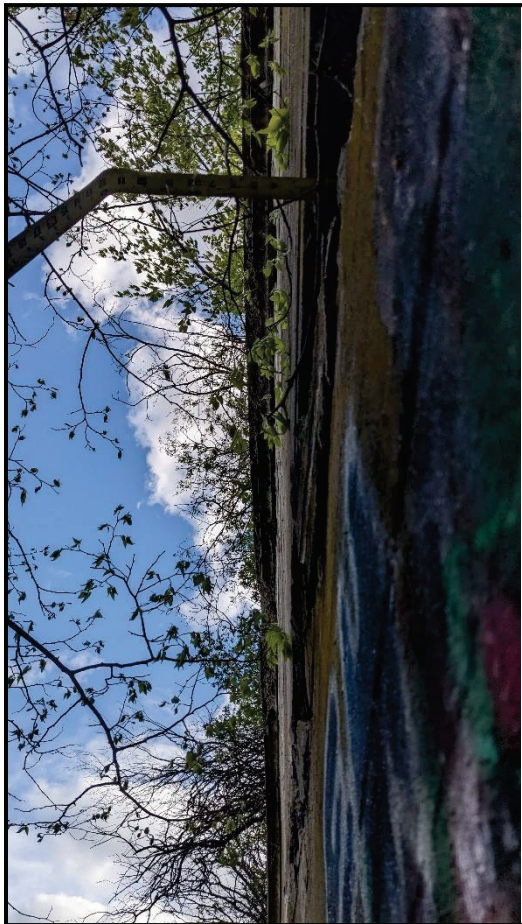
The above observations add concern for the viability to retain the existing spandrel walls. If any spandrel walls are retained in order to maintain the property's standing within the National Register of Historic Places, consultation with the Ohio State Historic Preservation Office is recommended.



**Photo 2 – Sparse Spandrel Wall Reinforcement, Span 2 East Spandrel Wall/**



**Photo 3 – Vertical & Horizontal Reinforcement  
Placed along Exterior Surface with 3-Inch  
Cover, Span 3.**



**Photo 4 – East Spandrel Wall Movement 1.5  
inches above Longitudinal Crack, Span  
12.**



**Photo 5 – Close-Up of East Spandrel Wall Movement 1.5 inches above Longitudinal Crack, Span 12.**

### *Arch Discussion*

The excavated extrados of the Span 3 arch is in good condition with no deficiencies (**Photos 6 & 7**). The surface observed was at the center of the arch where laborers placed the last portions of fresh concrete in 1907 and trowel-finished the surface to a smooth but uneven surface. The level survey performed confirmed that the arch is a minimum 24 inches thick per Daniel Lutens's writings. The arch intrados below this section exhibits longitudinal efflorescence which has been described as being non-corrosive calcium hydroxide (quick lime) leaching from the cement paste (**Photo 8**).

Throughout all 12 spans, observation of water staining and spalling of the arch intrados and bottom of spandrel walls suggest that rain water passing through the fill above generally follows the path of least resistance, which likely is the vertical arch barrel-spandrel wall construction joint and through the hidden longitudinal cracks in the spandrel wall above the arch barrels (**See Photo 8**). Thus, it is anticipated that when uncovered, the tops of all arch barrels will show little if any deterioration.



**Photo 6 – Arch Extrados Exposed, Span 3.**



**Photo 7 – Close-Up of Trowel-Finish and Good Condition of Arch Extrados Exposed, Span 3.**



**Photo 8 – Longitudinal Cracking with Calcium Hydroxide Efflorescence and Construction Joint Infiltration, Span 3.**

## **5. Material Strength**

No material strength specifications are known to exist for the Roche de Boeuf Bridge. For such situations, ODOT has produced a table of concrete and steel of unknown origin based on its time of construction. For the Roche de Boeuf Bridge, the following strengths are recommended:

Cast-in-place concrete: 2.0 ksi

Reinforcing Steel: 32 ksi

On Sunday, May 3, 2026, TTL Engineering Services performed 12 Windsor probe concrete compression tests at 12 select and diverse concrete elements. Measured compression strengths of all 12 test locations range between 2500 psi and 4000 psi. These strengths are comparable with the two compression strengths obtained January 2019 and the conservation design values applied for concrete of unknown specification.

