



NEWS

I-74 IOWA-ILLINOIS CORRIDOR STUDY

ISSUE 5 SPRING 2006



Iowa Department of Transportation



Illinois Department of Transportation

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Comments Welcome!

- Complete and return the comment form inserted in this newsletter.
- Visit the Project Web site at i74corridorstudy.org and send us an electronic message.

The I-74 Iowa-Illinois Corridor Study is jointly sponsored by the Iowa and Illinois Departments of Transportation

Message from the Project Advisory Committee

The preliminary bridge type study for the new I-74 Mississippi River crossing is under way. The new bridge will be a dominant feature of the improved I-74 corridor. A comprehensive analysis of possible bridge types was prepared with the object of identifying technically and financially effective bridge design alternatives. While aesthetics (how the bridge will look) is one component that will figure into this important decision, the river crossing itself has many features that dictate what type of bridge can be constructed at this location. The United States Coast Guard requires a vertical clearance of 60 feet above the normal water elevation and a bridge opening of 710 feet to accommodate boats and barges. Also, the bridge must accommodate four traffic lanes and full width shoulders in each direction along with a bicycle/pedestrian trail on the west side of the new bridge.

The project team has studied various bridge alternatives. A broad range of bridge types was considered and evaluated on relative engineering and financial performance and overall aesthetics. Bridge types that initially were considered for the river crossing but then eliminated were steel and concrete girder, truss, and suspension bridges. These bridges are discussed in greater detail on page 2.

The project team initially identified three bridge types as feasible replacements for the existing I-74 bridges—true arch, tied arch, and cable stayed. The team then developed, evaluated, and screened design alternatives

for each bridge type to identify a set of finalist bridge types that satisfy the project criteria. Each finalist bridge type was developed to accommodate a new bike/pedestrian trail crossing of the Mississippi River. The trail crossing is an important enhancement to the regional and national trail network in the Quad Cities—an accommodation that was incorporated into the project design on the basis of widespread community support for it.

The project team invites you to participate in an information meeting for the I-74 Iowa-Illinois Corridor Study. The meeting will be held on May 23, 2006 from 4:00 to 8:00 p.m. at the Mark in Moline, IL. The purpose of the meeting is to update the public on the progress of the project. The finalist bridge types will be presented for public review and comment. The meeting will be an open house format and staff will be available to discuss the project and to answer questions. All interested individuals are invited to offer input on the project and the finalist bridge types by completing a bridge type questionnaire and project comment form. Please plan to attend.

Public Information Meeting

Date: May 23, 2006
Time: 4:00–8:00 p.m.
Place: The Mark (Conference Center)
1201 River Drive
Moline, IL

You may attend the meeting anytime between 4 and 8 p.m.

Bridge Types Considered for the I-74 Mississippi River Crossing

A broad range of potential bridge types were evaluated as replacement candidates for the existing I-74 bridges. The bridge types considered are presented below along with an example of each respective bridge type.

Bridge Types No Longer Under Consideration



Girder Bridge

Example in Iowa

Girder Type

Girder bridges are perhaps the most common bridge type in the U.S., and the introduction of high performance steel and advances in construction practices have made them feasible for long spans. In general, girder bridges are cost-competitive to spans of roughly 450 feet. Both steel and concrete girders were considered for the I-74 bridges, but they were eliminated from further study due to the required navigation span of 710 feet.

Suspension Type

The existing I-74 bridges are suspension bridges that have functioned very well and are an appropriate bridge type given the characteristics of the soil and bedrock under the bridges. Major developments in suspension bridge technology have occurred over the past few decades, primarily related to international projects with very long spans. However, very few suspension bridges have been constructed in the U.S. over the past few decades since

the completion of the interstate highway system. As a result, few U.S. contractors have demonstrated experience in constructing this

type of bridge. Developments in bridge technology have resulted in other bridge types more economical to construct in the 710-foot span range than a suspension bridge. Also, suspension bridges (depending on configuration) may be costly to inspect and maintain relative to other bridge types.



