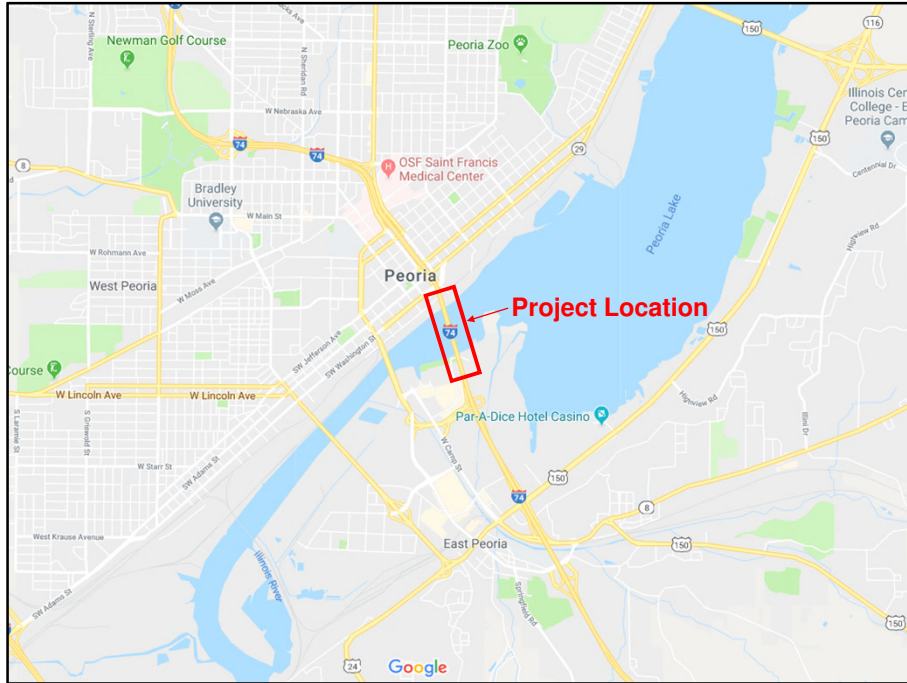


#68C89
I-74 / IL 29 Murray Baker Bridge
Pre-Bid Meeting



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Murray Baker Bridge Rehabilitation Project



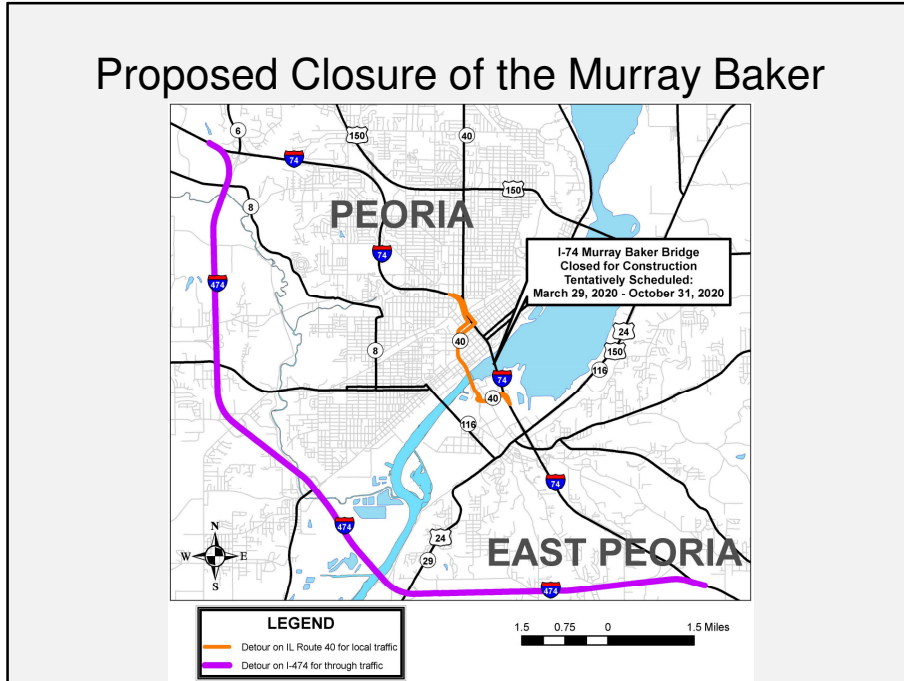
Today's Objectives

- Present an Overview of the Project
- Question and Answer Session



Murray Baker Bridge Rehabilitation Project

Proposed Closure of the Murray Baker



The proposed work on the structure will be completed with the bridge closed to traffic. The closure is scheduled for March 29, 2020 to October 31, 2020. Through traffic in the Peoria metro area will be detoured on Interstate 474 and local traffic will be detoured on Illinois Route 40. See the local traffic detour exhibit for more detail on the detour.

