

February 1997

# *FORT WASHINGTON WAY*

## *Subcorridor Major Investment Study*

### **MAJOR INVESTMENT STUDY REPORT**

Prepared for:

*OKI* *Ohio-Kentucky-Indiana  
Regional Council of Governments*

Prepared by:

Parsons Brinckerhoff Quade & Douglas, Inc.

In Association with:

Balke Engineers

Burgess & Niple, Ltd.

BRW Inc.

Hogan, Nolan & Stites, Inc.

KPMG Peat Marwick LLP.

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## **S.0 EXECUTIVE SUMMARY**

### **S.1 INTRODUCTION**

The purpose of this report is to document the Major Investment Study (MIS) work and products prepared during the course of the Fort Washington Way Subcorridor Study. A second purpose is to summarize in a single document, the major elements and analysis of the Fort Washington Way Subcorridor Study in support of a recommended alternative which will be included in subsequent Transportation Improvement Program (TIP) documents.

The analysis of Fort Washington Way was undertaken to focus on solutions for both the transportation and community issues related to Fort Washington Way. The Fort Washington Way Subcorridor Study evaluated the need for and effects (benefits, impacts, and costs) of transportation improvement options. This study provides a basis upon which decision-makers will decide to initiate more detailed studies on preferred alternative.

Fort Washington Way is a subcorridor within the I-71 Corridor Transportation Study MIS. However, the study has been conducted using a separate process from the I-71 Corridor Study, but concurrently with and mindful of the I-71 Corridor Study to allow for timely decisions on both studies. Both studies are being conducted by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), the Metropolitan Planning Organization (MPO) for the Cincinnati metropolitan area.

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### **S.2 PROBLEM STATEMENT**

Fort Washington Way, as a result of the historical development/location, increased travel demands and current roadway standards, presents both transportation and community issues, which need to be addressed.

#### **S.2.1 Transportation Issues**

Fort Washington Way does not meet current geometric standards. Specific problem areas are:

- Lack of lane continuity,
- Inadequate weaving distances,
- Inadequate access spacing,
- Access design of left entrances and exits do not meet standards, and
- Inadequate driver decision distance.

All of which compromise safety.

Fort Washington Way no longer serves travel demands because:

- The facility is overly complex. Drivers face too many choices.

- It does not provide well-defined access by motor vehicles, bicycles, and pedestrians to and from Cincinnati CBD, the riverfronts, and the bridges into northern Kentucky the relate to Fort Washington Way (i.e., Central and Roebling Suspension bridges).
- The multiple functions coexisting on Fort Washington Way have compromised its ability to serve the through-traffic function of I-71.
- The Brent Spence Bridge is operating over capacity.
- The Central Bridge is underutilized.
- Interchanges are inadequate.

In addition, the design life of the pavement has been exceeded.

These transportation issues and potential improvements were considered in relation to the I-71 Corridor Transportation Study, as well as coordinated with the Eastern Corridor Study.

### **S.2.2 Community Issues**

The community issues can be summarized as follows:

- Fort Washington Way, as it is currently designed, is a visual and physical barrier between Cincinnati CBD and the riverfront.
- Inadequate motor vehicle, bicycle, and pedestrian access or linkages between Cincinnati CBD and the riverfront are due, in part, to Fort Washington Way.
- Consideration should be given to other transportation modes, particularly mass transit, to serve the full spectrum of community transportation needs.
- Fort Washington Way's location and design constrains the ability to more fully develop the Cincinnati and Kentucky riverfronts.
- Too much land is devoted to transportation in proportion to available land.

## **S.3 ALTERNATIVES CONSIDERED**

Alternative concepts were developed. Through an intensive process, the Fort Washington Way Subcorridor Study Subcommittee and the I-71 Corridor Transportation Study Oversight Committee refined the alternatives. Five alternatives were carried forward for detailed study and evaluation after screening and evaluation. These alternatives are summarized below and described in greater detail in Section 5.0 of this document.

<b><u>ALTERNATIVE</u></b>	<b><u>GENERAL ASSUMPTIONS</u></b>
1. No Build	Full depth pavement rehabilitation and safety upgrades.
1A. Transportation System Management (TSM)	No Build plus TSM Alternative from I-71 Corridor Transportation Study.
2. Minimum Build	TSM Improvements of Alternative 1A plus relocate Pete Rose Way 150 feet to the north and widening between Race and Main Streets. Fort Washington is maintained as U.S. 50.

- |   |  |
|---|--|
| 3C. Retain I-71 and U.S. 50 in Narrowed Fort Washington Way                     | TSM Improvements of Alternative 1A plus relocate Pete Rose Way 250 feet to the north and widening between Race and Main Streets, I-71 and U.S. 50 maintained in Fort Washington Way. Reclaim 100 feet of land.   |
| 5. Retain I-71 and U.S. 50 in Narrowed Fort Washington Way with Expanded Access | TSM Improvements of Alternative 1A plus , I-71 and U.S. 50 maintained in Fort Washington Way, new Second and Third Streets create a one-way couplet pair, improved links to I-471 and U.S. 50 on the east and improved links to I-75 and the Clay Wade Bailey Bridge on the West. Reclaim 200 to 300 feet of land. |

## **S.4 TRAFFIC AND TRANSPORTATION CONSIDERATIONS**

Traffic and transportation effects of the various alternatives have been attributed to either regional or local impacts. This assisted in later trade-off analysis and provided for easier evaluation of how each alternative meets specific project goals, purpose and needs. Conclusions drawn from the "Travel Demand Forecasting Final Report" (February 3, 1997) and the "Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997) indicated the following regional and local traffic conclusions.

### **S.4.1 Regional Impacts**

Freeway segment capacity analysis indicates that the traffic impact differences between alternatives on the adjacent regional freeway system are minor ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

### **S.4.1 Local Area Impacts**

Existing Fort Washington Way includes left-side on and off ramps and a major weaving movement caused by US 50 joining I-71 on the left and departing on the right in both directions. The weaving would not change under Alternatives 1, 1A and 2 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

The weaving analysis for Fort Washington Way corridor shows that Alternatives 1A and 3C would result in unacceptable operations along both directions of Fort Washington Way (I-71/US 50) during both the AM and PM peak hours in 2020. The same levels of operation would occur under Alternative 1 or 2 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

The weaving analysis of the Fort Washington Way corridor indicates that under Alternative 5 both the eastbound and the westbound segments would operate well (LOS B) for both the AM and PM peak hours in 2020 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

Freeway segment capacity analysis indicates that Alternative 5 would result in the least congestion within Fort Washington Way. Alternative 3C would result in the highest level of

congestion within Fort Washington Way ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

The intersection capacity analysis of the key access locations into downtown Cincinnati shows that the demand volume during the 2020 AM (inbound) peak hour is expected to be significantly higher than the PM (outbound) peak hour ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

The intersection analysis of the 2020 AM peak hour indicates that the Central Avenue/Fifth Street intersection would operate over-capacity under Alternative 5. However, ample reserve capacity should be available for incoming eastbound US 50 and southbound I-75 vehicles via the proposed ramp to Second Street ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

Under Alternative 5, the intersection analysis of the 2020 AM peak hour indicates that the Main Street/Third Street intersection would operate over-capacity. However, there would be numerous options for diverting excess traffic away from this intersection ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997).

## **S.5 SOCIOECONOMIC AND ENVIRONMENTAL CONSIDERATIONS**

There are no significant differences among the build alternatives for environmental impacts. None of the alternatives are expected to result in significant adverse social, economic or environmental impact. No "fatal flaws" in terms of environmental impact have been identified for any of the alternatives. Alternative 5 would displace two small parks adjacent to the south side of Third Street; therefore, subsequent requirements would include completion and approval of a Section 4(f) evaluation.

Alternatives 2, 3C and 5 have potential impacts on historic resources and sites located north of Fort Washington Way and the Roebling Suspension Bridge itself. None of the alternatives would directly impact any of these historic resources, however more detailed study and coordination with the Ohio and Kentucky State Historic Preservation Offices may reveal adverse indirect impacts, such as visual intrusion, that could require avoidance or mitigation.

## **S.6 CAPITAL COST ESTIMATES**

Capital construction cost estimates range from a low of \$26 million to a high of approximately \$96 million. Alternative 5 would have the highest costs due to the most extensive set of optional ramps and land reclamation. Base costs include engineering, administration, construction and equipment purchases as well as contingencies for the primary corridor work under each alternative. Optional additional ramp costs are included for the three build alternatives. Table S-1 provides component and total cost estimates for each alternative.

**Table S-1**  
**Summary of the Estimated Capital Costs (1996 Dollars)**

Alternative		Base Costs	Optional Ramp Costs	Total Estimated Cost
1	No Build	\$26,000,000	0	\$26,000,000
1A	TSM	\$26,000,000	0	\$26,000,000
2	Minimum Build	\$34,000,000	\$14,416,000	\$48,416,000
3C	Retain I-71 and U.S. 50 in Narrowed Fort Washington Way	\$48,000,000	\$14,416,000	\$62,416,000
5	Narrowed Fort Washington Way with Expanded Access	\$74,400,000	\$21,528,000	\$95,928,000

Source: Balke Engineers, January 1997. Parsons Brinckerhoff Quade & Douglas, Inc., January 1997.

## **S.7 COMPARATIVE BENEFITS AND COSTS**

A trade-off analysis was completed to assess how alternatives meet the stated project goals and meet the project's defined purpose and need. No priority was established among the criteria as none were set by subcommittee. Table S-2 summarizes the trade-offs which are described in more detail in section 7.0 of this report.

## **S.8 PUBLIC INVOLVEMENT AND RECOMMENDATION**

More than 1000 citizens participated in public workshops, meetings, presentations and events at which the Fort Washington Way Subcorridor Study was been featured. More than 40 print and broadcast news stories appeared on project. A public hearing held on January 30, 1997 resulted in positive comments and stated preferences for Alternative 5.

A presentation of the "Evaluation of Alternatives Report" (Parsons Brinckerhoff, January 1997) and supporting technical documents was made to the Fort Washington Way Subcorridor Study Subcommittee on January 17, 1997. The subcommittee recommended Alternative 5 to the full I-71 Corridor Transportation Study Oversight Committee for environmental documentation and engineering. The I-71 Corridor Transportation Study Oversight Committee concurred with the Alternative 5 recommendation on January 31, 1997.

