

**Section 1**  
**Purpose of and Need for Action**

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## SECTION 1

# Purpose of and Need for Action

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## 1.1 Description of the Proposed Action

The Iowa and Illinois Departments of Transportation (Iowa DOT and Illinois DOT) and the Federal Highway Administration (FHWA) are proposing improvements to the Interstate 74 (I-74) corridor in the Quad Cities from 23<sup>rd</sup> Avenue in Moline, Illinois, north to 53<sup>rd</sup> Street in Davenport, Iowa ([Figure 1-1, Location Map](#), located at the end of Section 1). The focus of the project is to improve travel along the I-74 corridor in the vicinity of the Mississippi River Crossing. The project traverses the cities of Moline, Bettendorf, and Davenport, and includes a crossing of the Mississippi River. The proposed improvements will consider additional capacity on I-74, an improved Mississippi River crossing, improvements to the existing six service interchanges, enhancements to the connecting arterial roadway system, and improved opportunities for transit, bicycle/pedestrian, and intermodal connections.

The project termini (23<sup>rd</sup> Avenue in Illinois and 53<sup>rd</sup> Street in Iowa) represent the general area of influence of the Mississippi River Crossing. These termini were selected following an examination of the location and characteristics of adjacent interchanges, and a review of prevalent traffic patterns along the I-74 corridor. An objective in this regard was to ensure that improvements at the I-74 Mississippi River Crossing would provide effective transportation improvements along the corridor. (It should be noted that the IL 5 at I-74 interchange in Illinois, which is located about 1.5 miles south of 23<sup>rd</sup> Avenue, is currently under study for improvement as part of planned capacity improvements along IL 5.)

## 1.2 History

Although often discussed generically as “the Mississippi River bridge,” there are, in fact, two bridges: The northbound (Illinois to Iowa) bridge was opened in 1935, and the southbound (Iowa to Illinois) structure was completed in 1960. Both were constructed before the interstate system was instituted and well before I-74 became a route in the 1970s.

This study is the outgrowth of the earlier *Quad Cities Mississippi River Crossing Major Investment Study* (MIS) (December 1998), conducted by the Iowa and Illinois DOTs, which identified strategies to improve travel across the Mississippi River. This earlier study identified a three-pronged solution for which widening and improving the I-74 bridges, which carry the majority of area commuters between Iowa and Illinois, was one important element in increasing capacity of area river crossings. The other two elements were removing tolls on the Centennial Bridge and constructing a new bridge between the cities of East Moline and Bettendorf. Although each solution is being advanced separately, together they represent part of a coordinated Quad Cities strategy for addressing current and future traffic needs across the Mississippi River.

Additional previous and concurrent studies concerning this corridor include:

- **Origin-Destination Survey (Spring 1997).** This data collection study represented Phase I of the MIS.
- **Quad Cities Mississippi River Crossing Major Investment Study (December 1998).** Phase II of the MIS consisted of a comprehensive analysis of the region's current and future Mississippi River crossing requirements. It also established short- and long-term transportation alternatives for the region. The public was encouraged to participate throughout the study. Study Management Group meetings were held to provide information to the public on the study process and a venue for discussion on transportation alternatives under consideration and alternatives analysis. Stakeholder interviews, public information meetings, and other presentations were held to provide opportunities for the public to remain involved.
- **2025 Quad Cities Transportation Plan (2025 RTP) (March 2001, amended July 2002).** The Bi-State Regional Commission has prepared an update of the *Quad Cities, Iowa/Illinois Long-Range Transportation Plan* for 2025. This plan projects the Quad Cities metropolitan area's transportation requirements for the next 24 years. The plan not only considers road and highway needs but also other modes of transportation, including bicycles and pedestrians, transit, and rail. The 2025 Plan was adopted in March 2001 and focuses on a variety of transportation planning concerns. Capacity improvements along I-74 are an element of the plan. Public information and public input were active components in the development of the plan. Interested members of the public were notified of committee meetings, and the 2025 Plan's website provided current information and an opportunity for the public to provide input on the area's transportation needs. Public meetings and hearings were held, and the Bi-State Regional Commission presented updates at open meetings.
- **Rock Island County Metropolitan Mass Transit District (MetroLINK) Study.** Plans are underway to look at the feasibility of developing rapid transit corridors to accommodate light rail or bus options. The initial analysis will look at the possibility of using existing rail lines for service. The study will look at mode and alignment options at the corridor level and include information on costs and benefits, as well as on potential impacts.
- **I-74 Incident Warning System.** An incident warning system, which would serve to notify travelers of incidents and consequent delays, will be incorporated into the proposed project. The MIS recommended the proposed project be used as a pilot project for an incident warning system on the I-74 Bridge. However, as part of the plan for a statewide Intelligent Transportation System (ITS) implementation, the incident warning system will be incorporated throughout the corridor. The Iowa DOT is leading this ongoing study.
- **City of Bettendorf Comprehensive Plan (2000-2020).** A comprehensive plan was prepared for the city of Bettendorf by city planning officials and the Bi-State Regional Planning Commission, along with substantial citizen input. The plan reviews common influences on community development as well as the social and economic history of Bettendorf. Upon consideration of these and other factors such as infrastructure and parks and recreation, a plan was developed to actualize short- and long-term goals of the community.