Suspension Bridge

Example in Iowa

Truss Type

Truss bridges are able to span the necessary horizontal clearance and would provide a wide single bridge that carries both roadways. The truss members would be steel box or tubular elements with the floor system consisting of steel beams and stringers with a concrete deck slab. From the driver's point of view, this scheme



Truss Bridge

Example in Iowa

is very confusing because of the numerous structural elements at different angles and directions. When seen from the water, the bridge is not elegant or simple, and so it received poor aesthetic ratings. Truss bridges generally are more difficult to maintain and repair. For these reasons, the truss bridge type was eliminated from further consideration.

Bridge Types under Consideration

The Iowa and Illinois Departments of Transportation (DOTs) considered a wide range of bridge types for the I-74 Mississippi River Crossing. The previous section explained the major bridge types that were considered and dismissed while this section will identify bridge types still under consideration for the I-74 river crossing. Based on a detailed evaluation, three major bridge types remain under consideration: the true arch, the tied arch, and the cable stayed. All of these bridge types are cost-effective for the spans being considered.

True Arch Type

True arch bridges have the classic arch shape, with the arches extending below the bridge deck - visually ending at the water. Certain configurations of true arch bridges can be built off site which lessens the impact to river traffic.

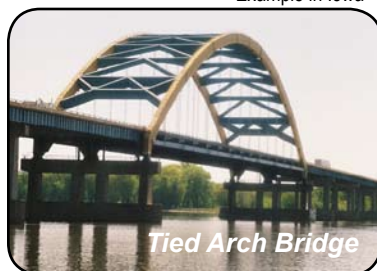
Example in Arizona



Tied Arch Type

Tied arch bridges also feature the classic arch shape, but the arches end at the bridge deck (as compared to the true arch where they appear to extend to the water surface). Certain configurations of tied arch bridges can be built off site which lessens the impact to river traffic.

Example in Iowa



Cable Stayed Type

Cable stayed bridges have been common since the 1950s. They are relatively easy to construct and allow for a great deal of design flexibility in terms of the arrangement of the cables and shape of the towers.

Example in Iowa



Why Can't the Existing I-74 Bridges be Retained?

The I-74 bridges have functioned very well for many years. However, retaining or retrofitting them is not a practical option. There are several reasons the existing structures cannot be improved to accommodate a wider I-74 roadway. The cost to repair and widen the existing suspension bridges could be more than building a new bridge. Also, the bridges would need to be out of service while they are being dismantled and widened. Retaining one or both of the existing structures for an alternative purpose (local traffic or bike/pedestrian facility) was evaluated but found to be infeasible. Thus, the bridge studies for the new I-74 Mississippi River bridge have been performed with the understanding that the existing bridges will be abandoned and removed following construction of the new crossing.