**Table S-2**  
**Summary of Alternatives Trade-off Analysis**

Evaluation Criteria	1. No Build	1A. TSM	2. Minimum Build	3C. Retain I-71 and U.S. 50 in Narrowed Fort Washington Way	5. Narrowed Fort Washington Way, Expand Access
<b>Maintain Safe, Efficient Operation and Capacity</b>					
<b>Freeway Conditions</b>	minor impacts	minor impacts	minor impacts	minor impacts	minor impacts
<b>Regional / Corridor Trips</b>					
Congestion on Fort Washington Way	Intermediate congestion	Intermediate congestion	Intermediate congestion	Greatest congestion	Least congestion
Weaving Analysis	No Change in LOS	No Change in LOS	No Change in LOS	No Change in LOS	Improved LOS eastbound and westbound
<b>Local/Short Distance Trips</b>					
(year 2020) Broadway & Sixth Street	LOS F	LOS F	LOS F	LOS F	LOS F with Alternative capacity at Third St. between Main and Vine Streets.
Fifth Street at Central Avenue	LOS B	LOS B	LOS B	LOS B	LOS F
<b>Improve Access</b>					
<b>To Cincinnati CBD</b>	No Improvement	No Improvement	Loss of access from I-71	Loss of access from I-71	New links at Third, Second, Fifth and Plum Streets
<b>To Riverfronts</b>	No Improvement	No Improvement	Loss of access to I-71	Loss of access to I-71	New links - Broadway to Taylor Southgate Bridge
<b>Transit Connections</b>	No Impact	No Impact	No Impact	No Impact	No Impact
<b>Reclaim Land or Air Rights</b>	Some decking opportunities	Some decking opportunities	Some decking opportunities	Reclaim 100-foot strip. Greater decking opportunities	Reclaim 200-300-foot strip. Greatest decking opportunities
<b>Stage/Phase Construction</b>	Staging/ Phasing possible with Stadium	Staging/ Phasing possible with Stadium	Staging/ Phasing possible with Stadium	Staging/ Phasing possible with Stadium	Staging/ Phasing possible with Stadium

Source: Parsons Brinckerhoff, February 1997.



## TABLE OF CONTENTS

<b>S.0 EXECUTIVE SUMMARY .....</b>	<b>S-1</b>
S.1 INTRODUCTION.....	S-1
S.2 PROBLEM STATEMENT.....	S-1
S.2.1 Transportation Issues.....	S-1
S.2.2 Community Issues.....	S-2
S.3 ALTERNATIVES CONSIDERED .....	S-2
S.4 TRAFFIC AND TRANSPORTATION CONSIDERATIONS.....	S-3
S.4.1 Regional Impacts.....	S-3
S.4.1 Local Area Impacts.....	S-3
S.5 SOCIOECONOMIC AND ENVIRONMENTAL CONSIDERATIONS .....	S-4
S.6 CAPITAL COST ESTIMATES.....	S-4
S.7 COMPARATIVE BENEFITS AND COSTS.....	S-5
S.8 PUBLIC INVOLVEMENT AND RECOMMENDATION.....	S-5
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 PURPOSE OF THE REPORT.....	1
1.2 PURPOSE OF THE STUDY.....	1
<b>2.0 PURPOSE AND NEED TO CONSIDER TRANSPORTATION IMPROVEMENTS ..</b>	<b>2</b>
2.1 TRANSPORTATION ISSUES .....	2
2.2 COMMUNITY ISSUES .....	2
2.3 PROJECT GOALS.....	3
2.4 EVALUATION CRITERIA .....	3
<b>3.0 PUBLIC INVOLVEMENT PROGRAM.....</b>	<b>5</b>
3.1 PROGRAM COMPONENTS .....	5
3.2 FORT WASHINGTON WAY SUB-CORRIDOR ANALYSIS COMMITTEE.....	5
3.3 OUTREACH MATERIALS.....	5
3.4 COMMUNITY MEETINGS AND PRESENTATIONS.....	5
3.5 MEDIA RELATIONS.....	6
3.6 HOTLINE AND BULLETIN BOARD SERVICE.....	6
3.7 COMMUNITY RESULTS AND CONCERNS .....	6
<b>4.0 ALTERNATIVES.....</b>	<b>8</b>
4.1 RANGE OF ALTERNATIVES.....	8
4.2 ALTERNATIVES FOR DETAILED STUDY.....	8
4.2.1 Alternative 1: No Build .....	8
4.2.2 Alternative 1A: Transportation System Management (TSM).....	8
4.2.3 Alternative 2: Minimum Build .....	11
4.2.4 Alternative 3C: Retain I-71 and U.S. 50 in Narrowed Fort Washington Way.....	11
4.2.5 Alternative 5: Retain I-71 and U.S. 50 in a Narrowed Fort Washington Way with Expanded Access.....	11

## TABLE OF CONTENTS (cont'd)

<b>5.0 TRAFFIC AND TRANSPORTATION ANALYSIS .....</b>	<b>16</b>
5.1 REGIONAL IMPACTS .....	16
5.2 LOCAL AREA IMPACTS .....	16
5.3 DOWNTOWN TRAFFIC IMPACTS .....	18
<b>6.0 SOCIOECONOMIC AND ENVIRONMENTAL CONSIDERATIONS .....</b>	<b>24</b>
<b>7.0 CAPITAL COST ESTIMATES .....</b>	<b>27</b>
<b>8.0 COMPARATIVE BENEFITS AND COSTS .....</b>	<b>29</b>
8.1 SIGNIFICANT TRADE-OFFS .....	29
<b>9.0 REFERENCES.....</b>	<b>32</b>

## LIST OF FIGURES

4-1	Alternative 1.....	9
4-2	Alternative 1A .....	10
4-3	Alternative 2.....	12
4-4	Alternative 3C .....	13
4-5	Alternative 5.....	14
5-1	Year 2020 Peak Hour LOS at Key Freeway Locations .....	17

## LIST OF TABLES

S-1	Estimated Capital Costs for Fort Washington Way Alternatives .....	S-4
S-2	Summary of Alternative's Trade-Off Analysis .....	S-5
5-1	Regional Traffic Impacts for the PM Peak Period - 2020 .....	18
5-2	AM Peak Hour Freeway Level of Service - 2020 .....	19
5-3	PM Peak Hour Freeway Level of Service - 2020 .....	20
5-4	AM Peak Hour Intersection Level of Service - 2020 .....	21
5-5	PM Peak Hour Intersection Level of Service - 2020 .....	22
5-6	Weaving Analysis - 2020 .....	23
6-1	Comparison of Alternatives for Environmental Screening.....	25
7-1	Summary of the Estimated Capital Costs (1996 Dollars) .....	28

## 1.0 INTRODUCTION

### 1.1 PURPOSE OF THE REPORT

The purpose of this report is to document the Major Investment Study (MIS) work and products prepared during the course of the Fort Washington Way Subcorridor Study. A second purpose is to summarize in a single document, the major elements and analysis of the Fort Washington Way Subcorridor Study in support of a recommended alternative which will be included in subsequent Transportation Improvement Program (TIP) documents.

Technical memoranda which provide a greater level of detail for the study's analysis are found in the Technical Appendices.

### 1.2 PURPOSE OF THE STUDY

The analysis of Fort Washington Way was undertaken to focus on solutions for both the transportation and community issues related to Fort Washington Way. The Fort Washington Way Subcorridor Study evaluated the need for and effects (benefits, impacts, and costs) of transportation improvement options. This study provided a basis upon which decision-makers decided to initiate more detailed studies on preferred alternative.

Fort Washington Way is a subcorridor within the I-71 Corridor Transportation Study MIS. However, the study has been conducted using a separate process from the I-71 Corridor Study, but concurrently with and mindful of the I-71 Corridor Study to allow for timely decisions on both studies. Both studies are being conducted by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), the Metropolitan Planning Organization (MPO) for the Cincinnati metropolitan area. Both studies follow federal guidelines<sup>1</sup> for evaluating major transportation investments.

Participation by affected jurisdictions and other parties was accomplished through the Fort Washington Way Subcommittee, a subcommittee of the I-71 Corridor Oversight Committee, which meets monthly. Public participation also was accomplished through the public involvement program of the I-71 Corridor Transportation Study and separate activities.

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<sup>1</sup> 23 CFR Part 450, 49CFR Part 613: Statewide Planning; Metropolitan Planning; Rule 450.318 Major Metropolitan Transportation Investments.

## **2.0 PURPOSE AND NEED TO CONSIDER TRANSPORTATION IMPROVEMENTS**

Fort Washington Way, as a result of the historical development/location, increased travel demands and current roadway standards, presents both transportation and community issues, which need to be addressed.

### **2.1 TRANSPORTATION ISSUES**

Fort Washington Way does not meet current geometric standards. Specific problem areas are:

- Lack of lane continuity,
- Inadequate weaving distances,
- Inadequate access spacing,
- Access design of left entrances and exits do not meet standards, and
- Inadequate driver decision distance.

All of which compromise safety.

Fort Washington Way no longer serves travel demands because:

- The facility is overly complex. Drivers face too many choices.
- It does not provide well-defined access by motor vehicles, bicycles, and pedestrians to and from Cincinnati CBD, the riverfronts, and the bridges into northern Kentucky that relate to Fort Washington Way (i.e., Central and Roebling Suspension bridges).
- The multiple functions coexisting on Fort Washington Way have compromised its ability to serve the through-traffic function of I-71.
- The Brent Spence Bridge is operating over capacity.
- The Central Bridge is underutilized.
- Interchanges are inadequate.

In addition, the design life of the pavement has been exceeded.

These transportation issues and potential improvements were considered in relation to the I-71 Corridor Transportation Study, as well as coordinated with the Eastern Corridor Study.

### **2.2 COMMUNITY ISSUES**

The community issues can be summarized as follows:

- Fort Washington Way, as it is currently designed, is a visual and physical barrier between Cincinnati CBD and the riverfront.
- Inadequate motor vehicle, bicycle, and pedestrian access or linkages between Cincinnati CBD and the riverfront are due, in part, to Fort Washington Way.

- Consideration should be given to other transportation modes, particularly mass transit, to serve the full spectrum of community transportation needs.
- Fort Washington Way's location and design constrains the ability to more fully develop the Cincinnati and Kentucky riverfronts.
- Too much land is devoted to transportation in proportion to available land.

