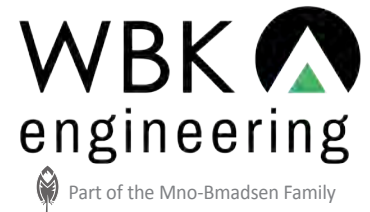


December 9, 2016



NOMINATION FOR:
Public Works Project of the Year Award
Category: Transportation
Division: Less Than \$5 Million

FRANKLINVILLE ROAD OVER FRANKLINVILLE CREEK BRIDGE REPLACEMENT

2017 APWA PROFESSIONAL AWARDS



SUBMITTED ON BEHALF OF:
McHenry County Division of Transportation
16111 Nelson Road
Woodstock, Illinois 60098





APWA Awards

Franklinville Road Over Franklinville Creek Bridge Replacement

Category: **Transportation**

Division: **Less than \$5 million**

Project Highlights

The Franklinville Road Bridge replacement over Franklinville Creek is located in unincorporated McHenry County and, at first glance, may appear to be a simple bridge replacement. However, through diligent planning, public involvement, project staging and environmental considerations, WBK Engineering worked with McHenry County Division of Transportation (DOT) to develop a progressive solution that exceeded the standard of care and enhanced local habitat.

- Working with IDNR/OWR Permitting Agency to relocate the existing channel to its natural alignment
- Hydraulic modeling eliminated the “choke” point of the existing bridge and lowered the flood elevations
- Coordinated with important stakeholders early and often, leading to a design that minimizes impacts and preserves the environmental integrity of corridor
- It was determined early in planning that the roadway profile could not be raised without dramatically impacting surrounding properties. WBK selected the bridge type, opening, and location that maintained the existing profile
- WBK coordinated with McHenry County Conservation District to preserve existing land use
- Two Year construction staging to establish channel in advance of relocating it
- Construction staging of bridge allowed roadway to be open during winter between Years 1 and 2 of construction
- Five year maintenance and monitoring program to establish wetland/native vegetation along channel corridor
- ROW negotiations were completed locally to expedite engineering and project delivery

01

Completed on Schedule and in a Safe Manner Due to Responsible Construction Management Practices

The Franklinville Road Bridge replacement was staged over two construction seasons in order to accommodate the relocation of Franklinville Creek, including an interim completion date to open the road during winter conditions. Unfortunately, there was a delay in the award of the construction contract which put Sjostrom and Sons, Inc. (Sjostrom), the contractor, in a bind to meet the interim completion date for winter shut down. However, even with a delay at the beginning of the contract Sjostrom was able to open the roadway to traffic on June 30, 2016, a full month in advance of the July 29th contract date.

The McHenry County Division of Transportation (MCDOT) was responsible for construction oversight. They worked closely with Sjostrom to maintain safe construction practices while pushing to meet the overall completion date. Sjostrom emphasized the need for coordination during construction which allowed them to work safely and efficiently. Because of their tried and true safety approach, Sjostrom had zero (0) injuries or manhours lost due to injury during construction.

Scheduled for two construction seasons, the roadway was open during winter shutdown, which was a challenge given the new and existing bridges were both in operation. WBK included a temporary guardrail transition detail that helped meet safety standards during the winter months. In order to avoid any confusion, the roadway detour was completely removed during winter shut down and replaced the following spring. Keeping the roadway open during winter and minimizing the total closure time helped to reduce the impact on local commuters.

On site, Sjostrom operated within a restricted corridor and was responsible for mass grading within environmentally sensitive areas and a large floodplain. An adherence to the extensive erosion control best management practices was maintained throughout the project. The contractor implemented their own measures including placing wooden planks beneath excavation equipment to minimize the amount of sediment disturbance and tracking onto local roads. Following construction, MCDOT implemented a contract with WBK to complete five years of maintenance and monitoring of the site to ensure the establishment of the wetland plantings, reflecting their commitment to sustainability.



The Contractor placed a premium on maintaining erosion control practices while operating within a tight corridor.