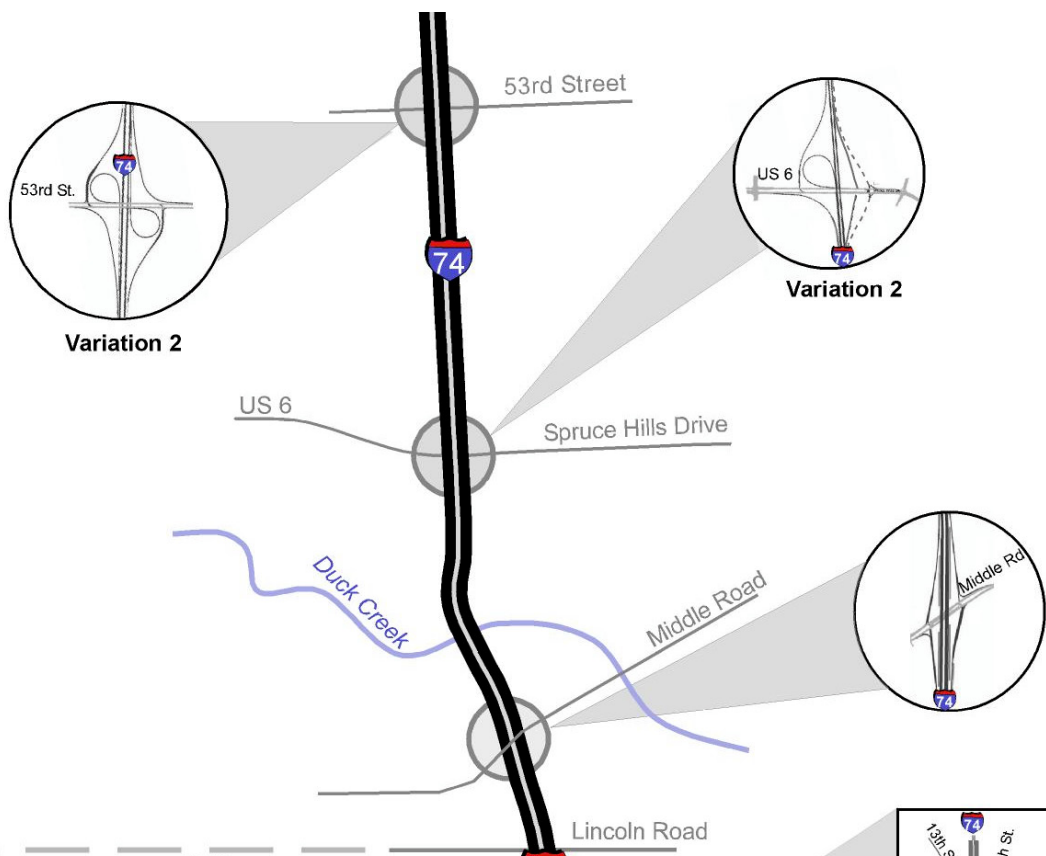
Bridge Type Evaluation

A comprehensive screening process for potential bridge types is being performed to identify acceptable replacement bridge types for the Mississippi River crossing. The evaluation was structured to help identify the most effective bridge type for the new river crossing. Bridge types were evaluated on the basis of three general performance factors: engineering performance (design features, constructability, environmental / social impacts, roadway design compatibility, and security / protection), financial performance (initial construction and life-cycle cost), and overall aesthetics. The design team carefully evaluated all bridge types to determine the ones that best met the performance factors.

The Iowa and Illinois DOTs will perform a similar evaluation of the finalist bridge types, and will ultimately select one bridge type to be carried forward for more detailed design development.