Fort Washington Way carries I-71, connecting with the Brent Spence Bridge and I-75, bringing I-71 into northern Kentucky. I-71 is the subject of the current MIS for the Corridor between Paramount Kings Island near Mason, Ohio; and Florence, Kentucky; and the Cincinnati/Northern Kentucky International Airport. The Brent Spence Bridge also is the specific focus of the I-71 Corridor Study, as it carries both I-71 and I-75 traffic over the Ohio River at the western end of Fort Washington Way. Both the Brent Spence Bridge and the northern Kentucky section of I-71/I-75 are congested, fed by traffic coming in from Fort Washington Way.

## 2.3 PROJECT GOALS

The twelve key goals established for the Fort Washington Subcorridor Study that meet the Study area's needs for improving transportation characteristics of the Subcorridor are to:

1. Provide comparable overall access to the Cincinnati CBD from I-71, I-471, Covington and Newport riverfronts.
2. Maintain safe, efficient operation and capacity for Interstate trips.
3. Maintain safe, efficient operation and capacity for regional/corridor trips.
4. Maintain safe, efficient operation and capacity for local/short distance trips.
5. Better connect the downtowns and Cincinnati, Covington and Newport riverfronts.
6. Improve linkage to underutilized central riverfront bridges.
7. Facilitate land access to the riverfront.
8. Provide community access from both sides of the river to major riverfront public facilities/stadiums.
9. Provide recreational and pedestrian access to the Cincinnati, Covington and Newport riverfronts.
10. Incorporate intermodal transportation connections proposed in the I-71 Corridor Study.
11. Reclaim land and/or air rights for development.
12. Stage/phase construction to minimize disruption and maximize financial feasibility.

## 2.4 EVALUATION CRITERIA

To evaluate the alternatives in terms of the specific project goals listed above, a number of evaluation criteria were selected and approved by the Fort Washington Way Subcorridor Study Committee. These evaluation criteria include:

- I-71 Lane Continuity
- I-71 Mainline Capacity
- I-71 Standard Design Features
- Traffic Safety Considerations:
  - Decision Sight Distance

- Adequate Weave, Merge, Diverge Distances
  - Adequate CBD Access: Connections to Arterial Streets
  - Traffic Impacts on:
    - I-71
    - US 50
    - Fort Washington Way Ramps
    - Cincinnati CBD Arterial Street Network
    - Other I-71 and I-75 Interchanges
    - Existing/Proposed Stadium Parking Access Roads
    - I-471 Bridge
    - Brent Spence Bridge
  - Adequate Riverfront Access
  - Adequate Stadium Access
    - Existing
    - Proposed
  - Linkage to Underused Bridges
  - Diversion from Overused Bridges
  - Visual Linkage between Cincinnati CBD and Riverfronts
  - Pedestrian Linkage between both CBDs and Riverfronts
  - Opportunity to Reclaim Land/Air Rights
  - Compatibility with I-71 Transit Options and Alignments
  - Cost
  - Opportunity to Phase Construction/Meet Year 2000 New Stadium Opening Access Requirements
-

## **3.0 PUBLIC INVOLVEMENT PROGRAM**

### **3.1 PROGRAM COMPONENTS**

The Fort Washington Way Subcorridor Study's public involvement program began in June 1996. It included five primary public involvement techniques:

1. Outreach materials,
2. Fort Washington Way Subcorridor Subcommittee communications,
3. Community meetings and presentations,
4. Media relations, and
5. Hotline and bulletin board service.

The program was linked with the broader and more extensive I-71 Corridor Transportation Study program; however, separate subcorridor study materials and meetings were held to distinguish this project's needs and priorities from those of the larger study.

### **3.2 FORT WASHINGTON WAY SUB-CORRIDOR ANALYSIS COMMITTEE**

Beginning in April of 1996, a 19 member subcommittee of the I-71 Corridor Transportation Study Oversight Committee reviewed data regarding the alternatives for renovating or reconfiguring Fort Washington Way. The subcommittee met monthly (or more frequently, as needed) to receive study updates, technical information and provide review and comment. On January 17, 1997 the subcommittee voted unanimously to recommend Alternative 5 to the full I-71 Corridor Transportation Study Oversight Committee.

### **3.3 OUTREACH MATERIALS**

The following communication pieces were prepared for use in the public education/involvement activities:

- A Fort Washington Way folder describing the background, the goals and the process of the Fort Washington Way Subcorridor Study;
- Issues Four and Five of *FutureLINK*, the I-71 Study newsletter featured the Fort Washington Way Subcorridor Study;
- The I-71 Study Phase 3 flyer featured the Fort Washington Way Subcorridor Study;
- A mailer invited the public to a July 10, 1996 public meeting regarding the Fort Washington Way Subcorridor Study; and
- An I-71 Study newsletter which presented recommendations for the Fort Washington Way renovation.

### **3.4 COMMUNITY MEETINGS AND PRESENTATIONS**

The Fort Washington Way Subcorridor Study was been featured at more than 20 public meetings, workshops and community presentations.



In addition to the monthly meetings of the Fort Washington Way Subcorridor Study Subcommittee, which were open to the public, these events have included:

- Public meetings in July 1996 and January 1997 to solicit stakeholder input;
- 13 open house/workshops held from September 13 through October 3, 1996; and
- Eight presentations given at community events and shopping centers throughout the I-71 Corridor, from Florence to Blue Ash, from mid-July through November, 1996.

### **3.5 MEDIA RELATIONS**

An ongoing program of media relations was conducted for the Fort Washington Way Subcorridor Study, including news releases, media contacts, interviews, coverage of meetings and events, editorial board briefings and resulting editorials.

### **3.6 HOTLINE AND BULLETIN BOARD SERVICE**

The I-71 Corridor Transportation Study Hotline (929-2828) featured information regarding the Fort Washington Way Subcorridor Study and has been used by the public to voice opinions regarding the project.

All documents regarding the Fort Washington Way Subcorridor Study have been uploaded to the I-71 Corridor Transportation Study computer bulletin board service and are available to anyone who has the modem facilities to access it (731-7171).

### **3.7 COMMUNITY RESULTS AND CONCERNS**

More than 1000 citizens participated in public workshops, meetings, presentations and events at which the Fort Washington Way Subcorridor Study was featured. This included the meetings of the Fort Washington Way Subcorridor Study Subcommittee, at which elected officials and stakeholder representatives from throughout the region reviewed and commented on the analysis.

More than 40 print and broadcast news stories appeared on the Fort Washington Way Subcorridor Study.

Based on the amount of media coverage and citizen comment at the public meetings, the Fort Washington Way Subcorridor Study achieved a high level of awareness and public participation, which provided decision-makers information regarding the public's reaction to the study results and served as a solid basis for building consensus for the option chosen for more detailed study and implementation. Community concerns expressed during the outreach program identified the following issues which were considered in development of the alternatives:

- Fort Washington Way, as it is currently designed, is a visual and physical barrier between Cincinnati CBD and the riverfront;

- Inadequate motor vehicle, bicycle, and pedestrian access or linkages between Cincinnati CBD and the riverfront are due, in part, to Fort Washington Way;
- Consideration should be given to other transportation modes, particularly mass transit, to serve the full spectrum of community transportation needs;
- Fort Washington Way's location and design constrains the ability to more fully develop the Cincinnati and Kentucky riverfronts; and
- Too much land is devoted to transportation in proportion to available land.

The public hearing held on January 30, 1997 resulted in all public testimony in support of Alternative 5. The results of the public meeting and the recommendation of the Fort Washington Way Subcorridor Study Subcommittee were presented to the I-71 Corridor Transportation Study Oversight Committee. The Oversight Committee voted to accept the recommendation to select Alternative 5 for more detailed engineering and environmental study.

## 4.0 ALTERNATIVES

### 4.1 RANGE OF ALTERNATIVES

The alternative solutions to the Fort Washington Way study were defined using an iterative process. Monthly meetings with the Fort Washington Way Subcorridor Study Subcommittee and the I-71 Corridor Transportation Study Oversight Committee resulted in a list of guiding considerations - goals, objectives and evaluation - criteria for screening alternatives, general transportation concepts, preliminary conceptual alternatives, revised conceptual alternatives and detailed definitions of alternatives.

The preliminary conceptual alternatives were presented in the summer of 1996 and were then modified and presented in a final report in December 1996 ("Definition of Alternatives Technical Memorandum"). Alternatives considered but eliminated from further study include:

- Narrow Fort Washington Way to carry I-71 traffic only;
- Remove Fort Washington Way;
- Liberty Street - Supplement Fort Washington Way with an upgraded east/west urban boulevard at Liberty Street with new interchange links at to I-75 and I-71 at either end to eliminate I-71 through-movement traffic on Fort Washington Way;
- 12th Street, Covington - Supplement Fort Washington Way with an upgraded east/west urban boulevard at 12th Street in Covington/10th Street in Newport, Kentucky; and
- Central Parkway Tunnels.

### 4.2 ALTERNATIVES FOR DETAILED STUDY

The following alternatives were studied in greater detail as part of this MIS and evaluated by the Fort Washington Way Subcorridor Study Subcommittee. All alternatives, but to a greater extent Alternatives 3C and 5, provide an opportunity to "deck" all or a portion of Fort Washington Way. The air rights could be used for additional development and/or parkland, allowing the visual connectivity of the downtown to the riverfront to be more apparent.

#### 4.2.1 Alternative 1: No Build

This alternative assumes only the planned rehabilitation of existing Fort Washington Way and safety upgrades (see Figure 4-1).

#### 4.2.2 Alternative 1A: Transportation System Management (TSM)

This alternative assumes the enhanced bus system and other low-capital cost components of the I-71 Corridor Transportation Study TSM Alternative (see Figure 4-2). Features include:

- Expansion of Third Street and creation of a new Second Street parallel to Pete Rose Way, resulting in a one-way pair of three- to five- lane arterials with Third Street westbound and Second Street eastbound;
- Redesign of the remaining through movements in Fort Washington Way with three lanes in each direction, reducing the required right-of-way width;
- Reclamation of approximately 200 to 300 feet of former Fort Washington Way right-of-way;
- Extension of downtown north-south streets across Fort Washington Way;
- Signalization of every intersection of the new arterials with extended City streets, and synchronize the signals;
- Improved truck access to Fort Washington Way;
- East end links to I-471 and U.S. 50:
  - Add lane to southbound ramp from Fort Washington Way to I-471;
  - Add a new connector from Broadway to Taylor Southgate Bridge;
  - Addition of two new ramps: I-471 north to Ninth Street; and I-71 southbound to Eighth Street;
  - Widening of two ramps: Adding one lane to the ramp from U.S. 50 westbound to Sixth Street; and adding one lane to the ramp from I-471 northbound to Sixth Street;
  - Signage directing former Fort Washington Way/I-71 traffic to other routes;
- West end links to I-75 and the Clay Wade Bailey Bridge:
  - New ramp from I-75 northbound to Fifth Street;
  - New ramp from I-75 southbound to the new Second Street;
  - New ramp from Third Street westbound and Plum Street southbound to I-71/I-75 southbound; and
  - New ramp from Clay Wade Bailey Bridge to the new Second Street.