02

Environmental Considerations

While the primary scope of this project was to replace the failing bridge structure, protecting the natural environment was always a top priority for MCDOT. The surrounding vegetation is part of a high quality environmental corridor that includes ADID wetlands and extensive vegetation. Over time, Franklinville Creek had experienced an arrival of invasive species and woody vegetation at specific locations, and the northwest bank had begun to erode, impacting local property owners. The McHenry County DOT emphasized to WBK during Phase I planning that the preferred design alternative would complement the surrounding corridor, preserve and enhance the environmental integrity, while also meeting stakeholder needs.

Review of historical data indicated that the channel crossing at Franklinville Road had migrated significantly to the north. This resulted in increased erosion near the local residential property and a reduction in the functionality of the lot. WBK staff evaluated potential bridge and roadway design alternatives that considered replacing the existing bridge in place but, through a comprehensive alternative analysis, it became apparent early in the planning process that realigning the channel to its natural location would have several environmental benefits. These included: eliminating bridge work and mass grading in the waterway, allowing for a staged approach to establishing vegetation in the new channel, stabilizing the creek section through the use of a river rock liner, all while minimizing the risk of sediment entering the existing channel.

In the Franklinville Creek corridor, approximately 330 feet of new stream channel was created. The waters of the US creation consists of a higher quality and naturalized stream bed and banks with habitat for aquatic plant and animal species. There were 0.20 acres of emergent floodplain planting in areas of existing wetland or existing waters of the US. The new floodplain area creates natural wetlands and aquatic habitat for the stream channel. A new channel bottom lined with 15 inches of natural rounded cobble stone was implemented with bank run sand and gravel substrate for stabilization and habitat development. Natural cobble replaced the roadway standard riprap at the bridge abutments, continuing the emphasis on implementing natural materials throughout the project. The entire length of the



Before - Existing channel corridor with invasive species and trees.

channel was planted with native emergent plug species that were planted into the rock to create habitat features along the stream profile.

To the north of the project a new floodplain was created. Areas of the existing channel were restored into wetland and planted with native emergent floodplain plugs. The old channel was maintained as floodplain wetland and acts as buffer for the new channel. Existing wetland enhancement areas adjacent to the channel were seeded with a native floodplain mix, while areas of existing wetlands not impacted during construction were enhanced with floodplain seeding. The existing wetland and waters buffers were maintained as agriculture, woodland, and mowed turf grass. Regrading the channel corridor helped eliminate invasive species and trees that had in over the years, restoring the high quality wetlands. In addition, the McHenry County DOT has implemented a five (5) year maintenance and monitoring program to properly establish the wetland corridor.

Additional Best Management Practices were utilized, including bioswales in the ditches and rock check dams to filter roadway runoff before entering the creek. Locations susceptible to erosion were reinforced using stabilization fabric and additional stone treatments to help stabilize the channel. McHenry County staff provided oversight during construction and enforced the erosion control plan to make sure the additional temporary measures were being followed closely. Sediment traps, temporary rock check dams, and sump pits were important erosion control features implemented during construction. Additional planning and oversight helped minimize the potential for sediment entering the creek with a significant amount of work occurring just beyond the existing channel banks.

WBK coordinated with multiple environmental agencies (IDNR-OWR, US Army Corps, McHenry-Lake SWCD) throughout the duration of the project which also included the McHenry County Conservation District, who owns the parcel along the east side of the corridor. Early feedback from these agencies was invaluable and indicated that relocating the channel was a feasible option. McHenry County DOT went the extra mile when it came to mitigating impacts as they purchased wetland credits for the grading impacts and implemented the five year maintenance and monitoring program to establish the newly planted wetland vegetation.

The result, a year removed from the interim completion of stage 1 the new channel and corresponding vegetation is thriving and ahead of the establishment schedule. This corridor is a perfect example of the positive environmental impact that is possible when the client, designer, and permitting agencies work in tandem.



After - One year after planting, new channel corridor with native species.