Related Contracts

- Temporary Signing Contract
 - #68D99 (June 2019 Letting)
 - T.M.F. Construction Company
 - I-74 closure and detour signs are to be installed and uncovered by end of the day March 29, 2020
- Detour Preparation and Restoration Contract
 - #68E71 (June 2019 Letting)
 - Otto Baum Company, Inc.
 - Detour preparation work is to be completed by March 20, 2020



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Related Contracts (Continued)

- River Rd. / Camp St. Intersection Improvement
 - City of E. Peoria planning for Summer 2020 construction
- See special provision titled, “Cooperation and Coordination with other Contractors.”
 - Three coordination meetings are required.
 - Coordination of traffic control is required.



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Incentive/Disincentive

- See the special provision titled, “Incentive/Disincentive Plus Working Days.”
 - October 31, 2020 completion date, plus 15 working days as specified in the special provision.
 - I-74 and I-74 ramps shall be opened to traffic on or before the October 31, 2020 completion date.
 - The incentive/disincentive is \$25,000 per calendar day (with a maximum on the incentive) as specified in the special provision.



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Working Restrictions

- No lanes shall be closed on I-74 or I-74 ramps on weekdays between 6:00 A.M. and 8:30 A.M. or between 3:00 P.M. and 7:00 P.M., except during the closure of the Murray Baker Bridge from March 29, 2020 to October 31, 2020.
 - Note: Lane closures are allowed on the bridge prior to the closure, but are restricted as stated above. Lane closures will not be allowed during unsuitable weather, as determined by the Engineer (see Article 105.01 of the Standard Specifications).
- The Contractor shall not close I-74 before the scheduled March 29, 2020 closure date.
- During the closure of I-74, the Contractor shall detour traffic onto IL Route 40, as detailed in the staging plans. The Contractor shall install all pavement markings and install all traffic control along the detour route prior to closing I-74.



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Working Restrictions (Continued)

- The Contractor shall complete tunnel luminaire maintenance and repair on the westbound I-74 entrance ramp from Glen Oak Ave. prior to closing I-74.
- The proposed traffic control, as shown on the staging plans, at the intersection of River Road and Washington Street and at the intersection of River Road and Camp Street shall be set up one (1) week before the closure of the Murray Baker Bridge.
- The traffic control shall be removed, and the signals and pavement markings shall be restored at the intersection of River Road and Camp Street no later than three (3) calendar days after I-74 is opened to traffic.



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Commitments

- Commitments have been made for this project.
 - Peoria Park District
 - Unity Point Health

See the commitments in the plans for details.



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Coordination

- U.S. Coast Guard
 - See special provisions titled, “Protection of the Illinois River” and “Maintenance of Navigation.”
- Tazewell and Peoria Railroad
 - See special provisions titled, “Railroad Protective Liability Insurance (BDE)” and “Requirements When Working with the Railroad.”



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Protection of the Illinois River

- Special provision
 - Requires the Contractor to prevent debris from falling into the river
 - Requires the Contractor to close spans, except the main span over the navigation channel, to all river traffic
 - Contractor shall close the spans to river traffic in a manner approved by the U.S. Coast Guard.
 - The Contractor may leave the spans open if the Contractor elects to use protective shield in these areas at the Contractor's expense.
 - See the special provision for more details



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Maintenance of Navigation

- Special provision
 - Requires the Contractor to submit a Plan of Operations within four (4) weeks of award that will be forwarded to the U.S. Coast Guard
 - Requires a manned safety vessel in the river near the structure during work hours when any work is being performed over the river
 - Requires compliance with U.S. Coast Guard requirements
 - See the special provision for more details



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Existing Structure Information Package

- Old Structure Plans
 - On the Contract Detail web page, click on “Plans and Special Provisions.” Then select “ADDITIONAL INFORMATION.”
- Structure Inspection
 - Request from Kevin Horst at 309-671-3472



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Miscellaneous Items

- 404 Permit
- Project Labor Agreement
- DBE Goal = 2.0%

NOTE: See the special provisions for details.



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Structure Plans

Rachel Mertz, PE, SE
Project Manager / Associate
MODJESKI and MASTERS, Inc.