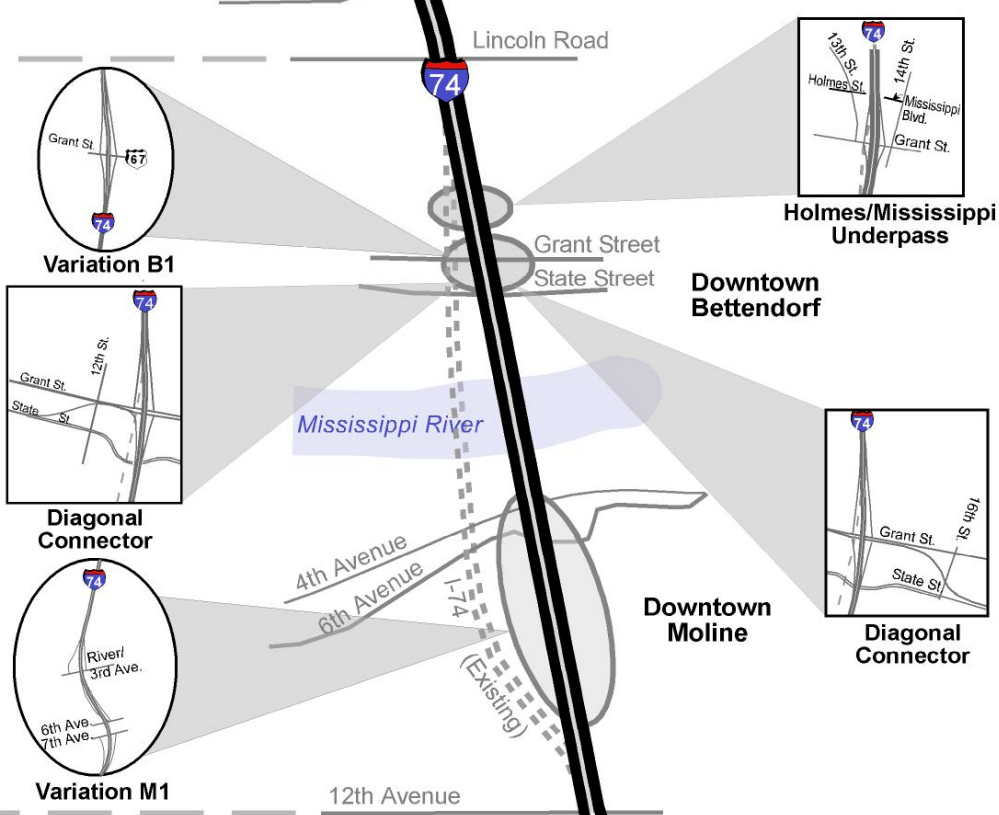


NORTH SECTION

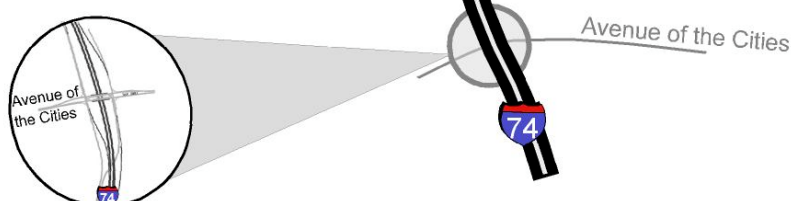


CENTRAL SECTION

**F (Far East)
Alignment
Alternative**



SOUTH SECTION



I-74 PREFERRED ALTERNATIVE
January 2005

The I-74 Preferred Alignment

In addition to bridge studies, the project team has been working on the I-74 roadway design. The Iowa and Illinois DOTs, in conjunction with the Federal Highway Administration (FHWA), identified the Preferred Alternative in 2005. Engineering criteria, environmental and social factors, and public input (including input from local officials and the Advisory Committee) were considered in the alternatives development process. Alternatives were developed and evaluated on the basis of their ability to improve transportation, to meet established planning and design standards, to avoid or minimize impacts to environmental resources, and to maintain economic viability along the I-74 corridor.

The Preferred Alternative consists primarily of a new river crossing and roadway improvements along mainline I-74 and connecting local roadways.

The Preferred Alternative is illustrated on page 4, and its principal features are briefly described below. A more detailed description of the Preferred Alternative as well as the alternatives considered in the earlier stages of the project area is available on the project Web site.

South Section

Along the Illinois approach of I-74, extending from Avenue of the Cities (23rd Avenue) to 12th Avenue in Moline, the Preferred Alternative includes widening and reconstructing I-74. The Avenue of the Cities interchange would also be improved. It is expected that improvements in the south section can generally be accomplished within existing highway right-of-way, however, the possible need for property acquisition will be further evaluated during preliminary design.

Central Section (Mississippi River Crossing)

Between 12th Avenue in Moline and Lincoln Road in Bettendorf, the Preferred Alternative consists of widening

and reconstructing I-74 on an alignment east of the existing roadway. A new I-74 Mississippi River Bridge would be constructed east of the existing bridges, and the existing bridges would be removed. Interchanges in downtown Moline and Bettendorf would be reconstructed with associated improvements to connecting local roadways and a new bike / pedestrian trail crossing would be provided. New right-of-way would be required for the proposed improvements.

North Section

Along the Iowa approach of I-74, extending from Lincoln Road through 53rd Street, the Preferred Alternative consists of widening and reconstructing I-74. Improvements would be made at the Middle Road, US 6/Spruce Hills Drive, and 53rd Street interchanges. It is expected that improvements in the north section can generally be accomplished within existing highway right-of-way, however, the possible need for property acquisition will be further evaluated during preliminary design.

What's Next?