03

Community Relations

Continually involving the stakeholders during the design process was a critical factor in the success of the Franklinville Road Bridge replacement. WBK and MCDOT engaged community involvement at the beginning of Phase I to help identify the public's concerns with the project. Letters were sent encouraging residents to attend a public information meeting prior to the start of detailed planning. WBK made a presentation of the anticipated improvements to the public and answered questions with MCDOT staff. Following the meeting it was apparent that the corridor had several stakeholders that would be actively engaged throughout the planning and design process. WBK and MCDOT emphasized the importance of each stakeholder by coordinating with them on an individual basis, with some of the challenges and successes outlined below.

Blue's Property

The Blue Family owns the property along the west side of the project corridor on both sides of the channel. It was identified early in the project that they would be an integral stakeholder in the project as the bridge replacement extended beyond the existing roadway right-of-way and onto their property. WBK had several on-site meetings with the landowners, listening to their concerns and discussing potential solutions. Some of the concerns included access to Franklinville Road, erosion along the creek banks, and minimizing additional impacts to their property.

MCDOT made it a priority to not impact the Blue's access to Franklinville Road which dictated some of the design decisions, including the roadway profile, bridge location, and guardrail layout (discussed further in 'Adverse Conditions' Section). The Blues also noted that erosion along Franklinville Creek had started to reduce the functionality of their property and was threatening some of their on-site storage structures. Relocating the creek to its original alignment, grading and planting the old channel, and extending drainage structures helped to remedy these concerns. The final landscaping, tree replacement, and grading far exceeded the Blue's expectations as it restored the aesthetic nature of their property while extending the usability through the regrading of the old channel.



Blue's property along west side of project corridor and bank erosion near shed.

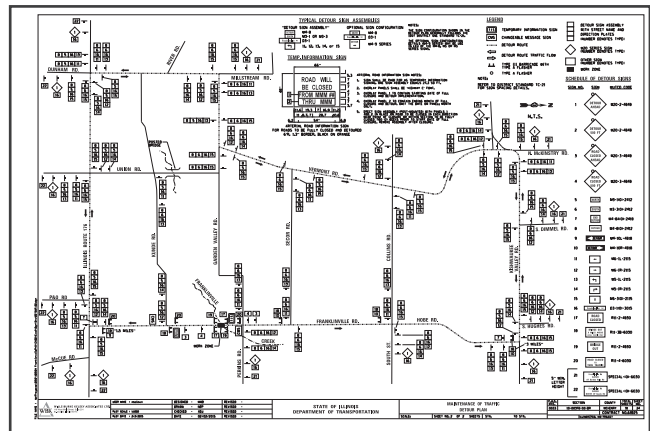
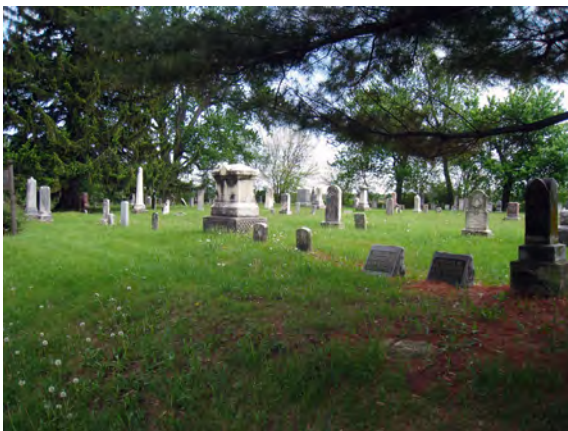
Additionally, the channel re-alignment, grading, and wetland plantings occurred outside of the roadway right-of-way, requiring both temporary and permanent easements to complete the improvements. The coordination and plan considerations incorporated into the plans not only exceeded the expectations of the landowner, but allowed for quick right-of-way negotiations, helping his expedited project to stay on schedule.

Conservation District and Cemetery

The McHenry County Conservation District was an important project stakeholder who owns a parcel abutting the east side of the project corridor. Farmed in its current state, early conversations indicated that the Conservation District wanted the existing land use to be maintained to the greatest extent possible. Additionally, the southeast corner of the project was identified early in the planning process as a potential compensatory storage location. Through communicating with the Conservation District and moving the compensatory storage west of the bridge, onto the Blue’s property, WBK was able to meet the landowner’s expectations. Similar to the Blue’s property, a temporary easement was necessary to relocate the channel, grade, and complete final landscaping. Working with the property owner throughout the design process allowed for the right-of-way process to be resolved quickly and avoid project delay.