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Scope of Bridge Rehabilitation

- Deck Removal and Replacement – Truss and South Approach Spans
- Structural Steel Repairs
- Zone Cleaning and Painting
- Bearing Replacement
- Substructure Repairs
- Installation of Scour Countermeasures
- Navigation and Roadway Lighting Replacement
- Decorative Lighting Replacement



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The major repairs that will be completed during this rehabilitation include:

Deck removal and replacement on the truss and South Approach spans. Note the deck of the North Approach spans was replaced in 2005 during the reconstruction of the north approach. It is still in good condition and will not be replaced during this project. The existing deck on the truss and South Approach spans is non-composite and will be replaced with a composite deck by installing shear studs on the existing stringers and girders.

Structural steel repairs range from strengthening select truss members along their full length, to installing repair plates at locations of deterioration and replacing missing fasteners.

Cleaning and painting will primarily be performed within the splash zone and under expansion joints. Note that the interior surface of box-shaped members within the limits for cleaning and painting will also be cleaned and painted.

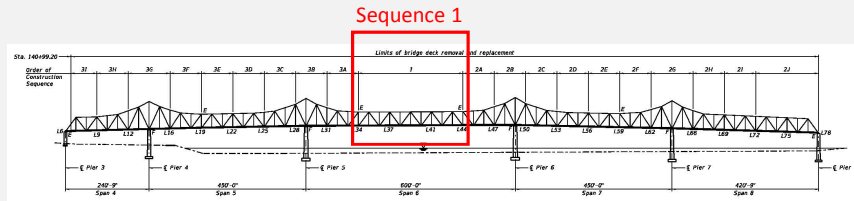
Bearing replacement.

Substructure repairs.

Installation of scour countermeasures.

Replacement of navigation, roadway and decorative lighting.

Truss Deck Removal and Replacement



- Note that the truss deck removal and replacement sequence provided in the plans is suggested, but not required. The Contractor may use this sequence during construction if the stated restrictions are met. The Contractor also has the option to submit his own removal and replacement sequence to the Engineer for review and approval.
- Sequence 1: Remove and replace deck full width between Panel Points 34 and 44.



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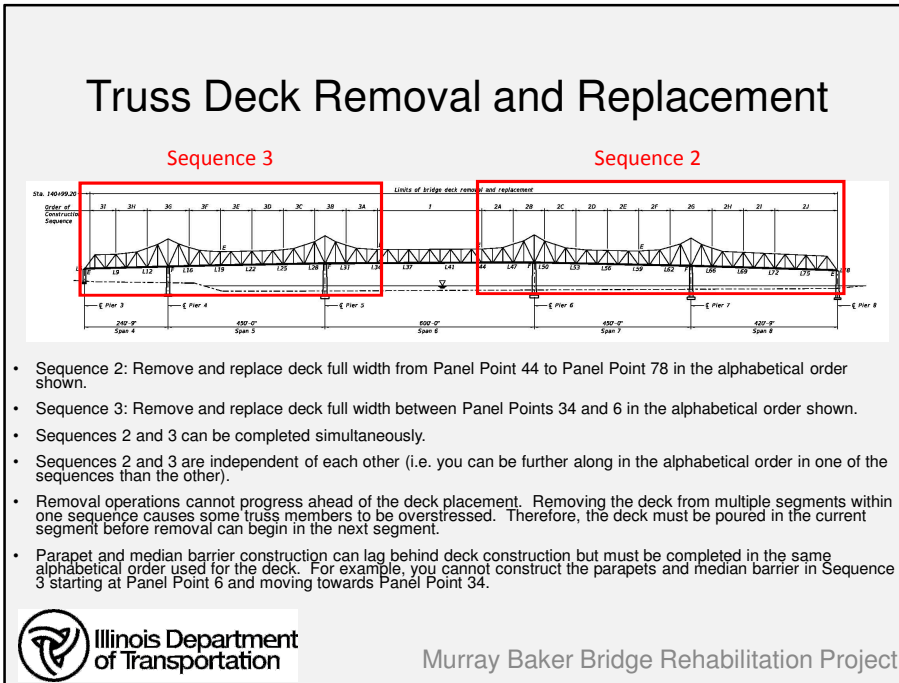
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Note that the truss deck removal and replacement sequence provided in the plans is suggested, but not required. The Contractor may use this sequence during construction if the stated load restrictions are met. The Contractor also has the option to submit his own removal and replacement sequence to the Engineer for review and approval.

For the deck removal and replacement on the truss spans that is detailed in the plans, you would be essentially starting in the middle of the bridge and working your way out to the ends of the truss. The first removal and replacement sequence is on the suspended span that extends from Panel Points 34 to 44.

Note that the full width of the deck on the truss spans is to be removed and replaced during each sequence/segment for this replacement plan.