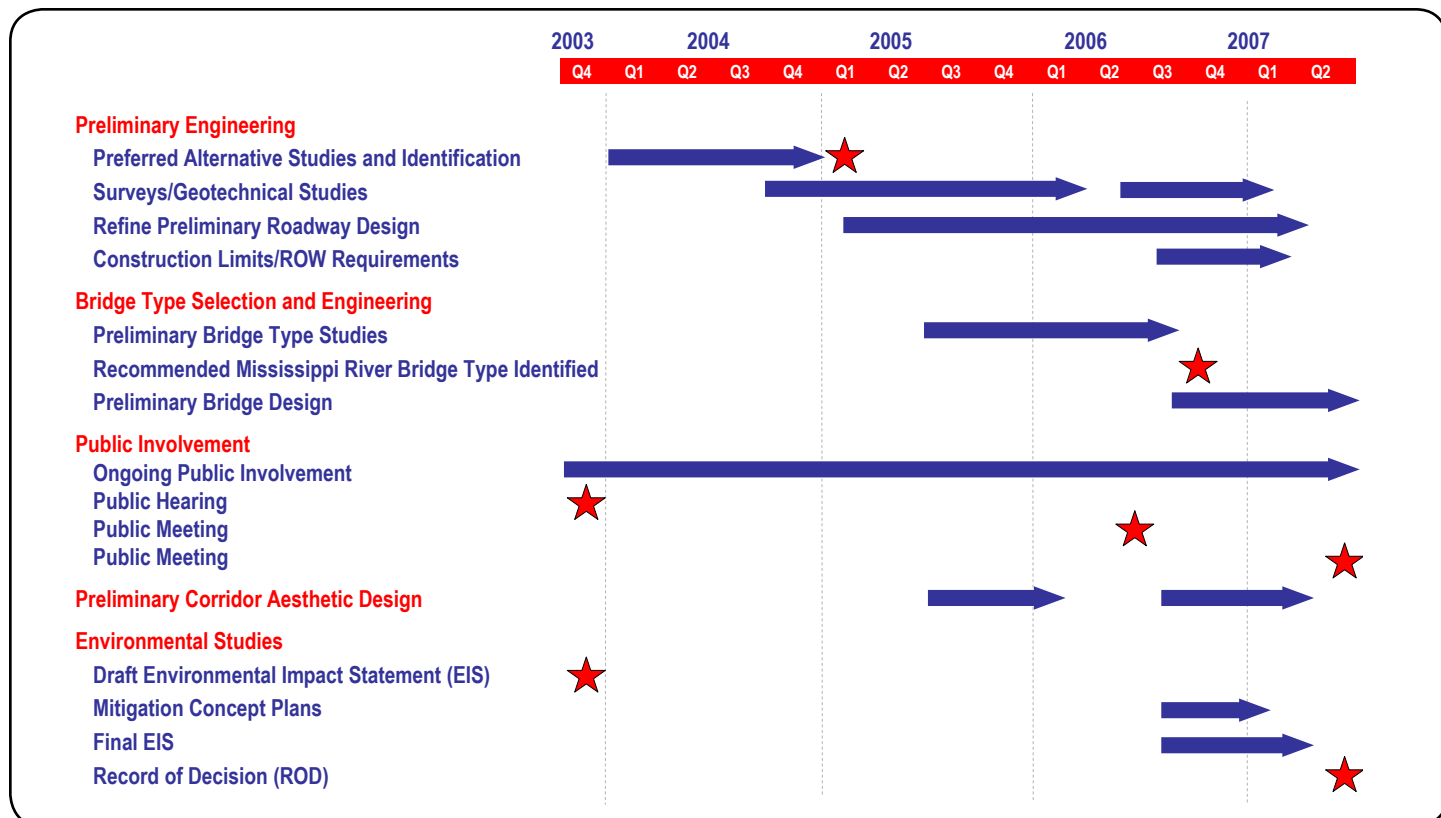
You are invited to attend the upcoming I-74 Public Information Meeting to view and provide comments on the I-74 project and the finalist bridge types. The project team will review public input and performance evaluation results during identification of the recommended I-74 Mississippi River bridge type. The recommended bridge type will be carried forward for more detailed design.