Detour Coordination

Coordinating a single detour can be a tough sell for local government, let alone two detours. MCDOT’s commitment to the design approach and staging of this project made the final improvements possible. In order to construct the new bridge and establish the realigned channel the project was completed over two construction seasons. While inconveniencing the local motor public is never taken lightly, MCDOT was committed to the bigger picture. Working with the designer and contractor, MCDOT was able to open the project during the winter months between construction stages and actively communicated the schedule to the public. The result, a great improvement while minimizing the impact to local motorists.



The cemetery at the southeast limit of the project was a limiting factor, while the detour plan was extensive and critical to the project staging.

04

Unusual Accomplishments Under Adverse Conditions

The Franklinville Road Bridge Replacement encountered several challenges during the design and construction phases that would have derailed most projects. During phase I, the existing bridge received a sufficiency rating of 25.6, creating a sense of urgency with the design schedule. Permitting, right-of-way, and design were expedited to try and replace the existing bridge in 2015. Once under construction, the contractor was faced with a tight corridor, numerous utilities including overhead power lines spanning the creek, and a significant amount of work within the floodplain. These obstacles were tackled collectively by the County, WBK, and Sjostrom to help make the project a success.

Expedited Schedule

As noted, during phase I planning the bridge inspection resulted in a sufficiency rating of 25.6, causing major concern for the County on whether the bridge should remain open. Staff considered closing the bridge if it was not replaced in 2015, which would have resulted in an extended closure. Upon receiving Phase II contract approval from IDOT in September 2014, WBK and MCDOT were on the clock to meet the IDOT schedule for an April 2015 letting. In order to adhere to the schedule, WBK had approximately 4 months to complete permitting and the plans, specs, estimate deliverable while the County handled right-of-way negotiations locally in order to meet the 5 month window for final certification.

Several permitting agencies were involved, including the USACE, McHenry County SWCD, McHenry County Planning & Development, and IDNR-OWR. Relocating the existing channel was a significant project challenge, especially when it needed to be coordinated with so many different agencies. Coordination began late in the Phase I process and was pursued diligently during Phase II to stay on schedule. In order to mitigate impacts to a corridor that included ADID wetlands and reduced the Waters of the US, WBK and MCDOT worked with the permitting agencies to develop a mutually beneficial resolution. Consequently, MCDOT purchased wetland bank credits for the on-site impacts and replanted the creek corridor with native wetland plugs/seeding to mitigate the Waters of the US impacts. MCDOT issued a five year maintenance and monitoring contract, ensuring the proper establishment of the newly planted corridor.



The contractor was faced with a tight corridor, which included overhead lines, and experienced dramatic flooding in the existing condition.

The 4 month project timeline was greatly reduced from the standard 12-18 months for Phase II design, yet the project met the required dates and was included on the April 2015 letting. Replacing the bridge during 2015 and avoiding a long term shut down minimized the impact on local users.

Construction Challenges

The project corridor had several challenging features. A tight right-of-way along the roadway corridor limited access and staging potential, and with most of the grading occurring within the floodplain, Sjostrom was forced to stockpile materials off-site. Overhead power lines extend along the west side of the project and was a concern with such extensive clearing and grading in close proximity. The utilities were maintained though out the project, limiting inconveniences to the neighboring residents. With the grading and relocation of the existing channel occurring within the floodplain, for a location that was very sensitive to flooding, maintenance of erosion control best management practices were at a premium during construction. The project was staged to not only allow for the vegetation to be established prior to bringing the new channel on-line, but also so it could operate as a desilting basin during rain events. This minimized the risk of sediment entering the channel during construction as several additional best management practices were utilized throughout construction.

