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## APPENDIX D

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**Appendix D.1**

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**The Ohio River Major Investment Study  
Introduction and Executive Summary  
"ORMIS"**

## INTRODUCTION AND EXECUTIVE SUMMARY

The Ohio River Major Investment Study (ORMIS) was initiated to address the problem of current and future travel mobility across the Ohio River between Kentucky and Indiana in the Louisville region. This issue had been addressed in several prior studies, without resolution. In Fall, 1994 an impasse was reached on the most recent prior study, which had begun in 1992. On October 28, 1993, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) published a new rule on statewide and metropolitan planning that contained requirements for Major Investment Studies. A Major Investment Study (MIS) is required by the Federal government when the need for a major metropolitan transportation investment is identified, and Federal funds are potentially involved. This was determined to be the case by the region's transportation agencies, triggering the initiation of the ORMIS. The ORMIS is a supporting function in the process of developing the Kentuckiana region long range transportation plan.

The purpose of the ORMIS was to bring the region's stakeholders together through a process of defining and analyzing possible alternatives to result in a preferred strategy for investment in a solution. The study was conducted under the sponsorship of the Kentuckiana Regional Planning and Development Agency (KIPDA), the Metropolitan Planning Organization (MPO) for the region. An advisory committee (the Ohio River Major Investment Study Committee) was established to guide the study. The ORMIS Committee was appointed by and responsible to the KIPDA Transportation Policy Committee (TPC), the official decision-making body for the ORMIS.

The Federal rules on Major Investment Studies allow agencies to conduct MISs either in conjunction with or prior to an Environmental Impact Statement (EIS) or Environmental Assessment (EA) prepared under the National Environmental Policy Act (NEPA). The preparation of an MIS without an EIS or EA is classified by the Federal government as an "Option 1" MIS. The ORMIS was an Option 1 MIS. However, many of the issues addressed in an EIS or EA were also addressed by the ORMIS and should be pertinent to an EIS or EA performed subsequent to the ORMIS. The objective of the ORMIS was to evaluate alternatives at a level of detail appropriate for making decisions on the design concept and scope of an improvement or improvements to mobility across the Ohio River in the Kentuckiana region. The Environmental Protection Agency's Conformity Regulation pursuant to the 1990 Clean Air Act Amendments defines design concept and scope as:

- Design Concept - the type of facility identified (i.e. freeway, expressway, reserved right-of-way transit)
- Scope - design aspects that will affect the proposed facility's impact on regional emissions usually as they relate to vehicle- or person-carrying capacity and control (i.e., number of lanes or tracks, length of project, signalization, etc.)

Design concept and scope also refers to the general location of the facility. (Source: *MIS Desk Reference*, FTA and FHWA, August 1996). The evaluation of alternatives in the ORMIS was undertaken in a manner consistent with the objective of determining the design concept and scope. This included extensive analysis of traffic, environmental, community and economic factors. It was recognized that further environmental analysis would need to be conducted in an EIS or EA to identify

specific measures to mitigate certain impacts and to fine-tune any recommended alignments so as to minimize impacts and construction costs.

The ORMIS Committee and the TPC selected JHK & Associates as the consultant to carry out the technical and consensus-building activities of the project. JHK staff were augmented by KIPDA staff and four subconsultants: Hickling, Lewis, Brod, Inc., Schimpeler Associates, T.Y. Lin International, and Wallace, Roberts & Todd. The involvement of the public at many stages was a major thrust of the study. Specific public involvement activities are described in Chapter 2. The public relations firm, Creative Alliance, assisted KIPDA with certain activities related to public involvement and the media. KIPDA, the JHK team of consultants, and Creative Alliance are referred to as the “study team.” The decision-making process involved the ORMIS Committee acting in an advisory capacity by making recommendations to the TPC, with the TPC making the legally binding decisions.

The ORMIS process was concluded on December 19, 1996 with a unanimous vote of the Transportation Policy Committee of KIPDA to endorse the recommendation of the ORMIS Committee. The major events leading up to this decision are identified in Exhibit ES-1. A description of the public workshops and information initiatives is provided in Chapter 2.