The project team recognizes the I-74 corridor as an important gateway to the center of the Quad Cities. An I-74 corridor aesthetics analysis team, whose members will include community leaders and local government representatives, is being formed to provide input into the development of an attractive and cohesive design for the I-74 corridor. The team is expected to hold its first team meeting in summer 2006. The aesthetic plan will be guided by consideration of feasibility, future maintenance costs, and responsibility for upkeep of any corridor enhancements.

Public involvement remains an important part of the I-74 project development process. The goal of the I-74 Iowa-Illinois Corridor Study's Public Involvement Program is to ensure that interested parties are informed and involved throughout the I-74 study process. You are encouraged to stay involved and informed of project efforts and to continue to provide input through the various public involvement opportunities discussed below:

- **Project Web Site.** The project Web site (i74corridorstudy.org) is updated regularly. Visit the site to learn up-to-date project information, to submit comments, to add a name to the mailing list, or to obtain contact information.
- **Project Newsletters.** Newsletters, like this one, are mailed at major project milestones. They summarize the work that has been completed since the last publication and explain the findings of any completed studies. Each newsletter contains a mail-back form that you can use to provide comments on the project or to

I-74 Study Schedule



Please Plan to Attend the Upcoming Public Meeting

A public information meeting is scheduled to share the results of the preliminary bridge type study and to encourage public comment on the project. Information presented at the meeting will include:

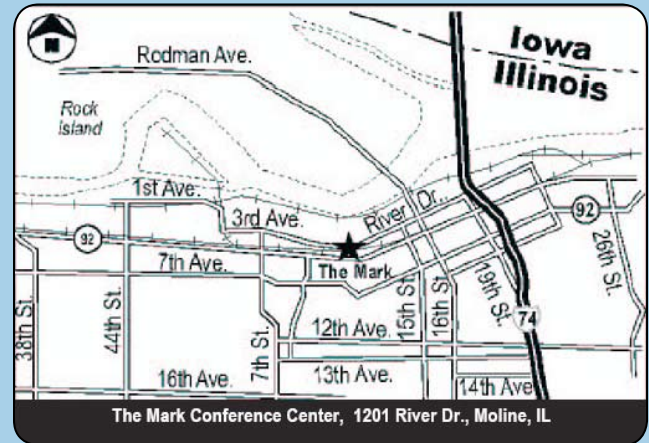
- **Project background and a review of progress to date**
- **The preferred roadway alternative**
- **Bridge types considered and method of evaluation**
- **Finalist bridge types**
- **The corridor aesthetics team and its function**

You may attend the meeting anytime between 4 and 8 p.m.

Date: May 23, 2006

Time: 4:00–8:00 p.m.

**Place: The Mark (Conference Center)
1201 River Drive
Moline, IL**



add a name to the project mailing list. The newsletters also inform you of upcoming public meetings.

- **Public Meetings.** Attend the next public meeting at the Mark in Moline, IL on May 23rd from 4:00 to 8:00 p.m. Project personnel will be available for one-on-one discussion during the meeting. The open house format meeting will provide detailed project information and give you an opportunity to ask questions or provide comment on the project.
- **Small Group/Property Owner Meetings.** If you would like someone from the project team to speak to your organization about the project, please call Catherine Cutler, Iowa DOT, at 800-866-4368 (toll free).

The goal of the next stage of the project is to complete preliminary design plans for the I-74 Preferred Alternative. This effort will enable us to better establish construction staging concepts, finalize the environmental analyses (including potential mitigation concepts), identify right-of-way requirements, and develop a more precise estimate of construction duration and costs. The team will continue to refine the design features of the new

I-74 Mississippi River bridge and I-74 mainline, ramps, and connecting local roadways to the level required to support selection of a recommended improvement plan, which will be identified in the Final Environmental Impact Statement. Once the Iowa and Illinois DOTs agree on the recommended I-74 improvement plan, FHWA will issue approval of the plan through a Record of Decision.

There is currently no construction schedule for the I-74 improvements. The schedule for future efforts, including preparation of final design plans, right-of-way acquisition, and construction, will be determined on the basis of future funding availability and statewide priorities.

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For Further Information

Please contact the project office.

**Iowa Department of
Transportation**

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Cedar Rapids, IA 52406-3150

Fold here, tape, and mail. No envelope necessary.

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