05

Additional Considerations

To an outside observer, the Franklinville Road Bridge replacement may not stand out as an award winning project. If analyzed strictly by its components the project has several appealing features, but none of them may appear extraordinary. However, when viewed as a sum of its parts, this is much more than just another bridge replacement project. From the beginning, extra care was given to this roadway and channel corridor to ensure each completed task was another step towards the ultimate goal of creating a site that was significantly improved when compared to its original condition.

WBK and MCDOT teamed to identify specific project metrics that put the property owners first and created a clear vision for the improvements. Limiting impacts to the surrounding parcels imposed several design constraints on the project. In order to minimize fill in the floodplain, avoid eliminating the Blue's driveway entrance, or grading onto the cemetery property, it was determined the roadway profile would remain unchanged. As a result, the bridge alternative analysis identified a slab bridge with a minimum thickness, single pier and maximized bridge opening that reduces the constriction of the existing creek. A roadway that previously overtopped at the 10 year rain event now has the capability to pass the 50 year event with the 100 year headwater elevation matching the crown of the roadway, a significant improvement, especially considering the roadway profile was unchanged.

Additional outside the box thinking included review of the channel history and identifying that Franklinville Creek had continued to migrate north, invading the Blue's property. It presented a challenge many project teams may shy away from or not know how to properly remediate. However, WBK and MCDOT identified that moving the channel would not only reestablish its natural condition, but would mitigate bank erosion, allow for staged construction of the bridge and channel, and facilitate a guardrail installation that avoids elimination of the Blue's driveway.

Between the detailed erosion control plans and SWPPP the project corridor looked more like that of a nature preserve than a roadway, as several best management practices were implemented to



Looking south, a dramatic transformation from existing condition to final construction.

avoid sediment entering the existing creek. The grading plans allowed for the new creek alignment to be used as a sediment basin during stage one and avoid runoff from entering the channel. Several different material types were used to line the creek and ditch bottoms to minimize erosion and improve infiltration, respectively. Special topsoil retention systems were used along the banks of the channel to help establish vegetation and avoid sediment washout. Planting plans considered the hydrology and hydrologic conditions of the soil as native trees were selected to replace those impacted by the improvements. Each decision was coordinated and considered the other project components.

It would be a disservice not to assess this project as a sum of its parts. Evaluating each of the identified concerns during the design/planning phase, implementing them into the design in an expedited fashion, working effectively with multiple permitting agencies to relocate a creek, keeping open lines of communications and delivering beyond resident expectations, pulling off a schedule that looked as though it may require a miracle, and executing the plan in a safe and efficient manner all the way through construction resulted in a corridor worthy of an award.



The finished roadway and channel corridor, which will only continue to thrive during the maintenance and monitoring period.



Looking south, the existing roadway corridor prior to construction.



Franklinville Creek - While the corridor is of a high quality multiple locations began to experience invasive species and woody vegetation.



The Blue's home is located at the edge of the existing right-of-way, limiting the opportunity to modify the roadway profile.



The existing bridge had experienced significant deterioration and received a sufficiency rating of 25.6.