- **City of Moline Comprehensive Plan (2001).** Moline’s Comprehensive Plan provides an assessment of existing transportation and land use conditions with an eye towards the future of the city. City planning officials, drawing on the community’s characterization of the city today and vision for the future, used information on transportation, recreation, economic factors, housing, and many other aspects of community life to create a plan that would guide the future of Moline in the direction that best represented the objectives of the citizens of the community.
- **At Home By The River—Bettendorf Downtown Redevelopment, Phase Three.** Phase Three of Bettendorf’s plans for redeveloping the downtown area include plans for a residential service center. The proposed center would include “small exclusive stores” and “upscale home supply stores,” as well as a general category of stores “related to residential quality of life issues.” These would be supplemented with a courtyard designed for special events.

### 1.3 Purpose of the Proposed Action

The purpose of the proposed improvements is to improve capacity, travel reliability, and safety along I-74 between 23<sup>rd</sup> Avenue in Moline and 53<sup>rd</sup> Street in Davenport, and to provide consistency with local land use planning goals. The remainder of this section discusses the corresponding needs in detail.

### 1.4 Need for the Proposed Action

The need for the proposed improvements to the I-74 corridor is based on a combination of factors related to providing better transportation service and sustaining economic development. In particular, the proposed action is intended to meet the following needs:

- Traffic demand and service
- Roadway geometry
- Safety considerations
- Dependability of travel
- Transportation connections
- Infrastructure condition
- Economic development

The remainder of this section discusses these factors in greater detail. Together, the purpose of and need for the proposed action shape the range of reasonable alternatives to be considered in this study and provide the criteria for selecting the preferred solution.

#### 1.4.1 Traffic Demand and Service

Motorists in the study corridor currently experience frequent travel congestion and are predicted to continue to experience these conditions in the future, based on a combination of traffic forecasts and current roadway geometry. The existing and predicted traffic volumes are an important consideration, not only in terms of traffic demand, but also for their relationship to other needs, including roadway geometry and safety, as discussed in subsequent parts of this section.

The highest year 2000 average daily traffic (ADT) on I-74 was on the river bridges, with a total of 74,000 vehicles per day (VPD). Recently compiled data for 2002 indicate that I-74

experienced 77,800 VPD on the river bridges, indicating continuing growth in vehicular traffic. Projected traffic for the design year (2025) shows an estimated 78,000 VPD on the river bridges.<sup>1</sup> It is important to note that these projected ADTs are from the adopted 2025 RTP, which includes the construction of a new river bridge near Campbell's Island and the removal of tolls from Centennial Bridge. Without either of these other projects, the projected ADT on the I-74 bridges would be higher.

Highway capacity is typically represented by a measure known as level-of-service (LOS). Accordingly, an analysis of LOS, defined in terms of the average travel speed of all through vehicles on the roadway, was performed. LOS is related to traffic operations and safety. When acceptable LOSs are achieved on a facility, good traffic flow is present and driver frustration is at a minimum. The potential for accidents related to stop-and-go conditions, bumper-to-bumper traffic, and erratic driver behavior is also reduced. Maneuverability within the traffic flow is more efficient. Low LOSs along a facility commonly result in poor traffic flow, reduced maneuverability, increased driver frustration, and an increased potential for traffic accidents.