In discussion with John Rust, President of TTL, he added that further concrete coring and compressive testing is recommended. If partial preservation of the bridge is

pursued, additional concrete compressive testing would complement the earlier test and satisfy Section 5.3 – Material Testing of AASHTO’s *Manual of Bridge Evaluation*. If no further testing is performed, ODOT’s recommended strength values will be used for potential rehabilitation design.

The locations of the Windsor Probe tests are included in **Table 1**. The TTL report is included in **Appendix A**.

<b>Test No.</b>	<b>Location</b>	<b>Bridge Component</b>	<b>Detailed Location</b>
1	Span 3	Arch Extrados (Top)	Near west edge.
2	Span 3	Arch Extrados	Center.
3	Span 3	Arch Extrados	Near east edge.
4	South Abutment	Southwest Wingwall	Middle of wall.
5	Span 1	Arch Intrados (Bottom)	Above arch base.
6	Span 1	Arch Intrados	Above Pier 1, near east edge.
7	Pier 1	Upstream Cut Water	Approx. 5 ft. above ground line.
8	Span 2	Arch Intrados	Above Pier 1, center.
9	North Abutment	West Retaining Wall	Near 2019 Core.
10	Span 12	West Spandrel Wall	Near 2019 Core.
11	Span 12	Intrados (Bottom)	Center, above honeycomb void.
12	Span 12	East Spandrel Wall	At N. Abutment.

**Table 1 – Windsor Probe Test Locations (TTL, May 3, 2026)**

## 6. National Register Eligibility & Loss of Historic Fabric

A recent conversation with the Ohio State Historic Preservation Office suggested that National Register status may be removed if the Roche de Boeuf Bridge's spandrel walls were removed. This opinion is not final. At this time, below is a sampling of other historic bridge rehabilitations as the impact presented regarding their modifications.

### *1904 Interurban Bridge, Como Park, St. Paul, Minneapolis*

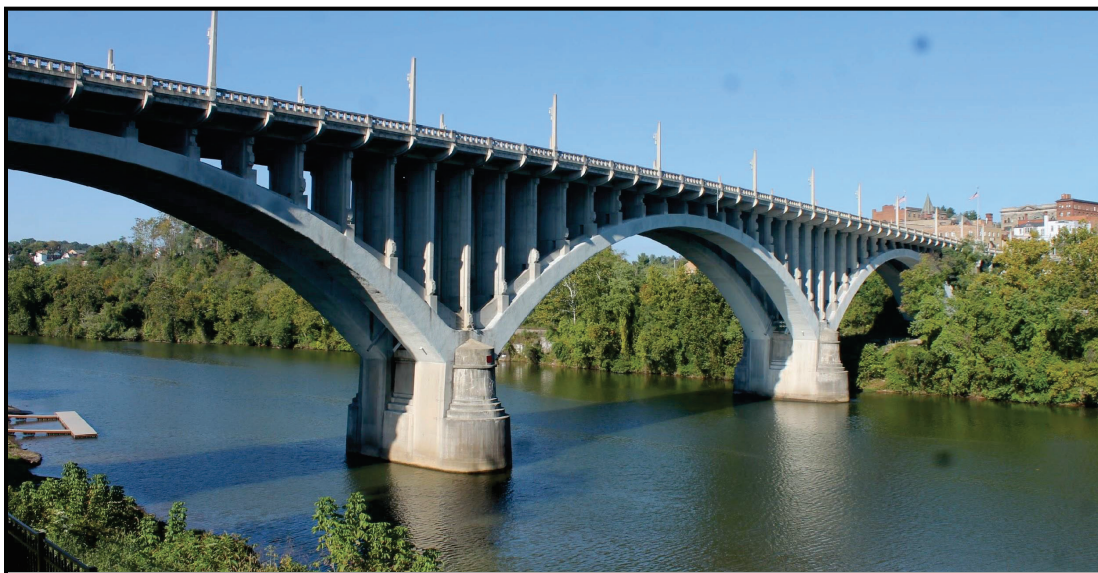
The Interurban Bridge is a three-span reinforced concrete bridge featuring a Milan arch main span (Photo 1). By the 2000s the bridge was in serious condition and closed to pedestrian traffic both on and below. Lacking rehabilitation funds, the initial preservation plan for the structure was to remove deteriorated concrete and to maintain the structure as an abandoned artifact. Eventually rehabilitation funds were secured, and the structure was fully rehabilitated by 2020.