**Exhibit ES-1. Major Events in the ORMIS Process**

Date	Event
December 14, 1994	ORMIS Committee members approved by TPC
May 7, 1995	JHK & Associates selected by the ORMIS Committee as consultant for the MIS
October 7, 1995	First ORMIS Committee meeting with consultant
March 25, 1996	Evaluation criteria recommended for TPC approval by the ORMIS Committee
April 5, 1996	Purpose and Need Statement recommended for TPC approval by the ORMIS Committee
April 25, 1996	Evaluation Criteria and Purpose and Need Statement approved by the TPC
May 29, 1996	Level 1 Alternatives identified by the ORMIS Committee
August 21, 1996	Level 2 Alternatives recommended for TPC approval by the ORMIS Committee
August 22, 1996	Level 2 Alternatives approved by the TPC
November 18, 1996	Recommendation of preferred investment strategy made by JHK & Associates
December 2, 1996	Recommendation of preferred investment strategy recommended for TPC approval by ORMIS Committee, based on JHK recommendation, with amendments
December 19, 1996	ORMIS Committee recommendation of preferred investment strategy approved by the TPC

The Federal government provides substantial flexibility to state, regional, and local agencies regarding how an MIS is to be conducted. The intent, however, is that it be a cooperative process among agencies and the public, with the consideration of all modes of travel and a wide range of potential impacts. Consequently, the ORMIS Committee designed an open, participatory process with substantial agency and public involvement.

In general, the ORMIS approach involved these basic steps:

1. Identify specific transportation, environmental, and community issues to be addressed (Purpose and Need Statement)

2. Develop a two-level evaluation process (Levels 1 and 2)
3. Identify a range of potential solutions
4. Conduct general analysis at Level 1 to screen potential solutions to yield a smaller set of strategies or alternatives likely to address the identified issues in the Purpose and Need Statement
5. Conduct more detailed, comparative analysis at Level 2 on the set of more promising strategies or alternatives
6. Develop and select a preferred investment strategy or strategies

The level of evaluation detail was designed to be appropriate to the decisions to be made, yet sufficient to distinguish between alternative options or strategies. The ORMIS allowed the general public and key decision-makers to evaluate the overall effectiveness and cost-effectiveness of alternative investment strategies.

The first level evaluation (Level 1) was used to screen six preliminary strategies or alternatives (some with several alignment variations), yielding several of the more promising final strategies or alternatives for evaluation at the second level. The No Build/Base Condition alternative was carried through the entire evaluation process.

Six sessions of public workshops (24 meetings of approximately 1.5 hours each), including a live, two-hour town hall meeting on WHAS TV, were held to obtain input from the public. Extensive technical analysis was conducted, covering the areas of transportation, economics, environmental impacts and community impacts. The process was supported by multiple field visits, 19 meetings with the ORMIS Committee, and regular interaction with the TPC. The dates and purposes of the public workshops are identified in Exhibit ES-2. Over the course of the ORMIS, there were over 220 items of information about the project in local newspapers. This included 117 general news articles, 23 editorials, and 22 meeting announcements, reflecting a high level of interest in and awareness of the project by the media and the public.

### **The Purpose and Need Statement**

An extensive Purpose and Need Statement was prepared by JHK and approved by the ORMIS Committee and the TPC. The Purpose and Need Statement documented existing problems in considerable detail and provided background data that could be applied to the remainder of the study. The comments from the public at the workshops on December 11 and 14, 1995 were very important considerations in the construction of the Purpose and Need Statement. Problems were identified at those workshops through interaction in small group discussions and through written suggestions turned in at the end of each session on individual comment cards, providing several mechanisms for obtaining public input. Approximately 315 citizens attended this initial set of workshops. All comments were tabulated and summarized to provide specific input to the construction of the Purpose and Need Statement. The key points of the Purpose and Need Statement include:

- Currently observed high levels of traffic congestion and delay during peak commuting hours at ramp merge and diverge areas in Spaghetti Junction (the I-64 / I-65 / I-71 interchange complex), with these delays negatively impacting all traffic movements, including those made by commuters, buses, trucks, shoppers, and visitors.