LOS is denoted in a range from A (best) to F (worst). For LOS categories A through C, traffic conditions are such that speeds are not impeded by other vehicles and maneuverability within the traffic stream is good. Motorists are not generally subjected to appreciable tension under this range of traffic conditions. LOS D describes a traffic stream that is generally moving, but borders on a threshold in which small increases in traffic flow may cause substantial increases in delay, decreases in speed, and breakdowns in traffic flow. Appreciable motorist tension is commonly experienced when the LOS is less than, or below, LOS D. LOS categories E and F typify frustrating stop-and-go conditions, significant delays, and reduced travel speeds, and motorists experience recurrent traffic flow breakdowns with traffic congestion and extensive wait times at intersections. In terms of LOS at signalized intersections, LOS D is indicative of vehicles not usually clearing the intersection within one traffic signal cycle.

For the Iowa DOT, the Illinois DOT, and the FHWA, LOS C is frequently used as an urban roadway design standard, to the extent feasible within the constraints of economic costs, community compatibility, and environmental sensitivities. When acceptable LOS is achieved, traffic flow is maximized, and travel times and driver frustration are minimized. Potential accidents caused by stop-and-go conditions, heavy bumper-to-bumper traffic, and erratic driver behavior are reduced and maneuverability within the traffic flow is increased by improving LOS. A less than acceptable LOS along a corridor is characterized by slow traffic flow, reduced maneuverability, and increased potential for crashes.

The existing corridor currently carries design hourly volumes of up to 3,600 vehicles per hour (VPH) on the mainline and experiences ramp volumes of up to 1,100 VPH. Currently, I-74 consists of two travel lanes in each direction, with auxiliary lanes between several high-volume interchange ramps. Current traffic combined with the geometric characteristics of the corridor result in low LOS at a number of ramp junctions and some mainline freeway segments ([Figure 1-2, I-74 Year 2000 Existing Traffic](#), located at the end of Section 1). As a result, motorists in these areas experience stop-and-go conditions as well as traffic backups at interchange ramps. The low LOS, defined as less than LOS D, is concentrated around the river crossing and is described below:

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<sup>1</sup> The design year represents the 25-year planning period within which traffic forecasts can reasonably be made at this time.

- **Iowa-bound direction.** The segment of I-74 across the Mississippi River currently operates at LOS E during the peak hour. The mainline segments from U.S. 67 to Kimberly Road and from Kimberly Road to Middle Road operate at LOS D during the peak hour. In addition, the River Road entrance ramp, U.S. 67 exit ramp, Kimberly Road entrance ramp, and Middle Road exit ramp all operate at LOS D in the peak hour. Also, the weaving sections between 23<sup>rd</sup> Avenue and 7<sup>th</sup> Avenue, Kimberly Road and Middle Road, and Middle Road and U.S. 6 operate at LOS D, E, or F in the peak hour.
- **Illinois-bound direction.** The river crossing operates at LOS E during the peak hour. The mainline segment from 23<sup>rd</sup> Avenue to John Deere Road operates at LOS D, as do the U.S. 67 entrance ramp and the River Road exit ramp. The mainline segments from River Drive to 23<sup>rd</sup> Avenue operate at LOS D, as do the ramps at U.S. 67 and River Drive. Also, the weaving sections between U.S. 6 and Middle Road, and Middle Road and Kimberly Road operate at LOS E.

## 1.4.2 Roadway Geometry

The existing roadway geometry and infrastructure condition were examined using current American Association of State Highway and Transportation Officials (AASHTO) guidelines and Iowa and Illinois DOT policies. Areas where the need for improvement is greatest were identified in order to provide a basis for defining future roadway requirements capable of meeting the transportation demand in the corridor.

Five primary geometric components were found to be contributing to the overall need for improvement within the study area, either individually or in combination with other components. Since the roadway was constructed, geometric standards have been updated to reflect improved knowledge of how roadway geometry may influence safety and travel performance.

- **Narrow lane and shoulder widths on the existing river-crossing structures and approaches.** The northbound (Illinois to Iowa) structure, which is the older of the two bridges, provides two 11.5-foot travel lanes with no shoulders. The southbound (Iowa to Illinois) structure provides two 12-foot travel lanes with no shoulders. These lane widths, combined with the lack of shoulders, result in the very close proximity of the railing/steel truss to the travel lanes. This contributes to uncomfortable driving conditions, creating a very tight tunnel-driving effect for motorists. In an effort to keep their vehicles away from the railing/steel truss, motorists maintain a greater shy distance; they veer away from the edge due to fear of coming too close, instead hugging the centerline between the two lanes. Additionally, the lack of shoulders does not provide for a recovery area for errant vehicles, a storage area where disabled vehicles can be removed from the flow of traffic, or space for a travel lane during routine bridge maintenance and inspection operations.
- **Reverse curves on the Illinois approach.** Reverse curves consist of a curve in one direction immediately followed by a curve in the opposite direction. The Illinois approach to the river crossing consists of a series of four horizontal curves (curves to the left or right), which in combination with vertical grades and closely spaced interchange ramps effectively reduce safe travel speed and driver sight distance.