## 5.0 TRAFFIC AND TRANSPORTATION ANALYSIS

The traffic analysis included a segment capacity analysis at seventeen freeway segment locations, intersection capacity analysis at eleven key locations, and a weaving analysis for selected sections and alternatives. Highlights of regional and local traffic analysis are summarized in this section.

### 5.1 REGIONAL IMPACTS

Major changes on downtown access and through traffic, such as those proposed as part of the Fort Washington Way Subcorridor Study build alternatives, could result in changes to the regional traffic. Therefore, it was important to examine the entire study region to gauge whether the current transportation infrastructure could handle any secondary impacts.

For the Fort Washington Subcorridor Study, six major freeways and highways were examined along various points: I-71, I-75, I-471, I-275, Cross County Highway (CCH), and the Norwood Lateral (NL). Both the AM and PM peak hour volumes were studied ("Travel Demand Forecasting Final Report", February 3, 1997). Table 5-1 shows the PM peak hour volumes.

The alternatives evaluated for the Fort Washington Way Subcorridor Study would not have a significant impact on any of the estimated regional traffic volumes. Alternative 5 would the greatest deviation from the other alternatives, however, it is still relatively modest. Therefore, the major impacts of the Fort Washington Way Subcorridor Study alternatives are limited to downtown Cincinnati and the surrounding areas as discussed below.

### 5.2 LOCAL AREA IMPACTS

The results of the more detailed traffic analysis at seventeen regional freeway segment locations directly related to the study corridor are documented in Tables 5-2 and 5-3, and Figure 5-1. The following summarizes the results of the analysis ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis" (January 30, 1997):

- During the AM or PM peak hour, fourteen of the seventeen regional freeway segments currently operate at unacceptable levels of congestion (LOS E or LOS F), in at least one direction. Within Fort Washington Way, the existing level of congestion is LOS E in the peak direction and LOS D in the off-peak direction.
- Under Alternatives 1, 1A, 2 and 3C, fifteen of the seventeen regional freeway segments would operate at unacceptable levels of congestion, including most of Fort Washington Way.

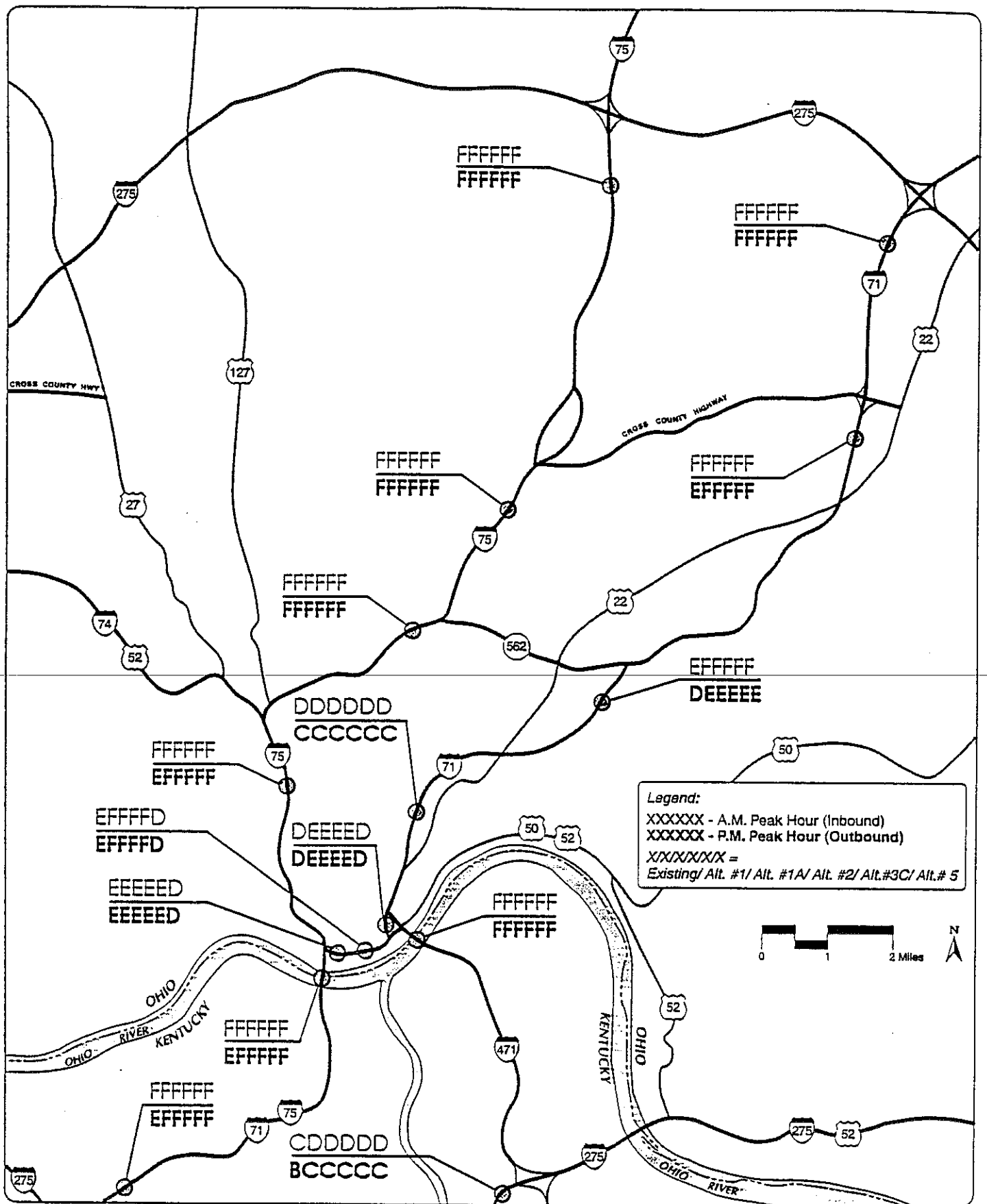


FIGURE 5-1

CINCINNATI / FORT  
WASHINGTON WAY

Rev. January 28, 1997  
 Rev. January 10, 1997  
 December 18, 1996  
 DRW

Year 2020 Peak Hour LOS  
at Key Freeway Locations

**Table 5-1****Regional Traffic Impacts for the PM Peak Period - 2020**

<b>Location</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
I-71 NB at I-71/275	19,000	19,100	19,200	19,200	18,900
I-71 NB at I-71/CCH	17,800	17,600	17,700	17,700	17,100
I-71 NB at I-71/NL	19,000	18,900	19,000	18,900	17,700
I-75 NB at I-75/275	21,200	21,000	21,000	21,100	20,800
I-75 NB at I-75/CCH	21,300	21,200	21,200	21,200	21,000
I-75 NB at I-75/NL	19,200	19,300	19,200	19,200	18,900
I-75 NB at I-75/74	26,700	26,600	26,600	26,700	26,600
I-275 EB b/w I-71&75	19,800	19,900	19,700	19,900	19,700
Cross County b/w I-71/75	5,700	5,700	5,600	5,600	5,500
Norwood Lateral b/w I-71/75	10,000	10,100	10,000	10,000	9,900
I-71/75 SB at I-71/75/275	20,600	20,600	20,600	20,500	20,700
I-275 EB b/w I-71/75&471	15,000	14,900	14,900	14,900	14,700
I-275 EB at Combs-Hehl Bridge	15,300	15,200	15,100	15,100	15,100
I-471 SB at I-471/275	18,700	18,500	18,500	18,500	18,600

Source: KPMG Peat Marwick LLP, February 1997.

Notes: NB = northbound  
 SB = southbound  
 EB = east bound  
 WB = westbound  
 NL = Norwood Lateral  
 CCH = Cross County Highway

### 5.3 DOWNTOWN TRAFFIC IMPACTS

The intersection analysis was conducted for eleven key intersections in downtown Cincinnati ("Travel Demand Forecasting Final Report", February 3, 1997). The results of the intersection capacity analysis are shown in Tables 5-4 and 5-5 and summarized by the following points:

For the AM Peak Hour (see Table 5-4):

- Each of the eleven intersections currently operates at acceptable levels of service.
- Under Alternatives 1, 1A, 2 and 3C, each of the eleven intersections would operate at acceptable levels of service.
- Under Alternative 5, nine of the eleven intersections would operate at acceptable levels of service. However, the Central Avenue/Fifth Street and Main Street/Third Street intersections would operate over-capacity (LOS F).