**Exhibit ES-2. Public Workshops Conducted During the ORMIS Process**

<b>Date</b>	<b>Locations</b>	<b>Purpose</b>
<ul style="list-style-type: none"> <li>• Dec 11, 1995</li> <li>• Dec. 14, 1995 <i>(Evenings, 5:30 and 7:30)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Jeffersonville High School</li> <li>• Louisville Downtown Convention Center</li> </ul>	<ol style="list-style-type: none"> <li>1. Description of overall study process, ORMIS mission, public role and participation opportunities</li> <li>2. To gather as many ideas as possible on what the key issues and concerns (not solutions) regarding cross-river travel.</li> </ol>
<ul style="list-style-type: none"> <li>• Feb. 26, 1996</li> <li>• Feb. 27, 1996 <i>(Evenings, 5:30 and 7:30)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Ramada Inn, Kentucky</li> <li>• Holiday Inn, Indiana</li> </ul>	<ol style="list-style-type: none"> <li>1. Review and comment on the Draft Purpose and Need Statement</li> <li>2. Review of the preliminary evaluation criteria and process</li> </ol>
<ul style="list-style-type: none"> <li>• April 17, 1996</li> <li>• April 18, 1996 <i>(Mid-day 11:30 and Evenings 5:30 and 7:30)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Kentucky Fair and Expo Convention Center</li> </ul>	<ol style="list-style-type: none"> <li>1. To use the major findings of the Purpose and Need (P&amp;N) Statement as a basis for generating solution ideas regarding cross-river travel.</li> </ol>
<ul style="list-style-type: none"> <li>• July 23, 1996</li> <li>• July 24, 1996 <i>(Mid-day 11:30 and Evenings 5:30 and 7:30)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Ramada Inn, Jeffersonville</li> <li>• Ramada Inn, Louisville</li> </ul>	<ol style="list-style-type: none"> <li>1. To review the Level 1 analysis and findings for the six alternatives.</li> <li>2. To solicit comments for the ORMIS Committee in their deliberations to identify the more promising alternatives.</li> </ol>
<ul style="list-style-type: none"> <li>• October 3, 1996 <i>(8:00 p.m.)</i></li> </ul>	<ul style="list-style-type: none"> <li>• WHAS-TV Studios, Louisville</li> </ul>	<ol style="list-style-type: none"> <li>1. Live Town Hall Meeting Format to Review Project Findings and Analysis To Date</li> </ol>
<ul style="list-style-type: none"> <li>• Nov. 19, 1996</li> <li>• Nov 20, 1996 <i>(Mid-day 11:00 and Evenings 5:00 and 7:30)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Downtown Convention Center</li> <li>• UAW Hall 862, Louisville</li> <li>• Ramada Inn, Jeffersonville</li> <li>• Jeffersonville High School</li> </ul>	<ol style="list-style-type: none"> <li>1. To review the Level 2 analysis and findings for the four alternatives.</li> <li>2. To solicit comments for the ORMIS Committee in their deliberations to identify the preferred alternative.</li> </ol>

- High levels of delay during commuting hours on the George Rogers Clark Memorial Bridge (U.S. Route 31) southbound in the AM peak period and on the northbound approaches to the bridge in the PM peak period, due to constraints at signalized intersections in downtown Louisville.
- Delays throughout much of the day to commercial vehicle traffic crossing the Ohio River via the Kennedy Bridge (I-65) and its approach routes.
- Annual vehicular accident rates more than double the typical Kentucky statewide and regional averages for interstate highways and ramps on the mainline sections and interchange ramps on the portions of I-64, I-65, and I-71 near the downtown Louisville area.
- Traffic accidents and incidents, including infrequent hazardous materials incidents, that periodically close one or more lanes on the existing Ohio River bridges or the ramps leading to the bridges, causing major access problems.
- Difficulty for access by emergency vehicles to service incidents on the Kennedy Bridge (I-65) due to geometric limitations on each side of the bridge.