- **Maximum vertical grades on both the Illinois and Iowa approaches.** The approach grades to the structure are currently at the maximum allowable grade on both sides of the river. On the Iowa side, the grade is 3.0 percent from approximately U.S. 67 to Kimberly Road. On the Illinois side, the maximum allowable grade is 4.0 percent from 12<sup>th</sup> Avenue to near 7<sup>th</sup> Avenue. These steep grades slow truck travel speeds, which in turn reduce the overall flow of traffic for all vehicle types.
- **Close interchange spacing.** The spacing between the 7<sup>th</sup> Avenue and River Drive interchanges (0.38 miles) and the spacing between the U.S. 67 and Kimberly Road interchanges (0.44 miles) are less than the design requirement of 0.75 miles. This results in a shortened length for safe merging and exiting maneuvers.
- **Short taper rates on ramps.** The ramps at U.S. 67 and Middle Road are short in length and too steep for efficient vehicle operations for traffic entering I-74 to accelerate to highway speeds from the ramp terminals or for traffic exiting I-74 to decelerate from highway speeds prior to the ramp terminals. These are particularly troublesome for trucks, which require greater lengths to accelerate and decelerate.

### 1.4.3 Safety

The combination of traffic characteristics and outdated roadway geometry results in unsafe conditions in sections of the I-74 corridor. Current roadway and shoulder widths as well as ramp and mainline geometry are factors contributing to higher than average accident rates. Other factors, such as traffic volumes and congestion, also contribute to the accident rates.

The number and rate of reportable accidents and fatalities are typically used to quantify highway safety. The expected crash rate for an urban freeway generally ranges between 1.2 and 1.4 crashes per million vehicle miles traveled. The crash rate in the downtown section of the I-74 corridor is notably higher than the national average range. The crash rates by location and direction of travel, which exceed the expected rate for an urban freeway, are shown in [Table 1-1, Crash Rates per Million Vehicle Miles by Direction of Travel](#) (see also [Figure 1-3, Crash Rates by Location](#), located at the end of Section 1). As can be seen from the table, northbound

TABLE 1-1  
Crash Rates per Million Vehicle Miles by Direction of Travel

Segment	Crash Rate	
	Northbound	Southbound
Downtown Moline	3.6	2.4
River crossing	2.0	1.8
Downtown Bettendorf	1.4	2.4

I-74 in downtown Moline experiences a crash rate three times higher than the national average. Two other locations, southbound downtown Moline and southbound downtown Bettendorf, both experience crash rates two times the national average. It should be noted that it is only in the downtown areas that the crash rate is higher than the national average.

A total of 449 crashes occurred within the study area during the analysis years. (Crash data were available for 1996–1998 in Illinois and for 1997–1999 in Iowa.) There were 173 crashes with reported injuries, and 276 crashes with property damage only. There were no fatalities

during the analysis years ([Figure 1-4, \*Crash Severity by Location\*](#), located at the end of Section 1).

The highest concentration of crashes generally occurred where traffic volumes are greatest and roadway geometry is older—at the river crossing and along the Illinois and Iowa approaches. The majority of crashes occurred during normal dry-surface conditions (more than 50 percent), and was split almost equally in both directions. About 20 percent of crashes happened during ice/snow and 12 percent during wet road conditions.

Predominant crash types include rear-end (42.0 percent), fixed-object (25.4 percent), and sideswipe (10.7 percent) ([Figure 1-5, \*Collision Type by Location\*](#), located at the end of Section 1). These types of accidents typify those expected where roadways are narrow, there is little area available for the recovery of errant vehicles, and where there is not adequate storage capacity along ramps to remove exiting vehicles from the mainline.