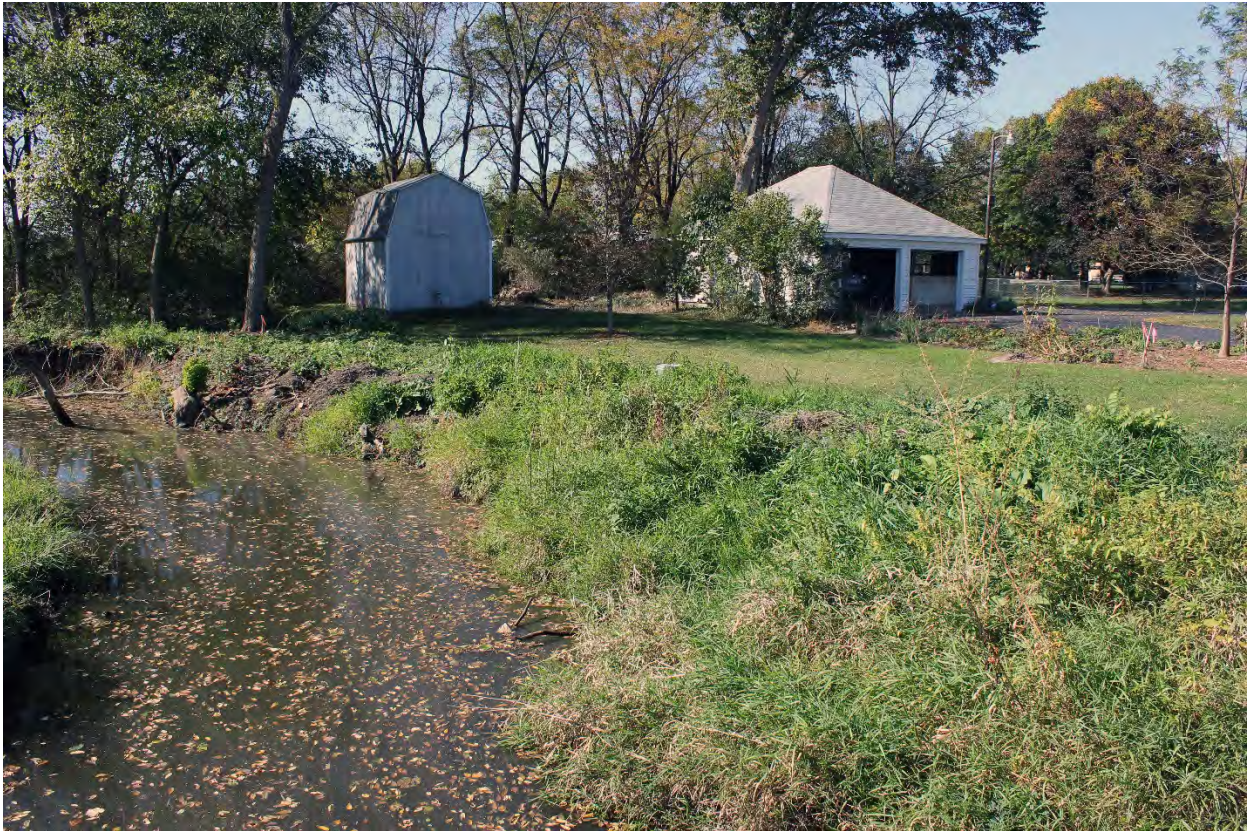
A tight corridor with several existing utilities, including overhead power lines.



The Blue's property was very near the existing roadway and would be impacted by the slightest roadway changes.



The existing bridge experienced overtopping during the 10 year rain event.



The bank nearest the Blue's property had experienced significant erosion and was threatening their shed and garage.



WBK worked with the cemetery to provide a new access and avoid any impacts to the property.



Deck framing and reinforcement, as the slab bridge minimized the depth of the structure and maximized the bridge opening.



Deck pour in a restricted corridor.



The bridge was completed during Stage 1 "in the dry" to minimize channel impacts.



Sediment bags were one of the many BMPs used on site to minimize erosion.



A temporary guardrail transition design allowed for the roadway to be opened safely during winter shutdown.



The new channel and plug plantings.



The new bridge overpass.



The new channel corridor.



New roadway corridor.

Chapter Award Nomination Form

Please type this information exactly as requested. It will be cut and pasted into a database.