**Photo 1 – Restored Interurban Bridge, Como Park, June 2024.**

### *Jefferson Street Bridge, Fairmont, West Virginia*

Opened in 1921, the Jefferson Street Bridge over the Monongahela River in Fairmont, West Virginia, has been a notable landmark in its region.<sup>1</sup> Following advanced deterioration, a major rehabilitation was performed to save the bridge in the late 1990s. This project included demolition of all concrete down to the tops of the arch ribs with near exact replication of these components (**Photo 9**). The arch ribs were “bulked up” with a concrete surface layer encapsulating a titanium mesh for cathodic protection.<sup>2</sup> This bridge has remained on the National Register of Historic Places.



**Photo 9 – Restored Jefferson Street Bridge, October 2016.**

Removal of the spandrel walls could be an adverse effect toward inclusion of this structure on the National Register. Potential delisting the Roche de Boeuf Bridge will have an impact on some grant opportunities and impact public opinion *however* it is the opinion of this report that the structure will at the very least remain local historic property which has less stringent requirements. Furthermore, most potential funding opportunities will remain to pursue Phase 2 construction discussed below.

The Ohio State Historic Preservation Office is open to consultation and it is **strongly encouraged** that they are engaged as a partner in this process. Additionally, ASCE’s Policy Statement 504 discussing the value of historic bridges is included in **Appendix B**.

<sup>1</sup> [https://en.wikipedia.org/wiki/Robert\\_H.\\_Mollohan%E2%80%93Jefferson\\_Street\\_Bridge](https://en.wikipedia.org/wiki/Robert_H._Mollohan%E2%80%93Jefferson_Street_Bridge)

<sup>2</sup> Performance of Ohio’s Concrete Arch Bridge Rehabilitation Practice, William Vermes, PE, International Concrete Repair Institute Fall Conference, November 10, 2016