Truss Deck Removal and Replacement



Once the removal and replacement over the suspended span is complete, you would move on to Sequences 2 and 3. Sequence 2 is the removal and replacement from Panel Point 44 to Panel Point 78. Sequence 3 is the removal and replacement from Panel Point 34 and working back towards Panel Point 6.

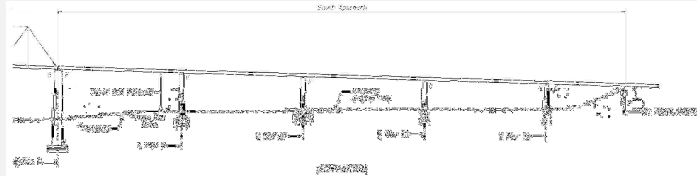
Perform both sequences 2 and 3 in the alphabetical order shown. Sequences 2 and 3 can be completed simultaneously. However, they are independent of each other. In other words, you can be further along in the alphabetical order in one of the sequences.

Removal operations cannot progress ahead of the deck placement. Removing the deck from multiple segments within one sequence causes some truss members to be overstressed. Therefore, the deck must be poured in the current segment before removal can begin in the next segment. To prevent possible damage to the newly poured deck, it must cure for a minimum of 36 hours before removal operations proceed to the next segment.

The construction of the parapets and median barrier can lag behind the deck construction. However, they must be completed in the same alphabetical order used for the deck. In other words, you need to start in the middle and work out towards the ends. For example,

you cannot construct the parapets and median barrier in Sequence 3 starting at Panel Point 6 and moving towards Panel Point 34.

Optional Staging of South Approach Deck Replacement and Replacement of Bridge Approach Slab



- Plan details show full width deck and approach slab removal and replacement.
- Contractor has the option to stage construct South Approach Spans and Bridge Approach Slab (see notes on p. 247, 248, and 255 of the plans).
- Construction joint would be positioned under the median barrier.



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Similar to the truss spans, the south approach spans and the south bridge approach slab were detailed for full width deck removal and replacement. However, the Contractor has the option of stage constructing this portion of the deck/slab replacement which would remove it from the critical path and provide a way for the Contractor to alleviate the schedule.

The construction joint at the stage line would be positioned under the median barrier.

Repair Coordination/Scheduling Work

- All repairs can be completed at any time during the deck removal and replacement, except for...
 - Stringer top flange repairs
 - Splicing on new stringer ends
 - Bearing replacement at Pier 8
- Construction loading from multiple crews must stay within the stated restrictions.
- Many structural steel repairs are located within the limits identified for cleaning and painting.
- The location of some steel repairs may coincide with lighting repair locations.
- New access platforms must be in place before new navigation lighting can be installed.
- Note dry time requirements for faying surfaces with respect to installation of structural steel repairs.



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The Contractor will need to keep the following things in mind when scheduling work and coordinating between crews.

All repairs can be completed at any time during the deck removal and replacement, except for stringer top flange repairs, splicing on new stringer ends, and the bearing replacements at Pier 8.

Construction loading from multiple crews must stay within the stated restrictions.

Note that many of the structural steel repairs are located within the limits identified for cleaning and painting.

Also, the location of some steel repairs may coincide with lighting repair locations.

New access platforms must be in place before new navigation lighting can be installed.

Also take into consideration the dry time requirements for faying surfaces with respect to installation of structural steel repairs. Note that this requirement is different between some steel repairs and depends on the identified connection type.

These are only a few examples of items that will require coordination.

Allowable Construction Loading

- Assumed a construction load of 20 psf – applied full width of deck and pattern loaded to maximum force at each individual member.
- To determine the assumed construction load used during design, we backed into a maximum loading condition that would not exceed the capacity of each individual member.
- Contractor will need to ensure that the combined weight of all construction vehicles, equipment, work platforms, stockpiled material, and all other construction dead and live loads on the bridge at any given time do not create forces in the bridge members that exceed the maximum force calculated during design.



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As noted in the previous slide, construction loading from multiple crews must stay within the stated restrictions.

During design, an assumed construction load of 20 psf was applied full width of deck and pattern loaded to maximum force at each individual member.

To determine this 20 psf construction load, we essentially backed into a maximum loading condition that could be applied to the structure without causing the capacity of each individual member to be exceeded.

The Contractor will need to ensure that the combined weight of all construction vehicles, equipment, work platforms, stockpiled material, and all other construction dead and live loads on the bridge at any given time do not create forces in the bridge members that exceed the maximum force calculated using the assumed 20 psf construction load.

Questions?