- Historical traffic volume growth on I-65 that is likely to exceed the capacity of the Kennedy Bridge shortly after the Year 2000.
- Current air quality non-attainment for ozone in the study area and the need to minimize the creation of carbon monoxide hot-spots.
- Economic costs incurred due to excessive delays (both normally occurring delays and delays due to traffic incidents) and excessive numbers of accidents occurring on roadways in the vicinity of the Kennedy Bridge.

Need for the transportation system to support various regional economic development objectives.

### **Evaluation Criteria**

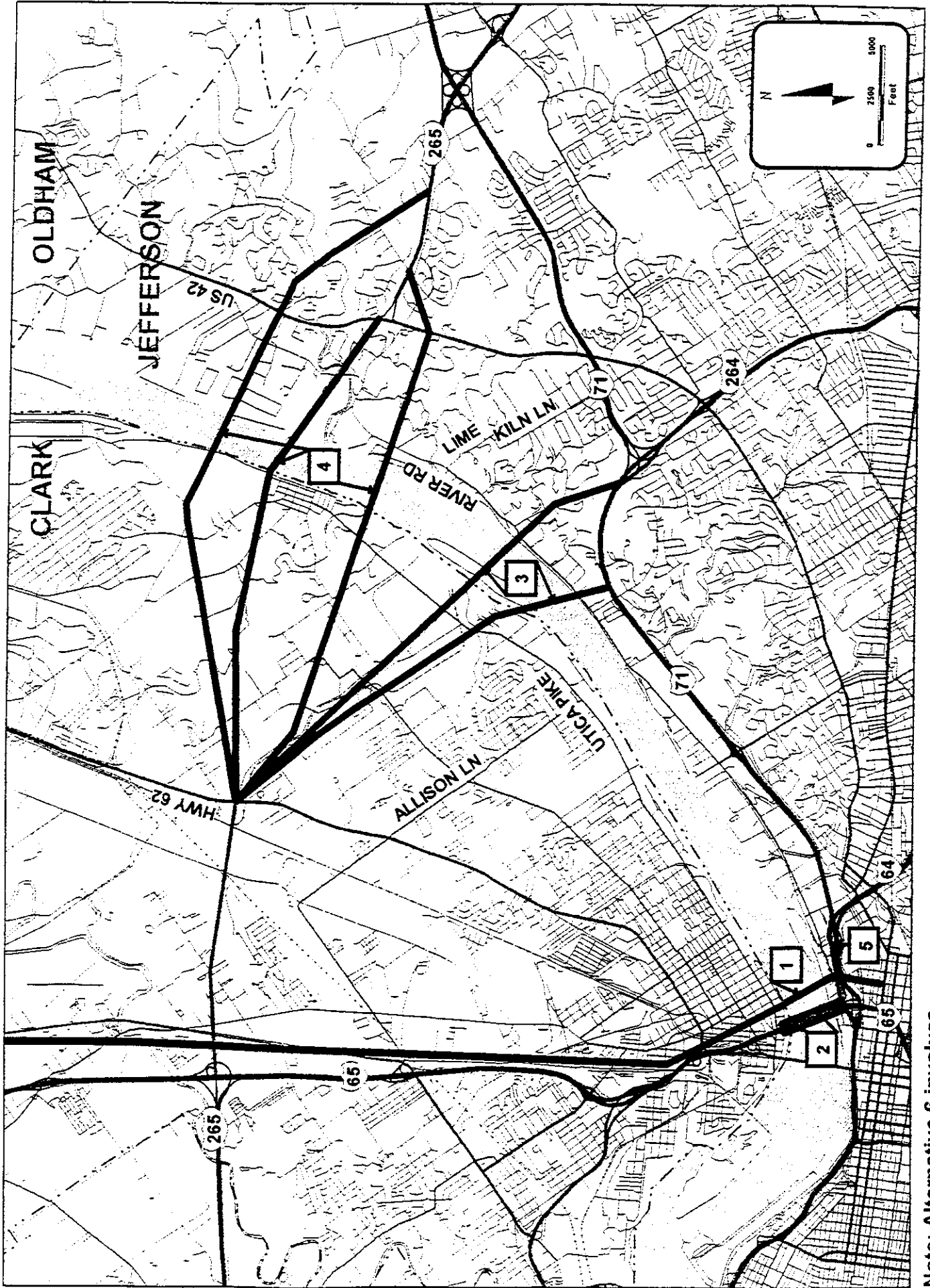
Approximately 40 criteria were established to use as the basis for evaluating the alternatives. Most were used in both the Level 1 and Level 2 evaluation. Several were used only for the Level 2 evaluation. Some were quantitative in nature, while others were more qualitative. The criteria include (grouped by category):