#### 1.4.4 Consistent Travel Times within the Corridor (Dependability of Travel)

An important project goal of the local governments is to improve the dependability of travel in the corridor. Dependable travel is evidenced by a facility that is open to traffic and provides a consistent travel time with smoothly flowing traffic. The I-74 bridges carry most of the commuters between Illinois and Iowa. This abundance of commuter travel on I-74, with its obsolete roadway geometry, contributes to the low LOS. The dependability of travel is aggravated by traffic incidents, or even routine maintenance activities, which cause lane closures and additional traffic backups. Dependability of travel would also be impacted by full facility closure during construction of an improved facility, as access to the downtown areas and consistent travel times would be compromised by construction activities. See [Section 1.4.7, \*Economic Development\*](#), for further information.

The need for dependable travel is based on easier commutes, dependable travel times for goods and services, and improved connections to other transportation modes. Improving the following characteristics would contribute to more dependable travel in the corridor by resulting in less frequent backups and erratic travel ([Figure 1-6, \*Design Issues\*](#), at the end of Section 1):

- Capacity along the mainline
- Geometry on both the bridges and the roadway (including ramps)
- Connections to the local roadway system

The I-74 corridor is a major vehicular travel corridor through the Quad Cities area, with an essential mission to move both goods and people across the Mississippi River. With trends in manufacturing moving toward just-in-time manufacturing processes, the dependability of travel times along major corridors becomes important.<sup>2</sup> In the case of the I-74 corridor, the dependable movement of goods is important not only for truck traffic, but also because I-74 provides connections to other modes of freight travel, such as air, rail, and barge.

Dependable travel through the corridor is complicated by incidents and routine roadway repairs. The narrow width of the bridges does not allow for maintaining smooth flow of traffic during an accident response or routine maintenance activity, necessitating that the bridge

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<sup>2</sup> Just-in-time manufacturing is a manufacturing process in which parts and supplies are delivered just before they are needed, rather than being warehoused onsite.



operate with only one lane of traffic. Furthermore, current connections to the local roadway system cause backups on the mainline that impact the flow of traffic through the corridor.

### 1.4.5 Transportation Connections

I-74 plays an important role in the local, regional, and national transportation network. Aside from I-74, three other interstate highways, five U.S. highways, ten state highways, three railroads, one commercial airport, 30 barge terminals, and one general aviation airport serve the Quad Cities region. In addition, a U.S. Customs Port of Entry and Foreign Trade Zone serve as economic entryways for the area. The roadway network also provides vehicular and non-motorized access to trails, transit, rail, river, air, and intermodal freight facilities. The following sections discuss the existing facilities in the Quad Cities and the role played by I-74 as an integral part of the transportation network.<sup>3</sup>

#### Interstate Highway Network

The Quad Cities area is served by a well-developed interstate network that accommodates both long distance, interstate traffic, and regional travel ([Figure 1-1, Location Map](#), located at the end of Section 1). This network provides the region with excellent interstate connections:

- I-80, providing connections east to Chicago and west to Des Moines
- I-280, forming a beltway around the south and west sides of the Quad Cities
- I-88, providing a second connection east to Chicago
- I-74, providing connections to the southeast through central Illinois and Indiana

The heaviest travel demand in the region is along the I-74 corridor, which carries a high volume of commuter traffic between Iowa and Illinois, and provides access for interstate traffic to the center of the Quad Cities region.

#### River-Crossing Locations

The RTP identified the region's bridges as the most important and restrictive characteristic of the area's transportation system. Five bridges provide highway access across the Mississippi River in the Quad Cities:

- I-280 Bridge
- Centennial Bridge
- Arsenal Bridge
- I-74 Bridge
- I-80 Bridge

Given the region's geography and land use characteristics, demand for access across the Mississippi River is high. The 1999 cumulative ADT across the Mississippi River totaled 150,300 VPD; the demand is forecasted to increase to 223,000 VPD by 2025.

Of the five current bridges crossing the Mississippi River, the Centennial, Arsenal, and I-74 bridges provide crossings within the more densely developed portions of the Quad Cities and are used predominantly by area commuters. However, because of its location and characteristics, the I-74 Bridge carries the largest volume of local traffic. Approximately 90

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<sup>3</sup> For more information on the transportation facilities in the Quad Cities region, refer to the *2025 Quad Cities Transportation Plan* (March 2001, amended July 2002).

percent of traffic on the I-74 Bridge is traffic that originates from or terminates in the local metropolitan area.