**Table 5-2**  
**AM Peak Hour Freeway Level of Service - 2020**

Freeway Segment	Traffic Direction	Number of Lanes	Volume/LOS				
			Existing	Alt. 1	Alt. 1A	Alt. 2	Alt. 3C
I-71 at Plum Street	EB	4	7,720/E	8,189/E	8,125/E	7,950/E	7,738/E
	WB	4	6,316/D	6,707/D	6,648/D	6,504/D	6,331/D
I-71 at Race Street	EB	3	6,129/E	6,310/E	6,628/E	6,425/F	6,716/F
	WB	3	5,014/D	5,163/D	5,128/D	5,257/E	5,494/E
I-71 at Vine Street	EB	3	6,238/E	6,474/F	6,407/F	6,716/F	7,115/F
	WB	3	5,103/D	5,296/E	5,242/E	5,494/E	5,821/E
I-71 at Sycamore Street	EB	3	6,002/E	6,032/E	5,977/E	5,893/F	6,086/F
	WB	3	4,910/D	4,935/D	4,891/D	4,821/D	4,980/D
I-71 at Lytle Park Tunnel	NB	2	2,757/D	3,114/D	3,094/D	3,178/D	3,307/D
	SB	2	3,370/D	3,805/E	3,781/E	3,884/E	4,041/E
I-71 south of Taft	NB	5	4,248/B	4,758/C	4,721/C	4,725/C	4,677/C
	SB	4	5,897/D	6,718/D	6,637/D	6,651/D	6,623/D
I-75 south of Hopple Street	NB	4	6,942/E	7,656/E	7,656/E	7,653/E	7,644/E
	SB	4	8,817/E	9,359/F	9,349/F	9,269/F	9,211/F
I-71 at Ohio River	NB	3	8,155/F	8,867/F	8,800/F	8,783/F	8,816/F
	SB	3	6,859/E	8,135/F	8,180/F	8,175/F	8,140/F
I-471 at Ohio River	NB	3	8,394/F	8,455/F	8,491/F	8,405/F	8,428/F
	SB	3	4,157/D	4,516/D	4,533/D	4,526/D	4,550/D
I-275 west of I-471	EB	3	2,585/C	3,462/C	3,369/C	3,514/C	3,456/C
	WB	3	2,522/C	3,849/D	3,873/D	3,841/D	3,909/D
I-71/I-75 north of I-275	NB	3	6,743/E	7,435/F	7,429/F	7,417/F	7,422/F
	SB	4	6,479/E	8,260/F	8,246/F	8,257/F	8,422/F
I-71 south of I-275	NB	3	4,066/D	5,524/E	5,559/E	5,513/E	5,520/E
	SB	3	7,200/E	7,877/F	7,846/F	7,619/F	7,635/F
I-71 south of Cross County Hwy.	NB	3	4,694/E	5,250/E	5,269/E	5,244/E	5,240/E
	SB	3	6,405/E	6,965/F	7,026/F	6,945/F	6,911/F
I-71 south of Norwood Lateral	NB	4	4,984/D	5,328/D	5,322/D	5,289/D	5,272/D
	SB	4	7,502/E	8,172/F	8,111/F	8,091/F	8,128/F
I-71 south of I-275	NB	3	2,922/C	6,063/F	6,044/F	6,074/F	6,062/F
	SB	3	7,307/E	7,891/F	7,911/F	7,903/F	7,939/F
I-75 south of Norwood Lateral	NB	3	6,989/F	6,928/F	6,921/F	6,955/F	6,928/F
	SB	3	6,712/E	6,820/F	6,816/F	6,796/F	6,832/F
I-75 south of Cross County Hwy.	NB	3	7,036/F	7,148/F	7,142/F	7,158/F	7,161/F
	SB	3	7,724/F	8,344/F	8,376/F	8,262/F	8,414/F

Source: BRW, Inc. and KPMG Peat Marwick LLP, January 1997.

- <sup>1</sup> Only 2 lanes in the eastbound direction  
<sup>2</sup> Four basic freeway lanes in each direction

 = Congested Segment (LOS E & F)



**Table 5-3**  
**AM Peak Hours Freeway Level of Service - 2020**

Freeway Segment	Traffic Direction	Number of Lanes	Volume/ LOS					
			Existing	Alt. 1	Alt. 1A	Alt. 2	Alt. 3C	Alt. 5
I-71 at Plum Street	EB	4	6,316 / D	6,707 / D	6,648 / D	6,504 / D	6,331 / D	4,559 / C
	WB	4	7,720 / E	8,189 / E	8,125 / E	7,950 / E	7,738 / E	5,572 / D
I-71 at Race Street	EB	3	5,014 / D	5,163 / D	5,128 / D	5,257 / E	5,494 / E	4,559 / C <sup>2</sup>
	WB	3	6,129 / E	6,310 / E	6,628 / E	6,425 / F	6,716 / F	5,572 / D <sup>2</sup>
I-71 at Vine Street	EB	3	5,103 / D	5,296 / E	5,242 / F	5,494 / E	5,821 / F	4,559 / C <sup>2</sup>
	WB	3	6,238 / E	6,474 / F	6,407 / F	6,716 / F	7,115 / F	5,572 / D <sup>2</sup>
I-71 at Sycamore Street	EB	3	4,910 / D	4,935 / D	4,891 / D	4,821 / D	4,980 / D <sup>1</sup>	4,559 / C <sup>2</sup>
	WB	3	6,002 / E	6,032 / E	5,977 / E	5,893 / E	6,086 / E	5,572 / D <sup>2</sup>
I-71 at Lytle Park Tunnel	NB	2	3,370 / D	3,805 / E	3,781 / E	3,884 / E	4,041 / E	3,225 / D
	SB	2	2,757 / D	3,114 / D	3,094 / D	3,178 / D	3,307 / D	2,638 / D
I-71 south of Taft	NB	5	4,828 / C	5,570 / C	5,543 / C	5,522 / C	5,522 / C	5,309 / C
	SB	4	4,033 / C	4,425 / C	4,451 / C	4,454 / C	4,441 / C	4,225 / C
I-75 south of Hopple Street	NB	4	8,254 / E	8,877 / F	8,817 / F	8,813 / F	8,843 / F	8,703 / F
	SB	4	7,006 / E	7,626 / E	7,603 / E	7,597 / E	7,608 / E	7,666 / E
I-71 at Ohio River	NB	3	6,301 / E	7,293 / E	7,290 / E	7,349 / F	7,368 / F	7,682 / F
	SB	3	7,158 / E	7,899 / F	7,833 / F	7,876 / F	7,854 / F	8,154 / F
I-471 at Ohio River	NB	3	4,036 / D	4,351 / D	4,335 / D	4,341 / D	4,386 / D	4,475 / D
	SB	3	7,065 / F	7,050 / F	7,044 / F	7,033 / F	7,012 / F	7,141 / F
I-275 west of I-471	EB	3	1,803 / B	2,952 / C	2,948 / C	2,939 / C	2,923 / C	2,903 / C
	WB	3	1,847 / B	2,578 / C	2,569 / C	2,582 / C	2,589 / C	2,627 / C
I-71/I-75 north of I-275	NB	3	5,861 / E	6,916 / F	6,895 / F	6,904 / F	6,909 / F	6,933 / F
	SB	4	5,953 / D	7,217 / E	7,210 / E	7,214 / E	7,186 / E	7,258 / E
I-71 south of I-275	NB	3	5,843 / F	6,665 / F	6,702 / F	6,716 / F	6,713 / F	6,600 / F
	SB	3	5,077 / E	5,974 / F	5,962 / F	5,951 / F	5,988 / F	5,875 / F
I-71 south of Cross County Hwy.	NB	3	5,588 / E	6,228 / F	6,169 / F	6,200 / F	6,187 / F	5,984 / F
	SB	3	4,770 / E	5,330 / E	5,290 / E	5,302 / E	5,313 / E	5,134 / E
I-71 south of Norwood Lateral	NB	4	5,931 / D	6,634 / E	6,601 / E	6,635 / E	6,630 / E	6,205 / D
	SB	4	5,290 / D	5,742 / D	5,764 / D	5,761 / D	5,774 / D	5,438 / D
I-71 south of I-275	NB	3	4,129 / D	7,412 / F	7,351 / F	7,326 / F	7,394 / F	7,290 / F
	SB	3	5,209 / F	6,284 / F	6,270 / F	6,277 / F	6,276 / F	6,133 / F
I-75 south of Norwood Lateral	NB	3	6,530 / F	6,735 / F	6,744 / F	6,715 / F	6,737 / F	6,626 / F
	SB	3	6,540 / F	6,550 / F	6,545 / F	6,537 / F	6,537 / F	6,537 / F
I-75 south of Cross County Hwy.	NB	3	6,936 / F	7,450 / F	7,422 / F	7,419 / F	7,404 / F	7,362 / F
	SB	3	6,881 / F	6,958 / F	6,966 / F	6,973 / F	6,984 / F	6,294 / F

Source: BRW, Inc. and KPMG Peat Marwick LLP, January 1997.

- <sup>1</sup> Only 2 lanes in the eastbound direction  
<sup>2</sup> Four basic freeway lanes in each direction.


 = Congested Segment (LOS E & F)

Table 5-4

## AM Peak Hour Intersection Level of Service - 2020

Intersection	Traffic Control	AM Peak Hour Level of Service					
		Existing	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Seventh Street at Central Avenue	Signal	A	B	A	A	A	C
Fifth Street at Central Avenue	Signal	C	B	C	C	C	F
Third Street At Broadway	Signal	A	A	A	A	A	B
Third Street at Main Street	Signal	A	A	A	A	A	F
Third Street at Vine Street	Signal	A	A	A	B	A	B
Clay Wade Bailey Bridge at Third Street	Signal	C	C	C	B	B	A
Central/Taylor Bridge at Pete Rose Way	Signal	—	C	C	C	C	B
Sixth Street at Broadway	Signal	B	C	C	C	C	D
Third Street at Walnut Street	Signal	—	A	A	A	A	D
Fourth Street at Broadway	Signal	—	A	A	A	A	A
Fourth Street at Central Avenue	Signal	—	A	A	A	A	D

Source: BRW, Inc., January 1997.

Note: Congested Segment = 

During the preliminary engineering phase of project development possible mitigation would be explored. Possible mitigation at the Central Avenue/Fifth Street location would include adding additional lanes on Fifth Street and Central Avenue. Another possible scenario would be to allow oncoming traffic to the downtown area from eastbound U.S. 50 and southbound I-75 to divert to alternate access locations, such as the proposed Third Street ramp to Vine and Main Streets ("Travel Demand Forecasting Final Report", February 3, 1997).

Similar options exist for the Main Street/Third Street intersection. Additional lanes could be provided, or excess traffic could be handled by alternate routes, such as Vine Street.

For the PM Peak Hour (see Table 5-5):

Each of the eleven intersection locations currently operates at acceptable levels of service during the PM peak hour and each of the alternatives is projected to continue to operate acceptably in 2020.

Table 5-5

## PM Peak Hour Intersection Level of Service - 2020

Intersection	Traffic Control	PM Peak Hour Level of Service					
		Existing	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Seventh Street at Central Avenue	Signal	A	A	A	A	A	A
Fifth Street at Central Avenue	Signal	A	A	A	A	A	C
Third Street At Broadway	Signal	A	A	A	A	A	A
Third Street at Main Street	Signal	A	A	A	A	A	A
Third Street at Vine Street	Signal	A	A	A	A	A	A
Clay Wade Bailey Bridge at Third Street	Signal	A	A	A	A	A	A
Central/Taylor Bridge at Pete Rose Way	Signal	—	B	B	B	B	B
Sixth Street at Broadway	Signal	A	A	A	A	A	A
Third Street at Walnut Street	Signal	—	A	A	A	A	D
Fourth Street at Broadway	Signal	—	A	A	A	A	A
Fourth Street at Central Avenue	Signal	—	A	A	A	A	D

Source: BRW, Inc., January 1997.