## 7. Construction Considerations

### Phase 1: Partial Demolition & Arch and Substructure Preservation

#### *Spandrel wall removal*

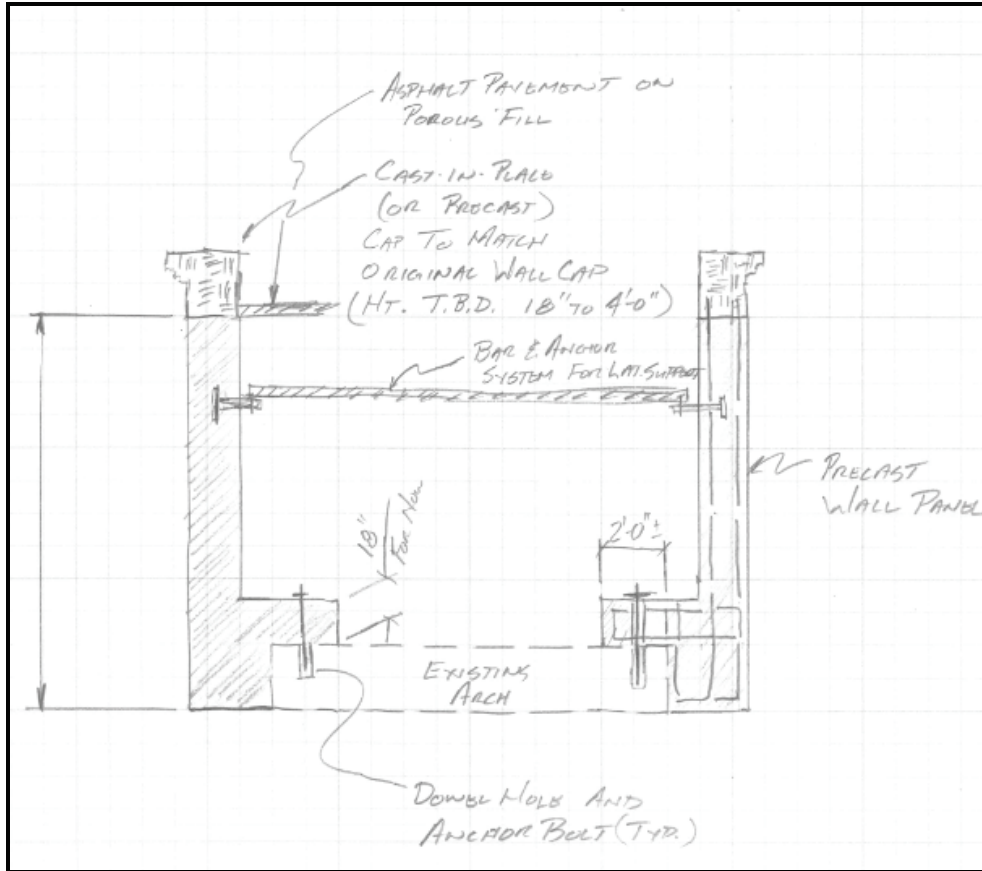
Partial demolition of the Roche de Boeuf Bridge will have its challenges, but it is possible. With the spandrel walls acted as separate beams and noting that minimal reinforcing attaches these walls to the arch barrels, partial demolition (only remove the leaning ends and maintain the stable middle sections), is likely not feasible. However, the minimal connection – not being integral with the barrels – will make full removal of the spandrel walls easier. While Kokosing will select their preferred means and methods to perform the select demolition of the spandrel walls, they may choose to use hydraulic chain saws for precise concrete cutting and hand grinders and/or torches to cut any transverse steel reinforcement.

### Phase 2: Rehabilitation & Trail Options

Partial demolition including removal of the spandrel walls and fill will provide a much simpler opportunity to restore the bridge in original vision. During the Week of May 4, John Pautz and Bill Vermes began discussions on potential economically efficient means that precast spandrel wall panels may be attached to the arch barrels. Precast panels can be cast in widths up to 8 feet wide, and designed to limit excessive weight to permit transportation and placement by crane.

**Figure 2** shows the initial concept proposed. This conceptual design has evolved since this figure was produced and will undergo further refinement.

(John Pautz will speak more about this in the meeting.)



**Figure 2 – Initial Sketch of Precast Spandrel Wall Panels Placed on Top of Existing Arch Barrels & Secured Laterally.**

**Appendix A**

***TTL Concrete Compressive  
Strength Testing Report***



**TTL Engineering Services, LLC**  
 1915 North 12th Street  
 Toledo, OH 43604  
 Phone: 419-241-4440

## Daily Field Report

**Client:**

This Old Bridge  
 c/o Save the Bridge Association  
 450 Cedar Lane  
 Waterville, OH 43566

**Project:**

435662026  
 Roche de Boeuf Bridge  
 Waterville  
 Waterville, OH

**Technician:** Hoyt, Michael

**On Site Date:** 05/03/2026

On this date, a representative from this testing laboratory was present at the above project for the following purpose(s):

- Windsor Probe Testing

The technician was on-site to conduct Windsor probe testing at various locations on both the north and south side of the Roche de Boeuf bridge. These locations included areas at spans one, two, three and twelve at abutments, wing walls, spandrels, retaining walls and cut walls. Windsor probe testing indicated strength of concrete to be between 2500 to 4000 psi. It is recommended that concrete cores be obtained for more precise concrete strength readings.