### Local Highway Accessibility

Convenient and efficient connections between I-74 and the adjacent local highway system are essential to providing effective transportation service to adjacent communities. The I-74 corridor is an important link to several major state routes and local streets, and ultimately to residential, retail, commercial, and entertainment centers in the region. The major intersecting and interchanging roads in the vicinity of I-74 are shown on [Figure 1-1, Location Map](#), located at the end of Section 1. The existing system is characterized by one-way streets in the riverfront area and connections to the interstate system with tight curves, ramps with short taper rates and steep grades, and insufficient capacity for the high traffic volume relying on these connections. Two major marked routes, U.S. 67 in Iowa and IL 92 in Illinois, do not have efficient access to I-74. U.S. 67 operates as a one-way pair along State Street and Grant Street in Bettendorf, with partial interchanges to I-74. Bettendorf's long-range plans suggest consolidating U.S. 67 into a two-way facility. On the Illinois side, IL 92 also forms a one-way pair along 4<sup>th</sup> Avenue and 6<sup>th</sup> Avenue. IL 92 does not currently interchange with I-74; however, an IL 92/I-74 interchange is a component of the proposed alternatives.

Since the opening of I-74 in 1970, land use along the I-74 corridor has changed dramatically, resulting in significant changes in the travel patterns in the region. These changing conditions have created an increase in traffic demand along the local system and its linkages to and from I-74. Most service interchanges have not been improved to efficiently accommodate changing travel patterns and growing travel demand in the region, and several interchanges do not provide direct and efficient access to the area's major marked routes. For that reason, this project includes proposed improvements to interchanges connecting with the local roadway system.

### Intermodal Relationships

The I-74 corridor is a central element of the regional transportation network, providing potential links to other modes of transportation for both freight and people. I-74 currently provides connection to five other modes of travel: air, rail, river/barge, transit, and bicycle/pedestrian.

**Air.** The Quad Cities area's commercial Quad City International Airport has direct access from I-74 on the Illinois side of the river.

The Davenport Municipal Airport, located along I-80, is a general-aviation airport serving the Quad Cities region.

**Rail.** Three freight rail companies operate in the Quad Cities: Iowa, Chicago and Eastern Railroad, Burlington Northern Santa Fe, and Iowa Interstate. The I-74 corridor crosses all three rail lines.

Currently, there is no passenger rail service; however, a major rail improvement proposed for the area is the implementation of passenger rail service between the Quad Cities and Chicago. Proposed station stops include Centre Station in Moline (2025 RTP, Chapter 4, p. 8).

**River/Barge.** Mississippi River traffic is an important component of the Quad Cities economy. Within the area, there are more than 30 barge terminals in operation and one barge fleet

service. Most river terminals in the Quad Cities, along with the Quad City Container terminal, are accessible by both rail and highway facilities (2025 RTP, Chapter 4, p. 9).

**Transit/Bicycle/Pedestrian.** Beyond employment access, transit is a crucial tool for managing special event travel. It is also a vital service for the elderly, youth, disabled, and economically disadvantaged residents of the area. Further, transit provides connections for cyclists and pedestrians to the region's trail network and water taxi service. MetroLINK provides bus transit services on the Illinois side. Davenport CitiBus operates bus services in Davenport. Bettendorf Transit provides bus services within Bettendorf; in fact, Bettendorf Transit operates a route via the I-74 Bridge to Centre Station in downtown Moline. The buses and the water taxi service are equipped with bicycle racks, which enhance the linkage between transit and the bicycle/pedestrian trail system. As the I-74 bridges are too narrow to accommodate bicycles and pedestrians, there is currently no trail access across the Mississippi River at this location for these modes. At this time, bicyclists must either use the bicycle racks on buses or on the water taxi in order to connect to the existing riverfront trail systems on both sides of the river. The other Mississippi River crossing alternative for bicyclists/pedestrians is to travel approximately 7.5 miles out of the way (round-trip to the Arsenal Bridge and back to the I-74 corridor) to cross at the Rock Island Arsenal Bridge.

The 2025 RTP describes the importance of bicycle/pedestrian transportation in the Quad Cities area, and outlines plans for enhancements and additions to the areas trail network. Currently several existing, separated corridor and shared access multipurpose trails exist, which are used for a variety of transportation purposes. This regional trail network will continue to connect other modes of transportation in order to make the entire transportation network more accessible. Trails already connect with recreation areas, the roadway network, and many transit routes.

With a full complement of other modes of travel available to the Quad Cities, the long-range transportation plan places an emphasis on enhancing the connections among the modes. Currently, all intermodal facilities are accessible from state or federal highways, of which the I-74 corridor is one of the most critical, given its proximity to other modes and desirable destinations, such as the airport or the riverfront.