In the Highway Capacity Manual (Special Report 209, 1994) weaving is defined as “the crossing of two or more traffic streams traveling in the same general direction along the length of highway without the aid of traffic control devices. Weaving areas are formed when a merge area is closely followed by a diverge area, or when an on-ramp is closely followed by an off-ramp and two are joined by an auxiliary lane.”

A weaving analysis was conducted for three of the Fort Washington Way Subcorridor Study Alternatives 1A, 3C and 5 (“Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis” January 30, 1997). The results of the weaving analysis are shown in Table 5-6 and summarized below.

- The four weaving areas analyzed under Alternative 1A included the eastbound and westbound Fort Washington way segments. Each of these areas is expected to operate unacceptably (LOS E/F) for both the AM and PM peak hours in 2020. The U.S. 50 segment also is expected to operate unacceptably (LOS E/F) for both the AM and PM peak hours under Alternative 1A.

**Table 5-6**  
**Weaving Analysis - 2020**

Alternative	Section Description	Level of Service			
		AM Peak Hour		PM Peak Hour	
		Weaving	Non-Weaving	Weaving	Non-Weaving
1A	I-71 SB (Walnut Street to US 50)	E	D	E	D
1A	I-71 SB (US 50 to Elm Street)	E	E	E	E
1A	EB US 50 (Broadway to I-471)	F	D	F	E
1A	I-71 NB (US 50 to Vine Street)	F	D	E	D
1A	I-71 NB (Race Street to US 50)	F	E	E	D
3C	I-71 NB (US 50 to Vine Street)	F	E	F	E
3C	I-71 NB (Walnut Street to US 50)	F	E	F	F
3C	I-71 SB Mainline (Common Section)	F	E	F	E
5	I-71 SB Mainline (Common Section)	A	A	A	B
5	I-71 NB Mainline (Common Mainline)	B	B	B	B
5	EB US 50 (Broadway to I-471)	E	D	E	E

Source: BRW, Inc., January 1997.

Note: Congested Segment = 

- The four weaving areas analyzed under Alternative 1A included the eastbound and westbound Fort Washington way segments. Each of these areas would operate unacceptable (LOS E/F) for both the AM and PM peak hours in 2020. The U.S. 50 segment also would operate poorly (LOS E/F) for both the AM and PM peak hours under Alternative 1A.
- The weaving areas analyzed under Alternative 3C indicate that both the eastbound and westbound Fort Washington Way segments would operate unacceptably (LOS E and LOS F) during both the AM and PM peak hours in 2020. Operations of US 50 would be similar to Alternative 1A.
- The weaving areas analyzed under Alternative 5 indicates that both the eastbound and westbound Fort Washington Way segments would operate well (LOS B) during both the AM and PM peak hours in 2020. The U.S. 50 segment (Broadway to I-471) would operate slightly better than either Alternative 1A and 3C.

## 6.0 SOCIOECONOMIC AND ENVIRONMENTAL CONSIDERATIONS

The community and environmental impacts discussion is based on the "Social, Economic and Environmental Screening Technical Memorandum", Balke Engineers, December 1996.

The purpose of the environmental screening was three-fold: 1) to identify potential significant adverse social, economic or environmental impacts for each alternative; 2) to determine whether mitigation measures are possible to reduce or to avoid any identified impacts; and 3) to determine whether all environmental regulations and requirements can be satisfied during subsequent environmental impact assessment studies upon completion of the MIS effort.

The environmental screening for the Fort Washington Way Subcorridor Study was based on the review of secondary source data (baseline information as obtained by the I-71 MIS Corridor Study), identifying features, resources and issues. Alternative development at this stage consists of conceptual representations of design layout or basic configuration "footprint," (although actual right-of-way estimates have not been determined at this stage).

Based on this environmental screening, none of the alternatives under consideration would result in significant adverse social, economic or environmental impact. No "fatal flaws" in terms of environmental impact were identified for any of the alternatives considered. Alternative 5 would displace two small parks adjacent to the south side of Third Street; therefore, subsequent requirements would include completion and approval of a Section 4(f) evaluation.

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Alternatives 2, 3C and 5 have potential impacts on historic resources and sites located north of Fort Washington Way and the Roebling Suspension Bridge itself. None of the alternatives would directly impact any of these historic resources, however more detailed study and coordination with the Ohio and Kentucky State Historic Preservation Offices may reveal adverse indirect impacts, such as visual intrusion, that could require avoidance or mitigation.

There are no significant differences among the build alternatives for the environmental impact categories evaluated with the exception of the potential taking of parklands under Alternative 5. Additional environmental studies would be required if one of the build alternatives were selected.

The Table 6-1 highlights the results of this environmental screening study through a comparison of the alternatives and the potential impacts identified for each.

**Table 6-1**  
**Comparison of Alternatives for Environmental Screening**

Alternative	No Build	Build			
	1	1A	2	3C	5
Right-of-Way Required (preliminary estimates)	None	None	None	None	4 warehouses/office buildings; 2 small parks, parts of 5 off-street parking lots
Displacement/Relocation of Residences	None	None	None	None	None
Neighborhood and Community Characteristics	None	None	None	None	None
Potential 4(f) Parks	None	None	None	None	2 parks
Cultural Historic	None	None	Possible due to proximity	Possible due to proximity	Possible due to proximity
Archaeological	None	None	None	None	None
Ecological Resources	None	None	None	None	None
Endangered Species	None	None	None	None	None
Floodplain	Project area is in 100-year floodplain - design of all Build alternatives will need to accommodate flood protection				
Other	None	None	None	None	None
Land Use Impacts	None	None	None	None	None
Noise	Not determined at this time, although few sensitive receptors in project proximity; full analysis will need to be conducted during environmental phase				
Hazardous Materials	None	None	None	None	None

Table 6-1 (continued)

Alternative	Build			
	No Build 1	1A	2	3C
Air Quality	Based on regional traffic data, insignificant differences among alternatives and between Build and No Build; full air quality assessment will need to be conducted during environmental phase			
Economic Development	Potentially negative, since No Build does not change existing, perceived barrier between CBD and riverfront area	Positive	Positive	Positive
(although all Build alternatives require removal of on-street parking on Central Parkway)				
Visual and Aesthetics Transportation Patterns	None	None	Positive	Positive
	None	Minimal	Minimal	Requires closure of John Street between Third and Fifth, which is important link between CBD and Covington (via Bailey Bridge) and part of Cincinnati metro CBD loop system
Pedestrian Patterns	None	None	None	None
Construction Impacts	Maintenance of traffic plans will need to be developed for all alternatives (including No Build - rehabilitation of existing facilities)			
Mitigation	None	Replacement of parking	Replacement of parking	Replacement of parking: Section 4(f) park impact mitigation to be determined
Noise abatement may need to be considered for all Build alternatives				

Source: Balke Engineers, January 1997.

Notes: <sup>1</sup> Some of the components of Alternative 5, specifically ramp connections on both the east and west sides of the CBD, to I-75 and to the Clay Wade Bailey Bridge on the west end, and to the I-471 Bridge, Sixth Street and Ninth Street on the east end, could be incorporated into Build Alternatives 2 and 3C. Many of the impacts identified for Alternative 5 are due to these east and west connection components.

<sup>2</sup> No physical impact to any site or districts listed on, or determined eligible for the National Register of Historic Places.

## **7.0 CAPITAL COST ESTIMATES**

Capital cost estimates have been developed for all the alternatives under consideration as described in greater detail in the "Scope and Cost Estimate Assumptions for Fort Washington Way and Related Improvements" (January 17, 1997). Capital costs are defined as all costs including the costs for the No Build Alternative which includes the rehabilitation of Fort Washington Way and related safety improvements. The costs include all engineering, administration, construction and equipment purchase for all aspects of the alternatives plus appropriate contingency allowance. Table 7-1 shows the capital cost differences among the alternatives.



**Table 7-1**  
**Summary of the Estimated Capital Costs (1996 Dollars)**

Alternative		Assumptions	Base Costs	Optional Ramp Costs	Total Estimated Cost
1	No Build	Full depth pavement rehabilitation, safety upgrades	\$26,000,000	0	\$26,000,000
1A	TSM	No Build plus TSM Alternative from I-71 Corridor Transportation Study	\$26,000,000	0	\$26,000,000
2	Minimum Build	TSM Improvements of Alternative 1A plus relocate Pete Rose Way 150 feet to the north and widening between Race and Main Streets. Fort Washington is maintained as U.S. 50.	\$34,000,000	\$14,416,000	\$48,416,000
3C	Narrowed Fort Washington Way	TSM Improvements of Alternative 1A plus relocate Pete Rose Way 250 feet to the north and widening between Race and Main Streets, I-71 and U.S. 50 maintained in Fort Washington Way. Reclaim 100 feet of land.	\$48,000,000	\$14,416,000	\$62,416,000
5	Narrowed Fort Washington Way with Expanded Access	TSM Improvements of Alternative 1A plus , I-71 and U.S. 50 maintained in Fort Washington Way, new Second and Third Streets create a one-way couplet pair, improved links to I-471 and U.S. 50 on the east and improved links to I-75 and the Clay Wade Bailey Bridge on the West. Reclaim 200 to 300 feet of land.	\$74,400,000	\$21,528,000	\$95,928,000

Source: Balke Engineers, January 1997. Parsons Brinckerhoff Quade & Douglas, Inc., January 1997.

## 8.0 COMPARATIVE BENEFITS AND COSTS

### 8.1 SIGNIFICANT TRADE-OFFS

The selection of an alternative by local decision-makers involves the balancing of the advantages associated with each of the alternatives under consideration. The formal technical analysis prepared during the course of this MIS supports certain observations which distinguish between the merits of the alternatives as they relate to the goals established for the study. The following summarizes the responsiveness of the alternatives to meet the purpose and need of the project.

#### Maintain safe, efficient operation and capacity for Interstate trips.

- Freeway segment capacity analysis indicated that the traffic impact differences among alternatives on the adjacent regional freeway system are minor ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).