If you have any questions concerning this report, please feel free to contact us.

John Rust III  
 President  
 05/05/2026

**Appendix B**

***ASCE Policy Statement 504 –  
Rehabilitation of Historic Bridges***

# Policy statement 504 - Rehabilitation of historic bridges

<https://www.asce.org/advocacy/policy-statements/ps504---rehabilitation-of-historic-bridges>

Approved by the Transportation Policy Committee on December 5, 2023

Approved by the Public Policy and Practice Committee on January 24, 2024

Adopted by the Board of Direction on July 18, 2024

## Policy

The American Society of Civil Engineers (ASCE) supports the development and implementation of Historic Bridge Management Plans for each state. The goals of these Historic Bridge Management Plans are to develop historic bridge inventories, identify bridges where rehabilitation/preservation are appropriate and feasible, and develop specific preservation plans for those bridges. ASCE also supports the maintenance, repair, and rehabilitation of historic bridges, preferably, for continued vehicular use, or when that is not possible, for use by some active transportation means including pedestrians and bicyclists.

## Issue

Historic bridges are defined as bridges that are listed on, or eligible for listing on, the National Register of Historic Places. The structure is required to be at least 50 years old for National Register eligibility. Due to perceived functional obsolescence, absence of regular maintenance, and lack of any funding priority, historic bridges are a heritage at risk.

Bridges are a visible icon of the civil engineer's art. Historic bridges are important links to our past, serve as safe and vital transportation routes in the present, and can continue to serve as important elements of our transportation systems in the future. Some of these historic bridges represented innovative engineering practices at the time of their construction. Rehabilitation ensures these important engineering works remain in service resulting in significant cost savings compared to replacing the facilities altogether. By demonstrating interest in the rehabilitation and re-use of historic bridges, the civil engineering profession acknowledges the value of these structures as cultural resources and an awareness of the historic built environment.

## Rationale

Many historic bridges can still serve the nation's transportation needs, given appropriate repair, maintenance and flexibility in interpreting transportation standards as suggested by national transportation policy. Vehicular use is the best preservation because it keeps the bridge in traffic maintenance, inspection, and funding programs. When it is not possible for a historic bridge to continue in vehicular use on primary routes, consideration should be given to relocating these

bridges to routes receiving lighter volumes of traffic or changing their function to serve alternative means of transportation, such as hiking trails and bikeways. The United States is developing a comprehensive network of scenic highways and byways, including a connected network of hiking trails and bikeways that are accessible for all users. The maintenance and relocation of historic bridges to these systems sustains the scale, character and feeling of these historic, recreational, and scenic corridors.

With the work of citizens groups throughout the country, there is growing public interest in saving historic bridges. Civil engineers should lead and support these efforts. Historic bridges are engineered resources and require the necessary skills of engineers to balance the historical significance with the safety, function, and serviceability. Without the interest of engineers for preservation, there is little chance that the historic bridges of the United States can be preserved for future generations. Insufficient funding remains a pervasive problem for historic bridge preservation projects. Until historic bridge preservation becomes part of everyday transportation policy, receiving the support of transportation officials at all levels, and the continued support of citizen groups, historic bridges remain at risk.

ASCE Policy Statement 504  
First Approved in 2003

Other related policies:  
[PS 208 - Bridge safety](#)

## Mccolley, Patrick

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**From:** Bill Vermes <bvermes@ymail.com>  
**Sent:** Friday, April 24, 2026 1:27 AM  
**To:** jpautz@gmail.com; rexchildersphd@gmail.com; Young, Kacey; Geckle, David; Cherry, Joanie; Doug Miller; Mccolley, Patrick; tim.g.pedro@gmail.com; jgoch@waterville.org  
**Subject:** Roiache de Boeuf - Engineering Group Update April 24

Everyone,

Here is a summary of my inquiries this week.