For the Quad Cities, I-74 is one of the primary routes available for crossing the Mississippi River, and one that has allowed the Quad Cities to grow together and function as a metropolitan area. A well-integrated transportation network is considered crucial to maintaining economic growth, improving accessibility and mobility, expanding connectivity, and upgrading system efficiency.

#### 1.4.6 Infrastructure Condition

I-74 was constructed and opened to traffic in the early 1970s. With the exception of the Iowa-bound bridge over the Mississippi River, the I-74 pavement and bridges within the study area are more than 30 years old. The Iowa-bound bridge was constructed in 1935 and is now more than 65 years old.

The sufficiency rating is a numeric value developed by the FHWA. It ranges from 0 to 100 and is indicative of the bridge sufficiency to remain in service. A bridge with a sufficiency rating of 100 would represent an entirely sufficient bridge. Sufficiency ratings of the bridges along the I-74 corridor range from 42 to 98, with the Iowa-bound and Illinois-bound

Mississippi River bridges rated at 42 and 61, respectively, by the Iowa DOT (and as described previously, the Mississippi River bridges are functionally obsolete due to their design characteristics). The Iowa and Illinois DOTs have routinely repaired the I-74 pavement and bridges. However, portions of the roadway infrastructure may require major rehabilitation/reconstruction in the future as their quality diminishes.

Overall, the existing bridge structures along the study corridor are in good to fair condition with adequate inventory and operating load ratings. All structures have a satisfactory inventory load rating, with the exception of the following locations:

- I-74 westbound over Duck Creek and Recreational Trail
- I-74 under Lincoln Road

The operational rating of I-74 westbound over Duck Creek and Recreational Trail is high enough that the overall physical condition is adequate. At I-74 under Lincoln Road, the operational load rating is also less than desirable; however, the Iowa DOT deemed it marginally adequate for two-lane legal loads.

### 1.4.7 Economic Development

#### Consistency with Existing and Planned Land Use

As a metropolitan area with strong ties to manufacturing and agriculture, the Quad Cities has been focusing efforts on redeveloping and expanding its economic base to maintain its former strengths while incorporating new technologies and markets. Following the passage of the Economic Development Administration Reform Act in 1998, the Quad Cities was designated as an Economic Development District and began preparing a plan for economic development. The resulting plan was documented in a report by the Bi-State Regional Planning Commission entitled *2000 Comprehensive Economic Development Strategy*.

The report discussed the many economic strengths of the region. Among these were a number of major employment opportunities within the I-74 corridor, including John Deere, The Mark, the Isle of Capri Casino, and the Rock Island Arsenal. The *2000 Comprehensive Economic Development Strategy* also noted that the Quad Cities are strongly connected to major U.S. markets through all modes of transportation. The area has excellent interstate connections via I-80, I-88, I-280, and I-74.

Also, the Quad Cities have strong rail connections for freight movement, as discussed in the previous section, as well as 168 miles of riverfront along the Mississippi River with the infrastructure already in place to move freight.<sup>4</sup> Further, the Quad City International Airport offers daily passenger and freight service to major U.S. markets, including Chicago, St. Louis, Denver, Atlanta, New York, Los Angeles, and Minneapolis. The Davenport Municipal Airport also provides services for business aircraft and general aviation.

Altogether, the Quad Cities offer excellent connectivity to markets. The Bi-State Regional Planning Commission report also noted that the potential market of 36.5 million people within a 300-mile radius of the Quad Cities was the largest such market area between Chicago and St. Louis.

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<sup>4</sup> Bi-State Regional Commission. *Comprehensive Economic Development Strategy for the Bi-State Region*. (November 2002) p. 9.

Although the region has a number of strengths, including those listed above, the *2000 Comprehensive Economic Development Strategy* also discussed the challenges that lay before the region to attract new business. Two challenges in particular were viewed as hindering economic development or redevelopment within the Quad Cities:

- In many parts of the region, the existing transportation infrastructure is not adequate to support either new business or business expansion.
- With the large number of employees who commute across the river, there is an “urgent need” for additional bridge capacity.

Both Bettendorf and Moline have invested in the revitalization of their downtown core areas and continue the planning for expanded investment.