#### Maintain safe, efficient operation and capacity for regional/corridor trips.

- Existing Fort Washington Way includes left-side on and off ramps and a major weaving movement caused by U.S. 50 joining I-71 on the left and departing on the right in both directions. Weaving would not change under Alternatives 1, 1A and 2 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).
- The weaving analysis for Fort Washington Way corridor shows that Alternatives 1A and 3C would result in unacceptable operations along both directions of Fort Washington Way (I-71/U.S. 50) during both the AM and PM peak hours in 2020. The same levels of operation would occur under Alternative 1 or 2 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).
- The weaving analysis of the Fort Washington Way corridor indicates that under Alternative 5 both the eastbound and the westbound segments would operate well (LOS B) for both the AM and PM peak hours in 2020 ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).
- Freeway segment capacity analysis indicates that Alternative 5 would result in the least congestion within Fort Washington Way. Alternative 3C would result in the highest level of congestion within Fort Washington Way ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).

#### Maintain safe, efficient operation and capacity for local/short distance trips.

- The intersection capacity analysis of the key access locations into the Cincinnati CBD shows that the demand volume during the 2020 AM (inbound) peak hour is expected to be

significantly higher than the PM (outbound) peak hour ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).

- The intersection analysis of the 2020 AM peak hour indicates that the Broadway/Sixth Street intersection is expected to operate over-capacity under each of the alternatives. However, under Alternative 5 ample reserve capacity should be available at other locations such as Third Street between Main and Vine Streets ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).
- Under Alternative 5, the intersection analysis of the 2020 AM peak hour indicates that the Central Avenue/Fifth Street intersection would operate over-capacity. However, ample reserve capacity should be available for incoming eastbound U.S. 50 and southbound I-75 vehicles via the proposed ramp to Second Street at the Vine and Main Street locations ("Cincinnati Fort Washington Way Subcorridor Traffic Operations Analysis", January 30, 1997).

Provide comparable overall access to the Cincinnati CBD from I-71, I-471, Covington and Newport riverfronts, better connect the downtowns and Cincinnati, Covington and Newport riverfronts, improve linkage to underutilized central riverfront bridges and facilitate land access to the riverfront, provide community access from both sides of the river to major riverfront public facilities/stadiums, and provide recreational and pedestrian access to the Cincinnati, Covington and Newport riverfronts.

- Alternatives 1 and 1A do not improve connections between the downtown and the riverfront, and do not facilitate riverfront development opportunities.
- There would be no direct connections between I-71 and the Roebling Bridge under Alternatives 2, 3C, and 5.
- Under Alternative 5, improved connections would be possible from northbound Clay Wade Bailey Bridge to eastbound Second Street with a new ramp and from Plum Street to southbound Clay Wade Bailey Bridge also with a new ramp.
- At this stage of development, it is anticipated that all the build alternatives are capable of providing for both existing pedestrian needs and for improving pedestrian access between the CBD area and the riverfront. The existing pedestrian skywalks, sidewalks along surface streets, and staircases over Fort Washington Way have been incorporated into all of the build alternatives.

Incorporate intermodal transportation connections proposed in the I-71 Corridor Study.

- None of the alternatives studied for Fort Washington Way would preclude any of the intermodal connections under consideration as part of the I-71 Corridor Transportation Study. Figures 4-3, 4-4, and 4-5 show the inclusion of the Race to Madison Transit Corridor.

Reclaim land and/or air rights for development.

- Alternatives 3C and 5 would reclaim land south of Fort Washington Way that could be used for redevelopment. Alternative 3C would reclaim a strip of land approximately 100 feet in width. With Alternative 5, the reclaimed strip of land would be 200 to 300 feet wide.
- All alternatives, but to a greater extent Alternatives 3C and 5, provide an opportunity to "deck" all or a portion of Fort Washington Way. The air rights could be used for additional development and/or parkland, allowing the visual connectivity of the downtown to the riverfront to be more apparent.

Stage/phase construction to minimize disruption and maximize financial feasibility.

- Once the determination is made regarding the riverfront and stadium development plans, there would be opportunities to coordinate the construction schedule of Fort Washington Way and the riverfront and stadium developments to take full advantage of the timing for efficiency and cost savings. During preliminary engineering, a construction staging plan would be developed.

## 9.0 REFERENCES

Balke Engineers, December 1996. "Fort Washington Way Subcorridor Analysis - Social, Economic and Environmental Screening Technical Memorandum".

Balke Engineers, Parsons Brinckerhoff Quade & Douglas, Inc., January 17, 1997. "Scope and Cost Estimate Assumptions for Fort Washington Way and Related Improvements".

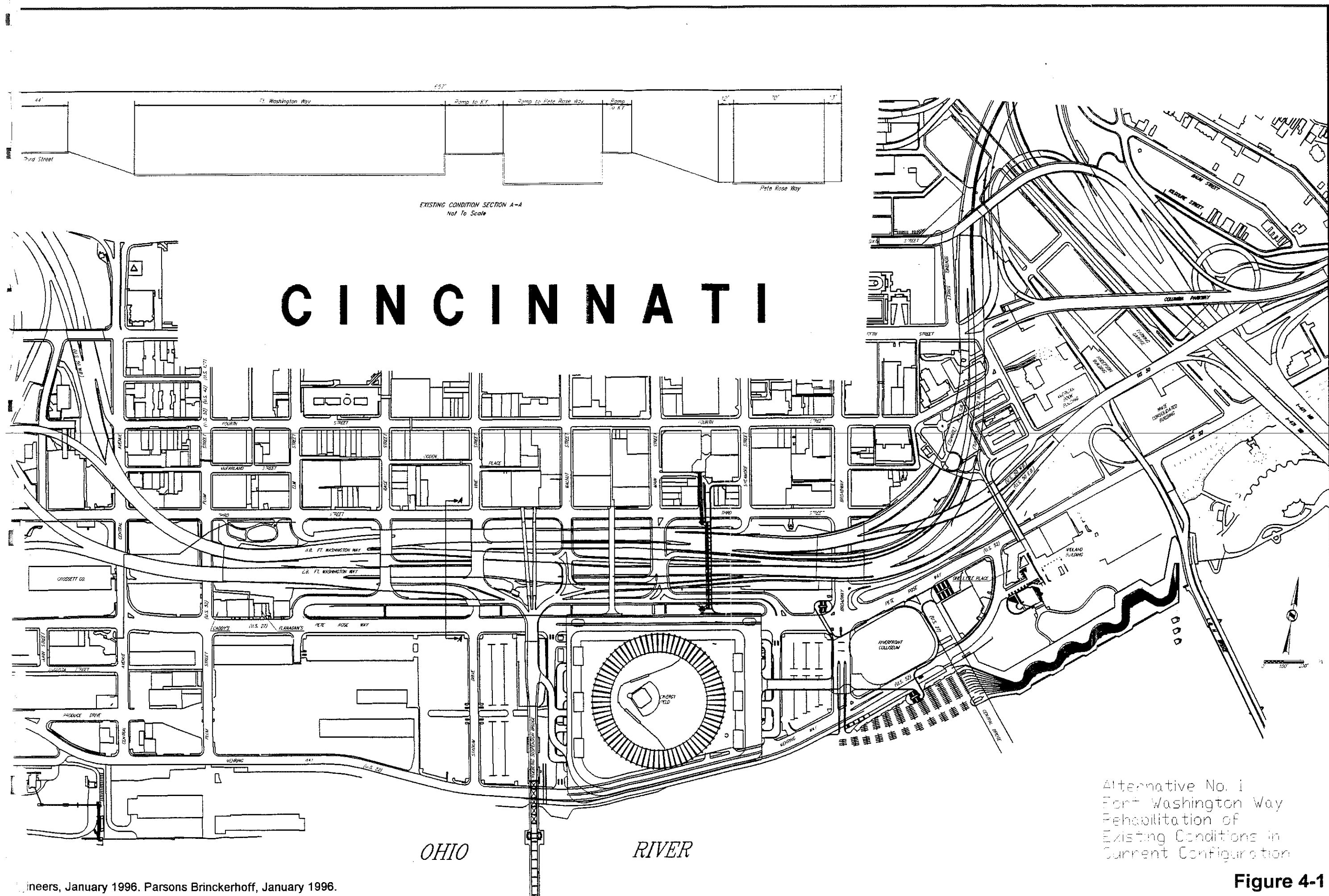
BRW, Inc., January 30, 1997. "Cincinnati - Fort Washington Way Traffic Operations Memorandum".