Award Category Submitted:	Transportation Less than \$5 million
Nominee: (as printed on plaque)	McHenry County Division of Transportation
Title of Project: (if applicable)	Franklinville Road over Franklinville Creek Bridge Replacement
150 word summary of award application highlights: (this will be used for the press release)	<p>Project Highlights:</p> <ul style="list-style-type: none"> • Working with IDNR/OWR Permitting Agency to relocate the existing channel to its natural alignment • Hydraulic modeling eliminated the “choke” point of the existing bridge and lowered the flood elevations • Coordinated with important stakeholders early and often, leading to a design that minimizes impacts and preserves the environmental integrity of corridor • It was determined early in planning that the roadway profile could not be raised without dramatically impacting surrounding properties. WBK selected the bridge type, opening, and location that maintained the existing profile • WBK coordinated with McHenry County Conservation District to preserve existing land use • Two Year construction staging to establish channel in advance of relocating it • Construction staging of bridge allowed roadway to be open during winter between Years 1 and 2 of construction • Five year maintenance and monitoring program to establish wetland/native vegetation along channel corridor • ROW negotiations were completed locally to expedite engineering and project delivery
Award Contact Name: (this must be the awardee) Salutation (Mr., Mrs, Ms.)	Mr.
First Name	Joseph
Last Name	Korpalski, Jr., PE
Job Title	Design Manager
Company/Agency	McHenry County Division of Transportation
Address1	16111 Nelson Road
Address 2	
City	Woodstock, Illinois
Postal Code	60098
Contact email:	JRKorpalski@co.mchenry.il.us
Contact Phone:	815-334-4960
Secondary Contact: (for courtesy notification of award only – all official contact will be with the awardee) Name Agency/Company Address City, State Zip	<p>P.J. Fitzpatrick WBK Engineering, LLC 116 West Main Street, Suite 201 St. Charles, Illinois 60174</p>
Secondary Contact email:	pjfitzpatrick@wbkengineering.com
Secondary Contact Phone:	630.443.7755

PUBLIC WORKS PROJECT OF THE YEAR AWARD NOMINATION FORM

Deadline March 1, 2017

(electronic submittals only)

Project Name

Franklinville Road over Franklinville Creek Bridge Replacement

Project Completion Date

Must be substantially completed (90%) and available for public use as of December 31, 2016.

Open to Traffic 6/30/16

Public Agency

McHenry County Division of Transportation

Project Category

- Structures
- Transportation
- Environment
- Historical Restoration/Preservation
- Disaster or Emergency Construction/Repair

Project Division

- Less than \$5 Million
- \$5 Million, but less than \$25 Million
- \$25 Million–\$75 Million
- More than \$75 Million

Managing Agency

Joseph Korpalski, Jr., PE

Name

Director of Transportation/County Engineer

Title

McHenry County Division of Transportation

Agency/Organization

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City

State/Province

Zip/Postal Code

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Phone

JRKorpalski@co.mchenry.il.us

E-mail

Primary Contractor

Grant Sjostrom

Name

Vice President

Title

Sjostrom and Sons Inc.

Agency/Organization

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Primary Consultant

P.J. Fitzpatrick

Name

Transportation Group Practice Lead

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Zip/Postal Code

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Continued...

PUBLIC WORKS PROJECT OF THE YEAR AWARD SUPPORTING DATA FORM

Please address each of the following areas in your nomination, adhering to the sequence below when possible.

- Completion date contained in contract. Any time extensions granted should be addressed in the submittal.
- Construction schedule, management, and control techniques used. Use of alternative materials, practices of funding that demonstrates a commitment to sustainability.
- Safety performance including number of lost-time injuries per 1,000 man-hours worked and overall safety program employed during the construction phase.
- Environmental considerations including special steps taken to preserve and protect the environment, endangered species, etc., during the construction phase.
- Community relations—a summary of the efforts by the agency, consultant and contractor to protect public lives and property, minimize public inconvenience and improve relations.
- Unusual accomplishments under adverse conditions, including but not limited to, adverse weather, soil or site conditions, or other occurrences over which there was no control.
- Additional considerations you would like to bring to the attention of the project review panel, such as innovations in technology and/or management applications during the project.

NOTE: Supporting documentation is **limited to 20 pages**, exclusive of photographs and nomination form. Photographs will be used for promotional purposes by the association. Submittal should include nomination form and supporting documentation form, and photographs. No letters of recommendation please. Simultaneous nomination of the same project in both Public Works Project of the Year and SC/RC Project of the Year or in two categories is not permitted.

Nominations not chosen in a specific year for the Public Works Project of the Year—Small Cities/Rural Communities Award cannot be resubmitted in a subsequent year in the other category.

Nominated by: *(Can only be nominated by managing public agency or APWA chapters.)* Projects that involve or reside within two or more chapters locations can be co-nominated. Each chapter will receive credit to submit a PACE nomination. All chapters must be identified on the nomination form and before the nominations are judged.

Joseph Korpalski, Jr., PE

Name

Director of Transportation/County Engineer

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