### **Arch Condition (Cause and Effect of Visible Efflorescence)**

I contacted Patrick Sparks (Sparks Engineering, San Antonio, Texas), and sent him representative photos of the efflorescence present on the arch intrados. Here is his reply.

*Bill,*

*It looks like the efflorescence aligns more or less with the longitudinal bars (6" o.c.) suggesting corrosion initiation. The efflorescence may very well be calcium hydroxide from the fill. I would want to test it to see what it is, and what is the chloride and sulfate content. Also, it would be essential to test for depth of carbonation. With a bridge that old, the carbonation may be pretty deep, if not all the way through. Every bridge I've looked at that is in that age category has been deeply carbonated. Once they get past 80 years, it is hard to save them. At 120 almost, I think it is unlikely that rehab could stop the progress of decay.*

*So, I'd recommend those basic tests before deciding.*

*Give me a call any time. I'm semi-retired now.*

*Patrick Sparks, P.E.  
Sparks Engineering, Inc.*

Let me add the following. First, TTL's petrographic analysis of the two cores states all observed carbonation depths to be less than  $\frac{3}{4}$  inches, which is not near the cover distance of the steel reinforcing. It is my understanding that carbonation penetration is linear over time, thus I do not think carbonation will be an issue for quite some time.

Regarding calcium hydroxide, the following is from Wikipedia:

*Calcium hydroxide (traditionally called slaked lime) is an inorganic compound with the chemical formula  $\text{Ca}(\text{OH})_2$ . It is a colorless crystal or white powder and is produced when quicklime (calcium oxide) is mixed with water. Annually, approximately 125 million tons of calcium*

*hydroxide are produced worldwide. Calcium hydroxide does not corrode iron and steel, owing to passivation of their surface.*

## **Maintaining Historic Bridge Status**

I contacted Mary Rody Ohio State Historic Preservation Office, inquiring if enough of the historic fabric would remain if all spandrel walls were removed from the bridge. Her reply is....

*Hi Bill!*

*Thanks for making the inquiry. At first blush, I am skeptical that the bridge would retain sufficient integrity. Due to conflicting schedules, I am going to confer with staff early next week and will report back.*

*M*

While this reply appears disappointing, I think there is room for discussion and mitigation. There are numerous examples of significant percentage of concrete element replaced in-kind on historic concrete arch bridges without the historic status being lost. Let's see where this discussion leads.

## **Finite Element Model**

I contacted a consultant that I know well and trust during my time in consulting and as the bridge engineer for Portage County if they could develop an FE model and analysis using Midas of the Roche de Boeuf. Considering the immediacy of the decision making, I asked for a cost estimate and list of deliverables by today with a delivery an FEA by Friday, May 8, and shared my AutoCAD file and technical information I have of the structure. Wednesday, I received a reply that they cannot meet this tight schedule due to their current workload and priorities.

When I return from Oklahoma, I will start hand calcs of the arch. It won't be as accurate as FEA, but I may be able to get it done.

Zimmerman Bridge: I read this short article twice, and it is clearly stated that no equipment was on the bridge when it failed. The article also conspicuously says little more than that. I wonder if an imbalance occurred with fill still present on the first arch standing from the removed arch. On Roche de Boeuf, there are clear unreinforced compression regions that should not be placed in reversal.