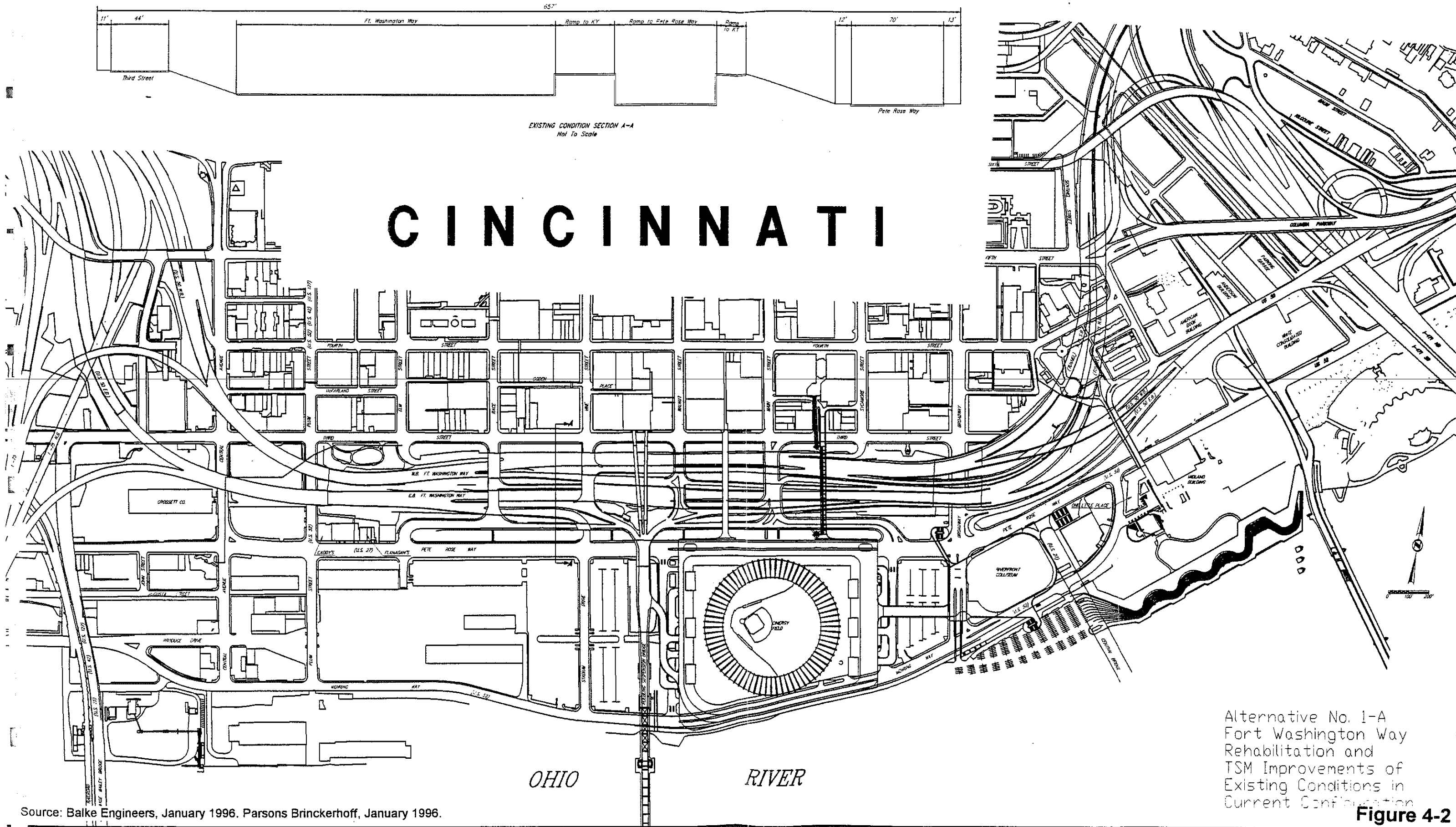
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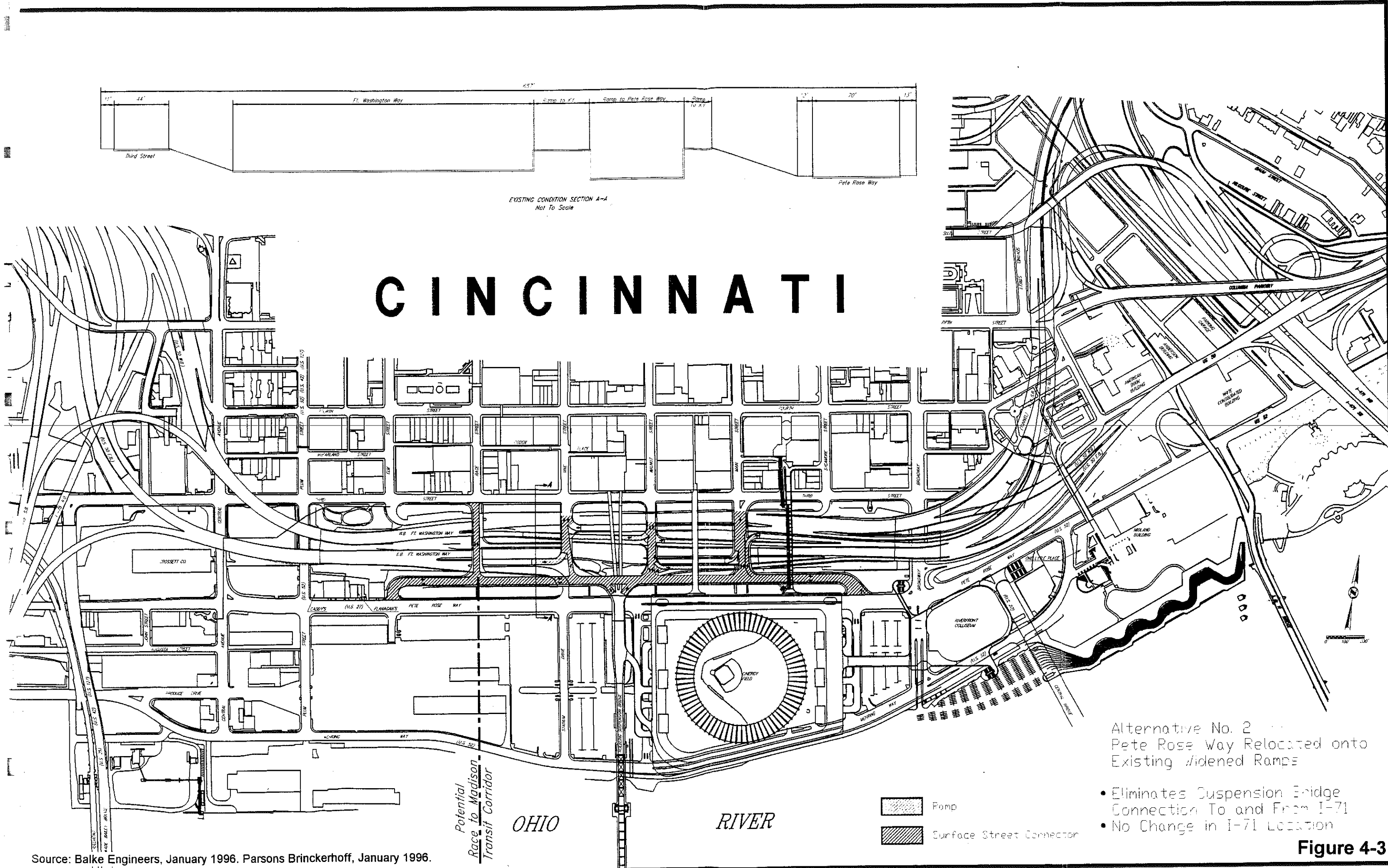




Alternative No. 1-A  
Fort Washington Way  
Rehabilitation and  
TSM Improvements of  
Existing Conditions in  
Current Configuration

**Figure 4-2**

Source: Balke Engineers, January 1996. Parsons Brinckerhoff, January 1996.



Source: Balke Engineers, January 1996. Parsons Brinckerhoff, January 1996.

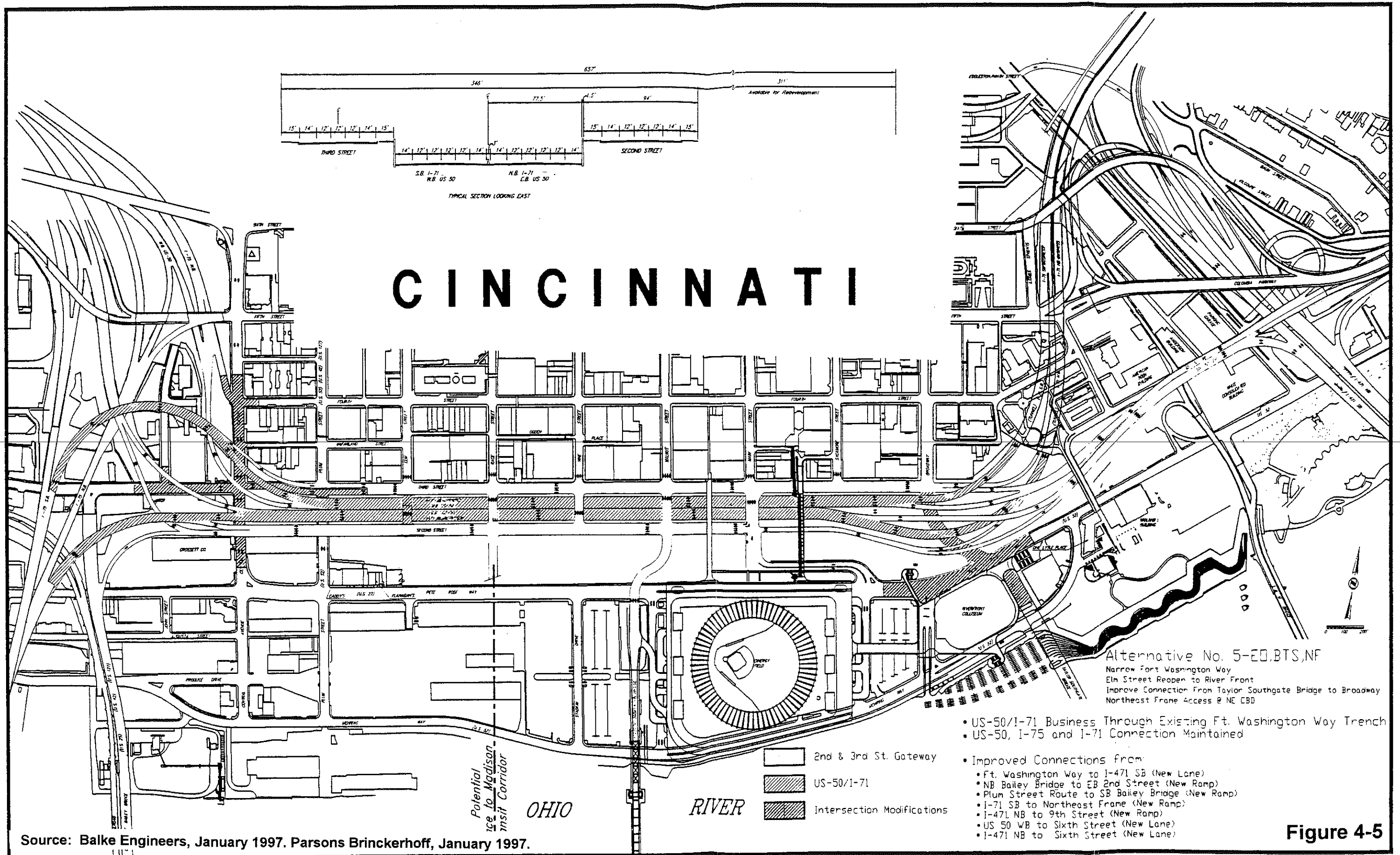
Figure 4-3



# CINCINNATI



Source: Balke Engineers, January 1996. Parsons Brinckerhoff, January 1996.



Source: Balke Engineers, January 1997. Parsons Brinckerhoff, January 1997.

**Figure 4-5**

10/25/96 - Selected  
 11/13/96 - Revised  
 11/19/96 - Revised  
 12/04/96 - Revised  
 12/13/96 - Revised Per City of Cincinnati, ODOT, KTC, FHWA, OKI Workshop  
 01/15/97 - Revised