- Transportation criteria: Vehicle miles of travel (VMT), vehicle hours of travel (VHT), average speed, level of service (volume/capacity ratios), safety, transport of hazardous materials, incident-related delay, mode split (trips by transit), and expected construction impacts.
- Environmental criteria: Air quality, noise, water resources/aquatic ecosystems, wetlands, floodplains, navigation, terrestrial ecosystems, threatened or endangered species, cultural resources - historic sites and districts, archaeological resources, publicly-owned parks, previously identified hazardous waste sites, energy consumption, and geology and mineral resources.
- Socio-economic and community development criteria: Regional employment, regional income, taxation, consistency with approved plans, displacements and relocations for businesses and dwellings, community character and cohesion, visual setting, and farmlands.
- Cost-effectiveness/financial feasibility criteria: Capital cost, annualized operating and maintenance cost, local revenue sources, and benefit-cost ratio or net present value.

### **Level 1 and Level 2 Alternatives**

Following extensive discussions with the ORMIS Committee and the public, the following alternatives were selected for analysis under the Level 1 phase of the evaluation, as illustrated in Exhibit ES-3:

# Location of ORMIS Level 1 Alternatives



Note: Alternative 6 involves multiple locations.

Exhibit ES-3

KIPDA  
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- Alternative 1: A light rail transit line between downtown Louisville and Sellersburg, crossing the river on the abandoned Big Four Bridge.
- Alternative 2: A new bridge across the Ohio River immediately adjacent and parallel to the existing I-65 (Kennedy) bridge, plus a full reconstruction of Spaghetti Junction. The new bridge would carry traffic in one direction, while the existing bridge would carry traffic in the other direction. Options were considered that were either upstream or downstream of the existing bridge.
- Alternative 3 (Near East Bridge): A new bridge across the Ohio River connecting I-71 just south of I-264 on the Kentucky side with Route 265 at Route 62 on the Indiana side. Two possible alignments (northern and southern) were identified.
- Alternative 4 (East End Bridge): A new bridge across the Ohio River just north or south of Utica, connecting existing Route 841/265 (Snyder Freeway) on the Kentucky side with Route 265/Route 62 on the Indiana side. Three possible alignments were identified (northern, middle, and southern).
- Alternative 5: A reversible lane on the existing Kennedy bridge, plus a partial reconstruction of Spaghetti Junction.
- Alternative 6: Various transportation efficiency improvements, including improved bus service across the river, park-and-ride lots, additional traffic management improvements, incident management improvements, and other measures to reduce traffic demand.

Based on the Level 1 analysis, the ORMIS Committee recommended the following alternatives for evaluation in Level 2, as illustrated in Exhibit ES-4:

- Alternative A: A two-bridge option that includes full reconstruction of Spaghetti Junction, a new I-65 bridge parallel to the Kennedy Bridge, a new bridge connecting existing Route 841/265 on the Kentucky side with Route 265/Route 62 on the Indiana side, and several efficiency improvements from Level 1, Alternative 6.
- Alternative B: Full reconstruction of Spaghetti Junction, a new I-65 bridge parallel to the Kennedy Bridge, and several efficiency improvements from Level 1, Alternative 6.
- Alternative C: Partial reconstruction of Spaghetti Junction, a new bridge connecting existing Route 841/265 on the Kentucky side with Route 265/Route 62 on the Indiana side, and several efficiency improvements from Level 1, Alternative 6.
- Alternative D: Light rail transit between downtown Louisville and Sellersburg, possibly to be combined with other alternatives.