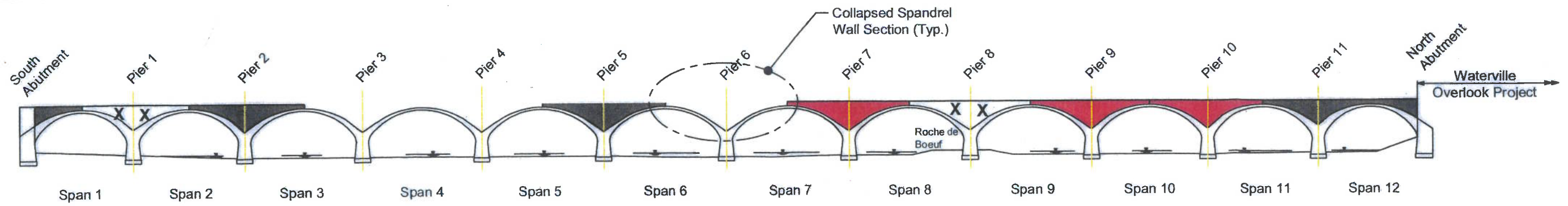
## **Survey & Inspection**

As I work on my Oklahoma project, I have been making opportunities to meet bridge engineers and historic preservation officials. Some of these meetings have become annual endeavors. Most discussions are related to Oklahoma bridges but some is of bridge work in general. Yesterday, a bridge engineer mentioned to me a new technology of stitching video together to develop a 3-D model of bridge. The new technology uses AI to develop this model and it can show defects as small as cracks in concrete and chips in paint on bridge steel. It was suggested that the cost to make this model could be less than a LIDAR survey and quicker. I'm awaiting for more information.

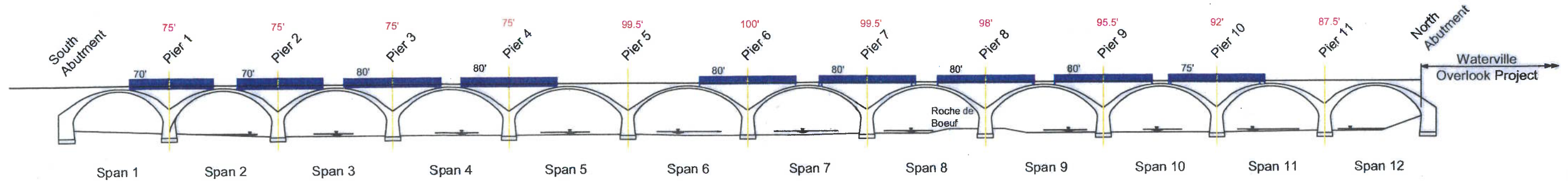
I don't know if the above survey can be implemented in time, but I feel it's worth considering.

Thank you,  
Bill Vermes

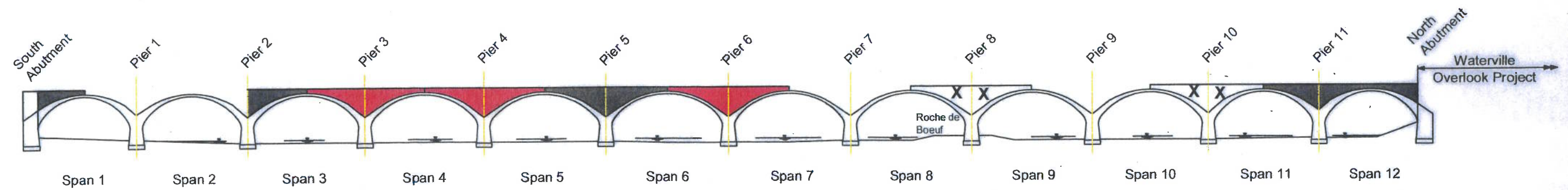
**CAUTION:** This is an external email and may not be safe. If the email looks suspicious, please do not click links or open attachments and forward the email to [csc@ohio.gov](mailto:csc@ohio.gov) or click the Phish Alert Button if available.



**West Spandrel Wall Stabilization Schematic**  
(Looking Upstream)







**Pedestrian Bridge Span Elevation**  
(Looking Upstream)



**East Spandrel Wall Stabilization Schematic**  
(Looking Upstream)

**Legend**

-  Single Spandrel Wall Anchored
-  Existing Spandrel Wall Panels Secured via Self-Anchoring DYWIDAG Bars.
-  Unstable Spandrel Wall Half Panels to be Removed
-  Proposed Prefabricated Pedestrian Pony Truss

**Roche de Boeuf Stabilization & Adaptive Reuse Concept**  
(Looking Upstream)

**This Old Bridge, LLC**  
April 9, 2026