The Bettendorf city council has as one of its top priorities the redevelopment of the city’s riverfront/downtown area. Further, Bettendorf has recently completed a conceptual plan for its downtown area. Among the critical elements of the plan is a new roadway circulation pattern to better accommodate the proposed land use changes, as well as auto access, and access for cyclists and pedestrians. One of the purposes of the proposed improvements to the I-74 Corridor is to support Bettendorf’s downtown redevelopment plan by offering efficient access to the riverside area.

Moline has and continues to invest extensive time and effort into downtown revitalization efforts. The Bass Street Landing is a \$30- to \$40-million mixed-use development at the base of 17<sup>th</sup> Street and River Drive, consisting of a large commercial structure and condominiums. So far, this project resulted in nearly \$100 million in private investment and the creation of more than 300 new jobs. Other downtown Moline projects include The Mark Civic Center, the John Deere Pavilion, WaterMark Corners, the Claxton Block, and the Heart of America building. Further redevelopment opportunities are being considered east of I-74 along the riverfront.

With a commitment to redevelop the riverfronts on both the Illinois and Iowa sides, improved circulation and reliable travel service through the heart of the Quad Cities is one of the key pieces needed to bring the plan to fruition. The current highway infrastructure is a limiting factor in moving commuters to potential employment centers. Similarly, it impacts the ability to move goods to other parts of the interstate system or to other modes, such as the airport. The situation is compounded by the unreliable nature of travel across the river due to congestion. Finally, the existing access from I-74 to the riverfront areas in Bettendorf and Moline restricts the ability of the region to redevelop and expand the special events and entertainment complexes that exist in both cities.

### Maintaining Access During Construction

Given the economic importance of Moline’s and Bettendorf’s downtown areas, the access and reliability problems already created by the existing system, and the limited availability of viable alternative river-crossing routes, it is important to maintain access to these downtown areas during construction of any proposed improvements. As a result of input from the I-74 Project Advisory Committee and the Illinois and Iowa DOTs, it was determined that maintaining two lanes of traffic in each direction along I-74, even during construction, is one of the conditions that must be met for an alternative to be considered reasonable.

## 1.5 Purpose and Need Summary

The purpose of the proposed improvements is to improve capacity, travel reliability, and safety along I-74 between 23<sup>rd</sup> Avenue in Moline and 53<sup>rd</sup> Street in Davenport, and to provide consistency with local land use planning goals.

The need for the proposed improvements to the I-74 corridor is based on a combination of factors related to providing better transportation service and sustaining economic development. In particular, the proposed action is intended to meet the following needs:

- Traffic demand and service
- Roadway geometry
- Safety considerations
- Dependability of travel
- Transportation connections
- Infrastructure condition
- Economic development

Current travel performance reflects the combination of the older geometry and condition of the existing facility combined with the high traffic volumes along I-74 in the project corridor. In 2000, I-74 carried 74,000 VPD near the river; in 2002, the number of vehicles per day increased to 77,800. Near the river crossing, the mainline of I-74 operated at LOS E in 2000 during the peak hour and continues to operate at LOS E, but at the lower end of the threshold, near LOS F. As a result, motorists in this area experience stop-and-go conditions and backups at interchange ramps. At this LOS, the dependability of travel through the corridor is impaired, resulting in unreliable connections to other modes of transportation in the Quad Cities. As traffic volumes increase over time, these conditions will only worsen.

Notable elements of I-74 study corridor geometry that contribute to the safety concerns include: narrow lane and shoulder widths on the existing river-crossing structures and approaches; a series of reverse curves with tight radii (curves) on the Illinois approach to the river bridge; maximum vertical grades on both the Illinois and Iowa approaches; close interchange spacing; and shorter taper rates and steeper grades on ramps. In addition, an examination of the age and condition of the existing facility reveals that it is deteriorating, and major reconstruction or rehabilitation may be required within the time frame for the construction of the proposed improvements.

The Quad Cities have strong ties to manufacturing and agriculture, a good location in the Midwest market, and good access to other modes of travel for moving freight and goods, including rail, air, and barge. Bettendorf and Moline have also invested heavily in developing and redeveloping their downtown areas, through which I-74 travels. Improving the performance of I-74 through the project corridor is not only congruent with local land use plans, but is important to maintaining and enhancing the economic vitality of the riverfront areas, a fact that was noted in the *2000 Comprehensive Economic Development Strategy* prepared for the metropolitan region.

Together, these needs form the basis for proposed improvements to the I-74 corridor. The alternatives developed to meet these needs are discussed in [Section 2, Alternatives](#), of this Draft Environmental Impact Statement (EIS).