Throughout the ORMIS Report, the term “alternative” will be used to identify the nature of the proposed improvements and the general corridor. The term “alignment” will be used to identify the more detailed

# ORMIS Level - Alternatives

## ALTERNATIVE A

A two bridge option that includes full reconstruction of Spaghetti Junction, a new I-65 bridge parallel to the Kennedy Bridge and a new bridge from I-265/State Road 62 in Indiana to the Snyder Freeway in Kentucky.



## ALTERNATIVE B

An option that includes full reconstruction of Spaghetti Junction, and a new I-65 bridge parallel to the Kennedy Bridge (upstream or downstream).



## ALTERNATIVE C

An option that includes multi-stage reconstruction of Spaghetti Junction, and a new bridge from I-265/State Road 62 in Indiana to the Snyder Freeway in Kentucky.



## ALTERNATIVE D

Light rail transit between downtown Louisville and Sellersburg. This option possibly will be combined with the other alternatives as part of a comprehensive set of improvements.



placement of a possible transportation facility. However, exact alignments (i.e. within a few feet of an ultimate facility location) cannot be identified until preliminary engineering work is conducted in conjunction with a subsequent Environmental Impact Statement (EIS).

### **Preferred Investment Strategy**

Following the analysis of the Level 2 alternatives, JHK made a recommendation for the preferred investment strategy incorporating the following four elements: the two-bridge solution, Alternative A; bus-oriented transit improvements; short-term traffic operational improvements; and a regional financial summit to deal with funding needs. As part of the two-bridge solution, the middle alignment was recommended for the East End Bridge, and the upstream alignment was recommended for the Downtown Bridge. Specific improvements for promoting transit and other alternative modes of travel also were recommended, supporting the intent of the region's long range transportation plan and the Federal Intermodal Surface Transportation Efficiency Act of 1991.

These recommendations are supported by the transportation and economic analyses. The East End Bridge provides a new route across the river and produces the most significant reduction in vehicle delay of the two bridge locations. The Downtown Bridge and Spaghetti Junction improvements most directly address the congestion and safety problems at the critical location where I-65, I-71, and I-64 converge near downtown Louisville. The transit improvements promote the reduction of travel demand across the river and improvement in air quality. Together, these improvements provide greater than a two-to-one return on the investment. An estimated timeline was identified by JHK that indicated possible completion of an east end bridge by 2008 and full reconstruction of Spaghetti Junction and a new downtown bridge by 2018. JHK recommended that the region proceed with both projects simultaneously. Avenues for future further investigation of light rail on the Indiana side were also suggested, even though light rail was not recommended as part of the investment strategy.

The ORMIS Committee refined the JHK recommendation through a series of amendments (listed in Chapter 6) and submitted the recommendation to the TPC. The TPC voted 19-0 to approve the ORMIS Committee recommendation. The Kentucky Transportation Cabinet (KTC) and the Indiana Department of Transportation (INDOT), along with other interested agencies are now in the process of determining the next steps.

### **Organization of the ORMIS Report**

The ORMIS Report is organized into the following sections:

- Chapter 1 - Purpose and Need for Action: An overview of the existing conditions relating to river-crossing travel, and identification of the problems and needs that make action necessary.
- Chapter 2 - Alternatives Considered: A description of the alternatives and reasons for elimination of those alternatives not considered further.
- Chapter 3 - Affected Environment: A description of the areas along the corridors being examined from the perspective of existing environmental resources and concerns.

- Chapter 4 - Evaluation of Level 1 Alternatives: A presentation of the analysis and conclusions for the six alternatives examined in the Level 1 evaluation phase of the ORMIS.
- Chapter 5 - Evaluation of Level 2 Alternatives: A presentation of the analysis and conclusions for the four alternatives examined in the Level 2 evaluation phase of the ORMIS.
- Chapter 6 - Preferred Investment Strategy: A description of the recommended preferred investment strategy and rationale for that recommendation.

The report also contains an extensive amount of appendix material. This material is included to provide as complete a record as possible of the analysis, events, interpretation, questions, and answers that arose during the course of the ORMIS. Some material, such as all the handouts and information at the public work sessions, was too extensive to include as an appendix and is available for review at KIPDA offices. Additional questions can be addressed to the Kentuckiana Regional Planning and Development Agency at 502-266-6084.